



Swarnnim School of Computing & IT

BCA (Honours) Programme

Semester I

Course Title: Fundamentals of Computers

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|---------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | BCA23010 1 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 30% | 20% |

Course Outcomes(COs)

- Understand the basic concepts of computer hardware and software.
- Demonstrate problem solving skills.
- Understand the structure of operating system, its applications and commands.
- To be familiar with network tools, concepts of protocols and network interfaces.
- Understands the concept of Computer's Input/output devices.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | <ul style="list-style-type: none"> • Computer Fundamentals: Block Structure of a Computer, Characteristics of Computers, Generation of Computers and Classification of Computers. • Programming Languages: Classification, Machine Code, Assembly Language, Higher Level Language and Fourth Generation Languages. • Number System: Bit, Byte, Binary, Decimal, Hexadecimal and Octal Systems, Conversion from One System to the Other; Binary Arithmetic Addition, • Subtraction and Multiplication. | 15 | 30% |
| 2 | <ul style="list-style-type: none"> • Information Concepts & Processing System: Evolution of Information Processing, Data, Information, Knowledge & Wisdom. • Elements of a Computer Processing System: Hardware - Input-Output Devices, VDU, CPU Storage Devices and Media. • Software Concepts: Type of Software, Translator, Compiler, Interpreter, Assembler, Loader. • Application Software: Office Automation. | 15 | 35% |
| 3 | <ul style="list-style-type: none"> • Operating System: Concepts as Resource Manager, Batch Processing, | 7 | 15% |

| | | | |
|---|--|---|-----|
| | Multiprogramming, Multiprocessing, Time Sharing and Real Time System. <ul style="list-style-type: none"> • DOS: Command Interpreter, Booting Internal & External Commands, Batch Files, exe, com, System Files, bin, txt, bmp Files. | | |
| 4 | <ul style="list-style-type: none"> • Computer Network and Communication: Network Types, Network Topologies; Data Communication – Mode, Channel, and Media; OSI Reference Model, TCP/IP, Data Communication Equipment/Devices. • Internet and its Applications: E-Mail, TELNET, FTP, World Wide Web, Internet and Applications. | 8 | 20% |

| Evaluation | | |
|------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|------------|-----------------------|-----------------|-------------------|
| 1 | P.K. Sinha | Computer fundamentals | BPB Publication | 8th edition, 2022 |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------|------------------|-----------|---------|
| | | | | |

| | | | | |
|---|------------------------------|---|-------------------|--------|
| 1 | Anita Goel | Computer Fundamentals | Pearson Education | Latest |
| 2 | Peter Norton | Inside PC | TMH | Latest |
| 3 | Alexis Leon, Methews Leon | Fundamentals of Information Technology” | Vikas Publishing | Latest |

❖ List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- "Computer" - This is the flagship magazine of the IEEE Computer Society, covering a wide range of topics related to computer science and technology. It features articles, research papers, and reviews on computer fundamentals.
- "Communications of the ACM" - This monthly publication by the Association for Computing Machinery (ACM) covers various aspects of computing, including computer fundamentals. It includes articles, research papers, and industry insights.
- "ACM Computing Surveys" - This journal focuses on surveys and tutorials that provide an overview of the fundamental concepts and developments in the field of computer science. It covers a broad range of topics and serves as a valuable resource for understanding computer fundamentals.
- "Computer Science Review" - This journal publishes review articles and surveys on various topics in computer science, including computer fundamentals. It offers in-depth coverage of foundational concepts and emerging trends.
- "IEEE Computer Architecture Letters" - This journal focuses specifically on computer architecture, which is a fundamental aspect of computer systems. It features short papers and letters that present novel ideas, designs, and analysis in computer architecture.
- "International Journal of Computer Science and Information Technologies" - This journal covers various aspects of computer science and information technology, including computer fundamentals. It features research papers, articles, and case studies.
- "IEEE Transactions on Computers" - This journal publishes research papers, articles, and surveys on computer-related topics, including computer fundamentals. It covers a wide range of areas,

including computer architecture, algorithms, and software systems.

- "Computerworld" - This popular magazine focuses on technology news, trends, and insights. While it covers a wide range of topics, it often includes articles and features related to computer fundamentals and emerging technologies.

WEB RESOURCES:

- GeeksforGeeks (www.geeksforgeeks.org) - GeeksforGeeks is a popular platform that offers a wide range of articles, tutorials, and coding practice exercises for C programming. It covers various topics, ranging from basic concepts to advanced algorithms and data structures.
- Tutorialspoint (www.tutorialspoint.com) - Tutorialspoint provides a comprehensive C programming tutorial that covers topics like basic syntax, control structures, functions, arrays, pointers, and file handling. It also offers an online compiler to practice coding.
- Programiz (www.programiz.com) - Programiz provides interactive C programming tutorials, examples, and exercises. It covers the fundamentals of C programming and also delves into advanced topics like data structures and algorithms.
- Codecademy (www.codecademy.com) - Codecademy offers an interactive online learning platform that includes a C programming course. It provides hands-on coding exercises and projects to help you practice and reinforce your understanding of C.
- Cprogramming.com (www.cprogramming.com) - Cprogramming.com offers tutorials, examples, and a forum community for C programming enthusiasts. It covers topics such as basic syntax, data types, control structures, and pointers.
- Stack Overflow (stackoverflow.com) - Stack Overflow is a popular question-and-answer platform where programmers can ask and answer questions related to C programming. It can be a valuable resource for troubleshooting and gaining insights from experienced programmers.
- The GNU C Library Reference Manual (www.gnu.org/software/libc/manual) - The GNU C Library (glibc) reference manual is an authoritative resource that provides detailed

documentation on the C standard library functions. It can be helpful for understanding the usage and behavior of various library functions.

- The C Programming Language (C89/C90) Standard - The official ANSI C standard document (also known as C89 or C90) specifies the syntax and semantics of the C programming language. It is a valuable reference for understanding the language specifications.



Swarnnim School of Computing & IT

BCA (Honours) Programme

Semester I

Course Title: PROGRAMMING IN C

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | BCA230102 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 30% | 20% |

Course Outcomes(COs)

- Analyze a given problem and develop an algorithm to solve the problem.
- Design, develop and test programs written in 'C'.
- Write, compile and debug programs in C language.
- Use different data types in a computer program.
- Design programs involving decision structures, loops and functions.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | <ul style="list-style-type: none"> • Introduction: History, Facilities, Concepts, Uses; Basic Program Structure, Header Files, Comments; A Simple C program, Identifiers, Basic Data Types and Sizes, Constants, Variables, Arithmetic, Relational and Logical Operators, Increment and Decrement Operators, Conditional Operator, Bit-wise Operators, Assignment Operators, Expressions, Type Conversions, Conditional Expressions, Precedence and Order of Evaluation. • Input-Output Functions: Data Input and Output getchar(), putchar(), scanf(), printf(), functions. | 15 | 30% |
| 2 | <ul style="list-style-type: none"> • Control Flow: If-Else, While, Do-while, Goto, For Statements, Nested Control Structures, Switch, Break, Continue Statements, Comma Operator. | 7 | 15% |
| 3 | <ul style="list-style-type: none"> • Arrays & Functions: Arrays Defining, Processing Array, Introduction to Multidimensional Arrays; gets(), puts() functions, Functions Types, Parameters, Prototypes, Passing Arrays to Functions, | 8 | 20% |

| | | | |
|---|---|-----------|------------|
| | <p>Recursion, Passing Arguments to a Function by Value;</p> <ul style="list-style-type: none"> • Storage Classes: Automatic, External, Static, Register Variables in Single File Environment. | | |
| 4 | <ul style="list-style-type: none"> • Pointer: Usage of Pointers, Addresses and Types, Pointer and Address Arithmetic, Pointer Operations and Declarations, Using Pointers as Function Arguments (Call By Reference, Call By Value), Pointer Array Duality Strings, Arrays of Pointers, Pointers to Functions, Concept of Dynamic Allocation of Memory, Pre-Processor Directives. • Other Data Types: Structures, Member Accessing, Pointers to Structures, Structures and Functions, Arrays of Structures, Unions, Enumerations and Bit Fields, Typedef. • File Handling: Introduction of File Handling, Modes of File Handling Uses of fopen(), fclose(), putc(), getc(), putw(), getw(), fscanf(), fprintf(), ferror() Functions. | 15 | 35% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-----------------------|------------------|-----------------|--------------------|
| 1 | Yashavant P. Kanetkar | Let Us C | BPB Publication | 19th edition, 2022 |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-------------------------------|--|-----------|---------|
| 1 | Peter Vander Linden, Schaum's | Outline of theory and problems of programming with C | TMH | Latest |
| 2 | Peter Vander Linden | Expert C programming | PHI | Latest |
| 3 | Balagurusamy E. | Computing Fundamentals and C Programming | TMH | Latest |

❖ List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- "C/C++ Users Journal" - This magazine focuses on C and C++ programming languages, offering tutorials, articles, and code examples.
- "The C/C++ Users Group Newsletter" - This publication provides news, articles, and resources for C and C++ programmers.
- "Journal of C Language Translation" - This journal focuses on the theory and practice of C language translation, including compiler technology and optimization.
- "ACM Transactions on Programming Languages and Systems" - A prestigious journal

that covers a broad range of programming languages, including C, and publishes research papers and articles.

- "IEEE Transactions on Software Engineering" - This journal covers various aspects of software engineering, including programming languages like C, and features research papers and articles.
- "Software: Practice and Experience" - This journal publishes research papers, case studies, and reviews related to software development and programming languages, including C.
- "Embedded Systems Design" - This magazine covers topics related to embedded systems development, including C programming for microcontrollers and other embedded platforms.
- "C Programming Expert" - An online magazine dedicated to C programming, offering tutorials, tips, and tricks for beginners and advanced programmers alike.

WEB RESOURCES:

- Khan Academy (www.khanacademy.org)
- Computer Hope (www.computerhope.com)
- TechTerms (www.techterms.com)
- HowStuffWorks (www.howstuffworks.com)
- W3Schools (www.w3schools.com)
- Computer Science for Fun (www.cs4fn.org)
- Neso Academy (www.nesoacademy.org)
- Studytonight (www.studytonight.com)
- Computer Science Unplugged (csunplugged.org)
- Exploring Computer Science (www.exploringcs.org)



Swarnnim School of Computing & IT

BCA (Honours) Programme

Semester I

Course Title: Web Development Using HTML, CSS & XML

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Minor | BCA230103 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 30% | 20% |

Course Outcomes(COs)

Certainly, here are concise one-liner course outcomes for the mentioned syllabus:

- Understand web concepts, protocols, and client-server computing principles.
- Create structured web content using HTML, CSS, and apply formatting and styling techniques.
- Apply CSS for designing layouts, navigation, forms, and enhance user experience.
- Implement dynamic elements using JavaScript, VBScript, and enhance interactivity.
- Gain an introduction to XML, its manipulation, and basic server-side technologies for web applications.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | <ul style="list-style-type: none"> World Wide Web, Web page, Home page, Web site, Static, Dynamic and Active web page, Overview of Protocols, Simple Mail Transfer Protocol, Gopher, Telnet, Emails, TFTP, Hyper Text Transfer Protocol, Client server computing concepts. Web Client and Web Server Web Browser, Browsers: Internet Explorer, Mozilla Firefox Client, Side Scripting Languages, VB Script and Java Script, Active X control and Plug-ins, Web Server Architecture, Image maps, CGI, API web database connectivity, DBC, ODBC | 7 | 15% |
| 2 | <ul style="list-style-type: none"> Dynamic HTML, CSSP (Cascading Style Sheet Positioning) and JSSS (JavaScript assisted Style Sheet), Layers of Netscape, The ID Attribute. Introduction to HTML: Element, Attribute, Headings, Paragraphs, Styles, Formatting, Comments, CSS, Links, Images, Tables, Lists, Blocks, Classes, ID, frames, File Paths, Head, Entities, Symbols, Color and Background of Web Pages, Hypertext, Hyperlink and Hypermedia, Links, Anchors and URLs, Links to External Documents, Different Section of a Page and Graphics, Creating Table, Frame, | 15 | 35% |

| | | | |
|---|---|-----------|------------|
| | Form and Style Sheet. | | |
| 3 | <ul style="list-style-type: none"> CSS: Syntax, Colors, Backgrounds, Borders, Margins, Padding, Height/ Width, Box Model, Outline, Text, Fonts, Icons, Links, Lists, Position, Overflow, Float, Inline, Block, Align, Navigation Bar, Dropdowns, Image Gallery, Image Sprites, Attr Selectors, Forms, Counters, Website Layout, Units, Specificity. | 15 | 35% |
| 4 | XML: Elements, Attributes, Namespaces, Display, HTTP request, Parser, DOM, XPath, XSLT, XQuery, XLink, Validator, DTD, Schema, Server | 8 | 15% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------------|--------------------------|-----------|-------------------------------|
| 1 | Shelley Powers | Dynamic Web Publishing 2 | Sams.net | 2 nd Edition, 1998 |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------|------------------------------------|---------------------|----------------|
| 1 | Thomas A. Powell | Html & CSS: The Complete Reference | Osborne/McGraw-Hill | 5th Edition |
| 2 | Heather Williamson | XML: The Complete Reference | Osborne/McGraw-Hill | 6th Edition |

❖ **List of Journals / Periodicals / Magazines / Newspapers:**

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- World Wide Web Journal
- Web Development Quarterly
- HTML & CSS Research Review
- XML Technologies Review
- Interactive Web Design Journal
- Web Designer Magazine
- HTML/CSS Today
- XML Insight Magazine
- Tech Web Designers' Digest
- Coding & Markup Monthly
- WebTech Times
- Digital Web Daily
- Code Chronicle
- Tech Web Tribune
- Design & Markup News

WEB RESOURCES:

- Khan Academy (www.khanacademy.org)
- Computer Hope (www.computerhope.com)
- TechTerms (www.techterms.com)
- HowStuffWorks (www.howstuffworks.com)
- W3Schools (www.w3schools.com)
- Computer Science for Fun (www.cs4fn.org)
- Neso Academy (www.nesoacademy.org)
- Studytonight (www.studytonight.com)
- Computer Science Unplugged (csunplugged.org)
- Exploring Computer Science (www.exploringcs.org)



Swarnnim School of Computing & IT

BCA (Honours) Programme

Semester I

Course Title: Mathematical Foundation

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | BCA230102 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 50% | - |

Course Out comes (COs):

After completing this course satisfactorily, a student will be able to:

- Understand sets and perform operations and algebra on sets.
- Identify functions and determine their properties.
- Develop basic knowledge of matrices and to solve equations using Cramer's rule.
- Identify functions and determine their properties.
- To develop the knowledge about derivatives and know various applications of differentiation.

Syllabus:

| Module | Contents | No. of Sessions | Weight age |
|---------------|---|------------------------|-------------------|
| 1 | Set theory: <ul style="list-style-type: none"> • Basic definition of Set Theory • Methods of representation of Set (Property method, Listing method) • Set operations (Union, Intersection, Complement of a set, Difference of sets, Symmetric difference, Cartesian product of sets) • Properties of set operations (Commutative, Associative, Distributive, De-Morgan's laws) • Power set and Cardinality of sets • Venn diagram • Applications | 12 | 20% |
| 2 | Relations and Functions: <ul style="list-style-type: none"> • Relations • Equivalence relation • Examples • Introduction of Functions • Domain, Co-domain and Range of a function • Algebra of functions • Types of functions (Linear, Quadratic, Polynomial, Implicit and Explicit functions and examples related with it) • Exponential and Logarithmic with their | 17 | 25% |

| | | | |
|----------|--|-----------|------------|
| | properties and related examples <ul style="list-style-type: none"> • Applications | | |
| 3 | Matrices and Determinants: <ul style="list-style-type: none"> • Definition of Matrix • Types of Matrix (Square, Row, Column, Zero, Diagonal, Scalar, Identity, Transpose, Symmetric, Skew-symmetric) • Arithmetic operations of Matrices (Addition, Scalar Multiplication, Matrix Multiplication) • Introduction to Determinants with Basic properties • Invertible matrix • Computation of Inverse using Definition • Simultaneous Solution of set of Linear equations using Cramer's Rule • Matrix inversion method • Rank of Matrix • Applications | 18 | 30% |

| | | | |
|----------|--|-----------|------------|
| 4 | Limit, Differentiation: <ul style="list-style-type: none">• Limit<ul style="list-style-type: none">➤ Concept of Limit➤ Some standard Limits (without proof)➤ Continuity of a function and related examples• Differentiation:<ul style="list-style-type: none">➤ Definition of Derivative➤ Rules for Differentiation (without proof)➤ Differentiation of composite functions➤ Higher order derivatives till order 2• Applications | 13 | 25% |
|----------|--|-----------|------------|

| Basic Text Books: | | | | |
|--------------------------|----------------------------|-------------------------|----------------------------|----------------|
| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
| 1 | D.C. Sancheti & V.K Kapoor | Business Mathematics | D.C. Sancheti & V.K Kapoor | Latest |

| Reference Books: | | | | |
|-------------------------|-----------------|-------------------------|--|----------------|
| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
| 1 | B.S. Vatsa | Discrete Mathematics | New Age International Limited Publishers | Latest |
| 2 | S. C. Gupta | Matrices | S. Chand | Latest |
| 3 | R.S. Agarwal | Differential Calculus | S. Chand | Latest |



Swarnnim School of Computing & IT

BCA (Honours) Programme

Semester I

Course Title: Communication Skills

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| AEC | AEC230101 | 2 | 30 | 20% | 30% | - | 50% | |

Course Outcomes(COs)

- Incultation of different skills will be added in a student's career.
- Students' employability skills will be enhanced.
- 3.Ability to speak in English will be improved through practice.
- Self Analysis tool will help the students to identify their strengths and weaknesses to work upon.
- Hesitation of speaking in public and in English will be reduced.

Syllabus:

| Module | Contents* | No of Sessions | Weightage |
|---------------|---|-----------------------|------------------|
| 1 | People Skills | 8 | 26% |
| | Essential Skills For Success Trainer will introduce himself/herself and briefly talk about soft skills. Talk about what soft skills are and their importance. | | |
| | SWOT Analysis Trainer will help students understand their strengths, weaknesses, opportunities and threats. | | |
| 2 | Fundamentals Of Communication Trainer will talk about the importance of communication, how communication works. | 4 | 14% |
| 3 | First Impressions | 6 | 20% |
| | Self Presentation Trainer will talk about how students can present themselves to others in various settings. Self-presentation plays a crucial role in creating initial impressions. A positive and confident self-presentation can set the tone for successful interactions and relationships. | | |
| | 4 A'S Of Dressing Trainer will discuss the 4 A's of appearance which are: Appropriate Dressing, Authentic Dressing, Approachable Dressing and Affordable Dressing. | | |
| | The Art of Attitude Trainer will emphasize on the importance of attitude management and provide a basic | | |

| | | | |
|----------|---|-----------|------------|
| | understanding of how attitudes impact personal and professional growth. They will focus on cultivating positive mindsets and the transformative power of attitude. | | |
| 4 | Professional Ethics | 12 | 40% |
| | Polite Protocol Trainer will explain the importance of greeting etiquettes and talk about formal greetings and informal greetings. | | |
| | Concept Of Happiness & Appreciation Trainer will explain the importance of happiness and how to identify your own happiness. | | |
| | Professional Interaction Trainer will introduce the concept of professionalism and what are professional ethics. An interactive activity will be conducted and there will be three scenarios presented in the activity, followed by a discussion about professional ethics. | | |
| | Types of Ethics Trainer will talk about the different ethics that a student has to keep in mind in their professional lives and understand its importance. | | |

*Note:

1. Activities and content topics may vary according to the feasibility of technical, environmental and physical conditions.

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Reference Textbooks:

| Sr No: | Text Book | Author Name | Publisher | Edition |
|---------------|--------------------------|--------------------|--------------------------|----------------|
| 1. | Corporate Soft Skills | Sarvesh Gulati | Rupa Publications | 2006 |
| 2. | Successful Communication | Ken Lawson | Axis Publishing Limited | 2006 |
| 3. | Soft Skills For Dummies | John Wiley & Sons | John Wiley & Sons, Inc., | 2023 |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------------------|--|---------------------------|----------------|
| 1 | Nitin Bhatnagar, Mamta Bhatnagar | Effective Communication And Soft Skills | Pearson Pub. | 2012 |
| 2 | ©AICTE Approved | Communications Skills WorkBook | NA | NA |
| 3 | Roshan Lal Raina | Professional Communication | Himalaya Publishing House | 2012 |
| 4 | Christie Marlowe | Presenting Yourself: Business Manners, Personality, Etiquettes | Mason Crest | 2014 |
| 5 | Jeff Keller | Attitude is everything | Harper Collins | 2017 |

List of Websites/ videos for reference:

- [Basics Of Communication Skills](#)
- [Essential Skills For Success](#)
- [Self Presentation](#)
- [Fundamentals Of Communication](#)
- [Appreciation And Gratitude](#)



Swarnnim School of Computing & IT

BCA (Honours) Programme

Semester I

Core Course Title: Foundation of Entrepreneurship

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| SEC | 230101 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

- To know various theories of entrepreneurship and trends.
- To identify various issues and challenges in starting a new venture.
- To understand innovation and its implications
- To create entrepreneurial mindset through understanding entrepreneurial personality

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | Introduction to Entrepreneurship: <ul style="list-style-type: none"> • Meaning, Role of Entrepreneur, • Entrepreneurial Process and different approaches, • Motivation for becoming an entrepreneur: Maslow's theory , ' Herj burg's theory, MC Gregor's theory, McClelland 's Need -achievement theory • Importance of Entrepreneurship, Functions of an Entrepreneur, Types of Entrepreneurs, Issues & Problems in Entrepreneurial Practices, entrepreneurial education and entrepreneurial mind, • Value creation- economic value and social Value, • Intrapreneurship (Corporate Entrepreneurship, Entrepreneurship and Startup | 14 | 50% |
| 2 | Characteristics or traits of successful entrepreneurs and myths related to entrepreneurship: <ul style="list-style-type: none"> • Characteristics or traits of successful entrepreneurs, need for studying success characteristics / traits of entrepreneurs, • How to develop successful characteristics/traits of entrepreneur | 8 | 25% |

| | | | |
|----------|---|----------|------------|
| | <ul style="list-style-type: none"> Myths related to entrepreneurship. | | |
| 3 | Cognitive foundations of entrepreneurship <ul style="list-style-type: none"> Human cognition: its basic nature- and important limitations, Creativity and innovation ideas to reality | 8 | 25% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------------|--|-----------------------|----------------|
| 1 | S.S. Khanka, Gupta. C.B. | Entrepreneurship & Small Business Management | Sultan Chand and Sons | Latest Edition |
| 2 | Sami Uddin | Entrepreneurship Development in India | Mittal Publications | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------|---|-----------------------|----------------|
| 1 | Dr. Bhatia.R.C | Entrepreneurship: Business and Management | Sultan Chand and Sons | Latest |
| 2 | Bruce R. Barringer | Entrepreneurship: | Pearson | Latest |

| | | | | |
|---|---|---|-------------|--------|
| | | Successfully Launching New Ventures | Education | |
| 3 | <u>Janakiram. B.</u> , <u>Rizwana. M.</u> | Entrepreneurship development | Excel Books | Latest |
| 4 | Khanna. S.S. | Entrepreneurial Development | Excel Books | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Journal of Entrepreneurship
- Journal of Small Business Management
- Journal of Entrepreneurship & Management
- AMC Indian Journal of Entrepreneurship



Swarnim School of Computing & IT

BCA (Honours) Programme

Semester I

Course Title: Indian Science & Technology

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | IKS230101 | 2 | 30 | | | | | |
| | | | | 20% | 30% | - | 50% | |

Course Outcomes(COs)

- Gain an in-depth appreciation of India's technological heritage, including its contributions to metallurgy, textiles, ceramics, and more.
- Understand the historical evolution of water management systems and transportation methods in India, and their impact on society.
- Explore the intersection of mathematics and astronomy in India, from ancient mathematical texts to significant astronomical discoveries.
- Examine India's ecological wisdom and environmental practices, including their applications in agriculture, architecture, and sustainable land management.
- Recognize India's role in shaping global technology and knowledge dissemination through its historical connections and contributions to various fields.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | <ul style="list-style-type: none"> Fundamentals: An overview of Indian contributions to technology, Technological Innovations, Metallurgy, Textile Chemistry & Pyro Technology: Copper/Bronze/Zinc: Important Mines (Zawar, Khetri mines), Iron and Wootz Steel Technology, Textile and Dyeing- Indian Specialities (Kutchi Embroidery, Cotton Textile etc.), Ceramic Technology, Stone (Lapidary), Shell, Ivory, Faience & Glass Technology | 09 | 30% |
| 2 | <ul style="list-style-type: none"> Water Management & Transportation: Harappan and Traditional Water Management System of Gujarat, Historical Sites- Sringeverpur, South Indian Water Management System, Western Ghats, Cave- Kanheri, etc., Communities Involved in Water Management, Modes of Transportations and Reforms, Grand Trunk Road (Uttarapath & Dakshinapath), Development of Trading Techniques, Boat & Ship Building | 06 | 20% |
| 3 | <ul style="list-style-type: none"> Mathematics & Astronomy: Mathematics contained in the Sulbasutra, Weaving Mathematics into Beautiful Poetry- Bhaskaracarya, The Evolution of Sine Function in India, The Discovery of Calculus | 06 | 20% |

| | | | |
|---|--|-----------|------------|
| | by Kerala Astronomers, Vedanga Jyotish & Measuring Time & Calendar. | | |
| 4 | <ul style="list-style-type: none"> Ecology and Environment: Nakshatrara Gyaan and Agriculture, Vernacular Architecture, Forest Management and Urban Planning, Agroforestry, Tank, Lakes, and Stepwells India's Contribution to the World | 09 | 30% |

| Evaluation | | |
|-------------------|--|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--|--|-------------------------------|---------|
| 1 | R.M. Pujari, Pradeep Kolhe, N. R. Kuma | 'Pride of India: A Glimpse into India's Scientific Heritage' | Sanskrita Bharati Publication | 2006 |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------------------|----------------------------------|-----------|---------|
| 1 | Vijnana Bharati | 'Indian Contribution to science' | TMH | Latest |
| 2 | Kapil Kapoor, Michel | Knowledge | CBSE | Latest |

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| | Danino | traditions and practices of India | | |
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Swarnnim School of Computing & IT

BCA (Honours) Programme

Semester II

Course Title: Data Structure Using C

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | BCA230201 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 30% | 20% |

Course Outcomes(COs):

Here are concise course outcomes for the syllabus:

- Apply arrays for varied applications, understand data structure classifications and operations.
- Implement stacks and queues, perform infix-postfix conversion, and grasp recursion concepts.
- Master linked lists, including insertion, deletion, sorting, and node counting.
- Gain expertise in binary trees, traversals, and tree expression manipulation.
- Proficiently use sorting (bubble, insertion, quick) and searching (sequential, binary) techniques.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | <ul style="list-style-type: none"> Classification of Data Structure, Operations on Data Structure, Address Calculation, Application of arrays, Application of Arrays | 7 | 15% |
| 2 | <ul style="list-style-type: none"> Continuous Implementation (Stack): Array Representation, Operations on Stacks: Push & Pop, Applications of stack, Conversion of Infix to Prefix and Postfix Expressions, Evaluation of postfix expression using stack Recursion: Recursive Definition and Processes Recursion Vs. Iteration Continuous Implementation (Queue): Array representation and implementation of Queues. | 15 | 35% |
| 3 | <ul style="list-style-type: none"> Non-Continuous Implementation: Link Lists: Linear List concept, Linked List Terminology, Representation of Linked List in Memory, Types of Linked List, Single Linked List, Doubly Linked List, Operations on Link List: Create List Insert node (empty list, beginning, middle, end), Delete node (first, general case), Print list, Count Nodes, Sort Lists. | 8 | 15% |
| 4 | <ul style="list-style-type: none"> Trees: Introduction to Tree & its | 15 | 35% |

| | | | |
|--|--|--|--|
| | Terminology, Binary trees, Types of Binary trees, Representation of Binary Tree, Traversals (Inorder, Preorder, Postorder), Tree Expression. <ul style="list-style-type: none"> • Sorting & Searching Techniques: Bubble Sort, Insertion Sort, Quick Sort, Sequential Search, Binary Search. | | |
|--|--|--|--|

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|-------------------------|------------------|----------------|
| 1 | S. Lipschutz | Data structures | Mc’Graw, Hill | 2nd Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------|----------------------------|----------------------------|----------------|
| 1 | Aaron M. Tenenbaum | Data Structures Using C | Oxford University Press | 5th Edition |

| | | | | |
|---|---|------------------------------------|--|-------------------------|
| 2 | Y. Langsam, M. Augenstein And A. M. Tenenbaum | Data Structures Using C And C++ | Prentice - Hall Of India Pvt. Ltd. | 2 nd Edition |
|---|---|------------------------------------|--|-------------------------|

❖ List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- ACM Transactions on Computing Systems
- Journal of Computer Science and Technology
- Journal of the ACMIEEE Software
- CODE Magazine
- Journal of Computing Sciences in Colleges
- Computer Science Education
- Design & Markup News

WEB RESOURCES:

- Khan Academy (www.khanacademy.org)
- Computer Hope (www.computerhope.com)
- TechTerms (www.techterms.com)
- HowStuffWorks (www.howstuffworks.com)
- W3Schools (www.w3schools.com)
- Computer Science for Fun (www.cs4fn.org)
- Neso Academy (www.nesoacademy.org)
- Studytonight (www.studytonight.com)
- Computer Science Unplugged (csunplugged.org)
- Exploring Computer Science (www.exploringcs.org)



Swarnnim School of Computing & IT
BCA (Honours) Programme
Semester II

Course Title: Object Oriented Concepts using C++

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | BCA230202 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 30% | 20% |

Course Outcomes(COs)

Here are concise course outcomes for the syllabus:

- Understand the fundamental concepts of Object-Oriented Programming (OOP) and grasp C++ basics, including operators, data types, and identifiers.

- Master control flow structures like if-else, loops, and learn about classes, objects, encapsulation, constructors, and memory allocation.
- Acquire proficiency in working with arrays, strings, functions (overloading, inline), and operator overloading.
- Develop a solid understanding of pointers, inheritance, class hierarchy, and abstract classes.
- Gain knowledge of file handling, exception handling, namespaces, and stream operations.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|---|-----------------------|------------------|
| 1 | <ul style="list-style-type: none">• Introduction- Introducing Object – Oriented Approach, Relating to other paradigms {Functional, Data decomposition}.• Basic terms and ideas- Abstraction, Encapsulation, Inheritance, Polymorphism, Review of C, Difference between C and C++ - cin, cout, new, delete, operators. | 8 | 15% |
| 2 | <ul style="list-style-type: none">• Classes and Objects: Encapsulation, information hiding, abstract data types, Object & classes, attributes, methods, C++ class declaration, State identity and behaviour of an object, Constructors and destructors, instantiation of objects, Default parameter value, object types, C++ garbage collection, dynamic memory allocation, Metaclass / abstract classes. | 15 | 35% |

| | | | |
|---|--|-----------|------------|
| 3 | <ul style="list-style-type: none"> Inheritance and Polymorphism- Inheritance, Class hierarchy, derivation – public, private & protected, Aggregation, composition vs classification hierarchies, Polymorphism, Categorization of polymorphism techniques, Method polymorphism, Polymorphism by parameter, Operator overloading, Parametric Polymorphism Generic function- Template function, function name overloading, Overriding inheritance methods, Run time polymorphism, Multiple Inheritance. | 15 | 35% |
| 4 | <ul style="list-style-type: none"> Files and Exception Handling- Streams and files, Namespaces, Exception handling, Generic Classes | 7 | 15% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---|------------------|-----------|-------------------------|
| 1 | A. R. Venugopal, Rajkumar, T. Ravishanker | Mastering C++ | TMH | 3 rd Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---------------------------|---------------------------------------|-----------------------|-------------------------|
| 1 | S. B. Lippman & J. Lajoie | C++ Primer | Addison Wesley | 3rd Edition |
| 2 | R. Lafore | Object Oriented Programming using C++ | Galgotia Publications | 6th Edition |
| 3 | D. Parasons | Object Oriented Programming using C++ | BPB Publication | 2 nd Edition |

❖ List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- A Journal of Object Technology
- Journal of Computer Science and Technology
- ACM Transactions on Programming Languages and Systems
- C++ Users Journal (Now defunct, but archives might be useful)
- C/C++ Users Journal (Also defunct, but archives might contain valuable

content)

- Journal of Computing Sciences in Colleges
- Computer Science Education

WEB RESOURCES:

- Khan Academy (www.khanacademy.org)
- Computer Hope (www.computerhope.com)
- TechTerms (www.techterms.com)
- HowStuffWorks (www.howstuffworks.com)
- W3Schools (www.w3schools.com)
- Computer Science for Fun (www.cs4fn.org)
- Neso Academy (www.nesoacademy.org)
- Studytonight (www.studytonight.com)
- Computer Science Unplugged (csunplugged.org)
- Exploring Computer Science (www.exploringcs.org)



Swarnnim School of Computing & IT
BCA (Honours) Programme
Semester II

Course Title: Core Java

| Categor y of Course | Course Code | Credit | Contact Hours | Internal | External |
|------------------------------------|------------------------|---------------|--------------------------|-----------------|-----------------|
|------------------------------------|------------------------|---------------|--------------------------|-----------------|-----------------|

| Minor | BCA230203 | 4 | 60 | Theory | Continuous Assessment | Practical | Theory | Practical |
|-------|-----------|---|----|--------|-----------------------|-----------|--------|-----------|
| | | | | 20% | 30% | - | 30% | 20% |

Course Outcomes(COs):

- Proficiently apply Java programming concepts including data types, control structures, arrays, strings, inheritance, packages, and exception handling.
- Proficiently apply Java programming concepts of classes and multithreading
- Design interactive Java applets using AWT controls, layout managers, and event listeners while mastering string handling.
- Gain expertise in networking with datagram and TCP/IP server sockets, and learn to establish JDBC connections and utilize connection pooling.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|---|-----------------------|------------------|
| 1 | <ul style="list-style-type: none"> Java Programming: Data types, control structures, arrays, strings, and vector, operators | 10 | 22% |
| 2 | <ul style="list-style-type: none"> classes (inheritance, package, exception handling), abstraction, multithreaded programming | 10 | 22% |
| 3 | <ul style="list-style-type: none"> Java applets, AWT controls (Button, Labels, Combo box, list and other Listeners, menu bar) layout manager, string handling (only main functions) | 15 | 34% |
| 4 | <ul style="list-style-type: none"> Networking (datagram socket and TCP/IP based server socket) event handling, JDBC: Introduction, Drivers, Establishing Connection, Connection Pooling. | 10 | 22% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---------------------------------------|-------------------------------|------------------|-------------------------|
| 1 | Patrick Naughton and Herbertz Schildt | Java-2 The Complete Reference | TMH | 3 rd Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|------------------|--------------------------|-----------------------|----------------------------|
| 1 | Herbertz Schildt | Java: A Beginner's Guide | McGraw-Hill Education | 9th edition (4 April 2022) |
| 2 | Joshua Bloch | Effective Java | | 6th Edition |

❖ List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Journal of Computer Science and Technology
- ACM Transactions on Computing Education
- Java Magazine
- Journal of Computing Sciences in Colleges
- Computer Science Education

- Journal of Computing Sciences in Colleges

WEB RESOURCES:

- Khan Academy (www.khanacademy.org)
- Computer Hope (www.computerhope.com)
- TechTerms (www.techterms.com)
- HowStuffWorks (www.howstuffworks.com)
- W3Schools (www.w3schools.com)
- Computer Science for Fun (www.cs4fn.org)
- Neso Academy (www.nesoacademy.org)
- Studytonight (www.studytonight.com)
- Computer Science Unplugged (csunplugged.org)
- Exploring Computer Science (www.exploringcs.org)



Swarnnim School of Computing & IT

BCA (Honours) Programme

Semester II

Course Title: Foundation in Statistical Methods

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MDC | BCA230204 | 3+1 | 60 | 20% | 30% | - | 50% | 2 |

Course Outcomes(COs):

- Develop proficiency in organizing data through tabulation, frequency distribution, and graphical representation.
- Understand and compute measures like mean, median, mode, range, quartile deviation, mean deviation, and standard deviation for assessing data patterns.

- The concept of skewness and apply Karl Pearson's Coefficients of Skewness in practical scenarios.
- Gain insight into correlation types and methods, including Karl Pearson's correlation coefficient, to assess relationships between variables in datasets.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|---|-----------------------|------------------|
| 1 | <ul style="list-style-type: none">• Classification of data, Tabulation of data, Preparation of frequency distribution, Presentation of data through histogram, frequency polygon, frequency curve | 12 | 26% |
| 2 | <ul style="list-style-type: none">• Measures of Central Tendency: Computation of Arithmetic mean, median and mode for ungrouped data and grouped data. | 10 | 22% |
| 3 | <ul style="list-style-type: none">• Measures of dispersion: Computation of Range, Quartile deviation, mean deviation and Standard deviation• Concept of Skewness, Karl Pearson's Coefficients of Skewness(Numerical Applications Only) | 15 | 34% |
| 4 | <ul style="list-style-type: none">• Meaning of Correlation, types of correlation, correlation coefficient, Karl Pearson correlation coefficient. (Numerical Applications Only) | 08 | 18% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|-------------------------|---------------------|-------------------------------|
| 1 | Dr. S.P. Gupta | “Statistical Methods“ | Sultan Chand & Sons | 46th edition (1 January 2021) |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------------|--|------------------|----------------|
| 1 | S.C. Gupta & V.K. Kapoor | Fundamental of Mathematical Statistics | Sultan Chand | 11th edition |
| 2 | Mode .E.B. | ”Elements of Statistics“ | PrenticeHall | 6th Edition |

❖ List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Journal of Statistical Education
- The American Statistician
- Journal of Applied Statistics
- Journal of Statistics Education
- International Journal for Innovation Education and Research
- Mathematics Teacher: Learning and Teaching PK-12

WEB RESOURCES:

- www.statistics.com
- stats.stackexchange.com
- TechTerms (www.techterms.com)
- HowStuffWorks (www.howstuffworks.com)
- W3Schools (www.w3schools.com)
- Computer Science for Fun (www.cs4fn.org)
- Neso Academy (www.nesoacademy.org)
- Studytonight (www.studytonight.com)



Swarnnim School of Computing & IT

BCA (Honours) Programme

Semester II

Core Course Title: Identifying Entrepreneurial Opportunities

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| SEC | SEC230202 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

- Exploration of opportunities from the market
- Check technical, market, financial and other types of Feasibility of a business idea.
- Develop business model to describe the rationale of how an organization creates, delivers, and captures value
- Identification of various Business Opportunities from the market

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | Opportunities: Their nature, discovery, and Creation: <ul style="list-style-type: none"> • Opportunities: Their basic nature, opportunities: Discovered, created, or both, Opportunities: The role of information, experience and social network- The role of information in opportunity recognition, The role of experience and social networks in opportunity recognition, • How entrepreneurs can become skilled at recognizing opportunities...Entrepreneurship, Entrepreneurship and Startup | 14 | 50% |
| 2 | Business Idea Creation & IPR <ul style="list-style-type: none"> • Meaning, sources of business ideas, techniques for idea generation like brain storming, • Focus group, six thinking hats as idea generation, • Characteristics of brilliant business ideas Introduction: | 8 | 25% |

| | | | |
|----------|--|----------|------------|
| | <ul style="list-style-type: none"> • Knowledge creation, Innovation and Intellectual Property Rights, Concept of Intellectual Property, • Types of IPR – Patents – Copyright – Trademark – Industrial Designs – Trade Secrets – Geographical | | |
| 3 | Business Model: <ul style="list-style-type: none"> • Introduction to business model, Types of business model, • Developing and testing a business model, Business modelling process, Business model canvas, • Business Models and value proposition, Business Model Failure: Reasons and Remedies Reinventing business model | 8 | 25% |

Evaluation

| | | |
|---|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------------------|--|-----------------------|----------------|
| 1 | S.S. Khanka, Gupta. C.B. | Entrepreneurship & Small Business Management | Sultan Chand and Sons | Latest Edition |
| 2 | Sami Uddin | Entrepreneurship Development in | Mittal Publications | Latest Edition |

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Reference Books:

| Sr. No. | Author/s | Name of theBook | Publisher | Edition |
|---------|---|---|-----------------------|---------|
| 1 | Dr. Bhatia.R.C | Entrepreneurship: Business and Management | Sultan Chand and Sons | Latest |
| 2 | Bruce R. Barringer | Entrepreneurship: Successfully Launching New Ventures | Pearson Education | Latest |
| 3 | <u>Janakiram. B.</u> , <u>Rizwana. M.</u> | Entrepreneurship development | Excel Books | Latest |
| 4 | Khanna. S.S. | Entrepreneurial Development | Excel Books | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Journal of Entrepreneurship
- Journal of Small Business Management
- Journal of Entrepreneurship & Management
- AMC Indian Journal of Entrepreneurship



Swarnnim School of Computing & IT

BCA (Honours) Programme

Semester II

Course Title: Logical and Critical Thinking

| Category Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|-----------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| ACE | AEC230202 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

- Students are able to understand the basic concept of Logical and Critical Thinking and are able to solve problems
- Student analytical ability increased.
- Student can be placed in service based company, government sector, PSU

and it will also help in higher study.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Simplification and Approximation (BODMAS Rule, Approximation, Short trick, Digit Sum, Square Roots and Cube roots based Question) Coding Decoding (Coding means Encryption and Decoding means Decryption among letters, alphabets and Special Symbols) | 8 | 26% |
| 2 | Crypt arithmetic (Crypt arithmetic is a type of mathematical game consisting of Mathematical Equation) Analogy & Odd one out (An Analogy is a comparison between two objects or system of objects in which they are thought to be similar.) | 4 | 14% |

| | | | |
|----------|--|-----------|------------|
| 3 | Direction & Distance (Description of Directions and Determination of Distance wrt. Directions, Sunrise and Sunset with Shadow Concept.) Blood Relations (In such questions, one person describes his /her relation with another person. Pointer- narrator relations Symbols relation as well as group relation) | 6 | 20% |
| 4 | Number System Classifications of Number System [Rational/Irrational No's, Integers, fraction, Even-odd, Prime - Composite no's] Perfect number & Square , Face value-Place value Frequency of Digit Occurrence Concept of Divisibility Rule - finding the division of a number Cyclicity rule - Unit digit Concept, Trailing Zeroes Binomial Theorem - for remainder Factorizations - Prime - Composite factors, Total factors , Even-Odd factors | 12 | 40% |

| Evaluation | | |
|-------------------|---|--------------------------|
| 1 | Assignments/ Quizzes/ClassParticipation / Role Play/Projectetc. | 30%(Internal Assessment) |
| 2 | InternalExamination | 20%(InternalAssessment) |
| 3 | ExternalExamination(UniversityExam) | 50%(External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|--|------------------|----------------|
| 1 | R.S.AGRWAL | Reasoning for Competitive Examinations | S CHAND | 2022 |
| 2 | R.S. AGRWAL | Quantitative Aptitude for Competitive Examinations | S CHAND | 2022 |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|--|-----------------------|-----------------------|
| 1 | ARUN SHARMA | How To Prepare For Quantitative Aptitude | McGraw Hill Education | 10 TH 2022 |
| 2 | R. PRAVEEN | Quantitative Aptitude and Reasoning | PHI Learning Pvt Ltd | 3 RD 2016 |

Relevant Websites

- ARIHANT REASONING E-BOOK PDF
<https://parikshatop.com/arihant-reasoning-book-pdf-download-free/>
- E BOOK FOR REASONING – ARUN SHARMA
<https://z-lib.is/book/how-to-prepare-for-logical-reasoning-for-the-cat>
- E BOOK FOR APTITUDE– ARUN SHARMA
<https://z-lib.is/book/how-to-prepare-for-quantitative-aptitude-for-the-cat>
- LINK FOR MULTIPLE QUANT E BOOK

<https://www.google.com/search?q=aptitude+book+for+placement+pdf&oq=APTITUDE+BOOK&aqs=chrome.3.0i512l10.12648j0j15&sourceid=chrome&ie=UTF-8>



Swarnnim School of Computing & IT

BCA (Honours) Programme

Semester II

Course Title: Environmental Studies

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| VAC | VAC230201 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

- Enabling students to understand and realize the multi- disciplinary nature of the environment, its components, and inter-relationship between man and environment.
- Understanding the relevance and importance of natural resources in the sustenance of life on earth and living standard. the importance of ecosystem, biodiversity, and nature.
- Correlating the human population growth and its trend to the environmental degradation and developing the awareness about his/her role towards environmental protection. Identifying different types of environmental pollution and control measures.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|---|-----------------------|------------------|
| 1 | Introduction to Environment and Environmental Studies, Natural Resources: <ul style="list-style-type: none">• Definition and Components of Environment, Relationship between the different components of Environment, Man and Environment relationship, Impact of technology on Environment, Environmental Degradation, its scope.• Water resources: Sources of water - Surface and Ground water sources, Indian and Global scenario. | 9 | 30% |

| | | | |
|----------|--|-----------|------------|
| | <ul style="list-style-type: none"> Land resources: Land pollution, land use, land degradation & its causes. Forest resources: Definition and Types of Forests importance and benefits of forest, Deforestation causes and effects. | | |
| 2 | <p>Ecology and Ecosystems:</p> <ul style="list-style-type: none"> Ecology: Introduction, Objectives and Classification, Concept of an ecosystem- structure of ecosystem or Components of ecosystem- Producers, Consumers, Decomposers Ecosystems: Forest Ecosystem, Grassland Ecosystem, Desert Ecosystem, Aquatic Ecosystem, Estuarine Ecosystem Human Population and Environment: Population Growth, World and Indian scenario, Population and Environmental Degradation, Malthusian theory, Optimum theory, Urbanization: Urban population growth and Environmental problems | 12 | 40% |
| 3 | <p>Environmental pollutions:</p> <ul style="list-style-type: none"> Water Pollution: Introduction – Water Quality standards, sources of water pollution Classification of water pollutants. Eutrophication Air Pollution: Composition of air, Structure of | 9 | 30% |

| | | | |
|--|---|--|--|
| | atmosphere, Ambient Air Quality Standards, Classification of air pollutants, <ul style="list-style-type: none"> • Land Pollution: Land uses, Land degradation: causes, effects and control, soil erosion • Noise Pollution: Introduction, Sound and Noise, Causes and Effects • Global Environmental Issues: Climate Change, Global Warming and Green House Effect, Acid Rain, Depletion of Ozone layer | | |
|--|---|--|--|

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------|---------------------------------|--------------------------|----------------|
| 1 | Snehal Popli & B.R.Shah | Basics of Environmental studies | Mahajan Publishing House | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------------------------|---------------------------------|--|----------------|
| 1 | Prof Dr N S Varandani | Basics of Environmental Studies | LAP -Lambert Academic Publishing Germany | Latest |
| 2 | R. Rajagopalan | Environmental Studies | Oxford University Press | Latest |
| 3 | U K Khare | Basics of Environmental Studies | Tata McGraw Hill | Latest |
| 4 | Daniel B Botkin & Edward A Keller | Environmental Sciences | John Wiley & Sons. | Latest |

❖ List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Environmental Standard
- Indian Journal of Environmental Research and Studies
- Journal of Environmental Science and Technology.

B.SC.- IT SYLLABUS

Swarnnim School of Computing & IT
B. Sc.- IT (Honours) Programme
Semester I

Course Title: Fundamentals of Computers

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | BSCIT230101 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 30% | 20% |

Course Outcomes(COs)

- Understand the basic concepts of computer hardware and software.
- Demonstrate problem solving skills.
- Understand the structure of operating system, its applications and commands.
- To be familiar with network tools, concepts of protocols and network interfaces.
- Understands the concept of Computer's Input/output devices.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | <ul style="list-style-type: none"> • Computer Fundamentals: Block Structure of a Computer, Characteristics of Computers, Generation of Computers and Classification of Computers. • Programming Languages: Classification, Machine Code, Assembly Language, Higher Level Language and Fourth Generation Languages. • Number System: Bit, Byte, Binary, Decimal, Hexadecimal and Octal Systems, Conversion from One System to the Other; Binary Arithmetic Addition, • Subtraction and Multiplication. | 15 | 30% |
| 2 | <ul style="list-style-type: none"> • Information Concepts & Processing System: Evolution of Information Processing, Data, Information, Knowledge & Wisdom. • Elements of a Computer Processing System: Hardware - Input-Output Devices, VDU, CPU Storage Devices and Media. • Software Concepts: Type of Software, Translator, Compiler, Interpreter, Assembler, Loader. • Application Software: Office Automation. | 15 | 35% |
| 3 | <ul style="list-style-type: none"> • Operating System: Concepts as Resource Manager, Batch Processing, Multiprogramming, Multiprocessing, Time Sharing and Real Time System. • DOS: Command Interpreter, Booting Internal & External Commands, Batch Files, exe, com, System Files, bin, txt, bmp Files. | 7 | 15% |
| 4 | <ul style="list-style-type: none"> • Computer Network and Communication: Network Types, Network Topologies; Data Communication – Mode, Channel, and Media; OSI Reference Model, TCP/IP, Data Communication Equipment/Devices. | 8 | 20% |

| | | | |
|--|---|--|--|
| | <ul style="list-style-type: none"> • Internet and its Applications: E-Mail, TELNET, FTP, World Wide Web, Internet and Applications. | | |
|--|---|--|--|

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|------------|-----------------------|-----------------|-------------------|
| 1 | P.K. Sinha | Computer fundamentals | BPB Publication | 8th edition, 2022 |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---------------------------|---|-------------------|---------|
| 1 | Anita Goel | Computer Fundamentals | Pearson Education | Latest |
| 2 | Peter Norton | Inside PC | TMH | Latest |
| 3 | Alexis Leon, Methews Leon | Fundamentals of Information Technology" | Vikas Publishing | Latest |

❖ List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- "Computer" - This is the flagship magazine of the IEEE Computer Society, covering a wide range of topics related to computer science and technology. It features articles, research papers, and reviews on computer fundamentals.
- "Communications of the ACM" - This monthly publication by the Association for Computing Machinery (ACM) covers various aspects of computing, including computer fundamentals. It includes articles, research papers, and industry insights.
- "ACM Computing Surveys" - This journal focuses on surveys and tutorials that provide an overview of the fundamental concepts and developments in the field of computer science. It covers a broad range of topics and serves as a valuable resource for

understanding computer fundamentals.

- "Computer Science Review" - This journal publishes review articles and surveys on various topics in computer science, including computer fundamentals. It offers in-depth coverage of foundational concepts and emerging trends.
- "IEEE Computer Architecture Letters" - This journal focuses specifically on computer architecture, which is a fundamental aspect of computer systems. It features short papers and letters that present novel ideas, designs, and analysis in computer architecture.
- "International Journal of Computer Science and Information Technologies" - This journal covers various aspects of computer science and information technology, including computer fundamentals. It features research papers, articles, and case studies.
- "IEEE Transactions on Computers" - This journal publishes research papers, articles, and surveys on computer-related topics, including computer fundamentals. It covers a wide range of areas, including computer architecture, algorithms, and software systems.
- "Computerworld" - This popular magazine focuses on technology news, trends, and insights. While it covers a wide range of topics, it often includes articles and features related to computer fundamentals and emerging technologies.

WEB RESOURCES:

6. GeeksforGeeks (www.geeksforgeeks.org) - GeeksforGeeks is a popular platform that offers a wide range of articles, tutorials, and coding practice exercises for C programming. It covers various topics, ranging from basic concepts to advanced algorithms and data structures.
7. Tutorialspoint (www.tutorialspoint.com) - Tutorialspoint provides a comprehensive C programming tutorial that covers topics like basic syntax, control structures, functions, arrays, pointers, and file handling. It also offers an online compiler to practice coding.
8. Programiz (www.programiz.com) - Programiz provides interactive C programming tutorials, examples, and exercises. It covers the fundamentals of C programming and also delves into advanced topics like data structures and algorithms.
9. Codecademy (www.codecademy.com) - Codecademy offers an interactive online learning platform that includes a C programming course. It provides hands-on coding exercises and projects to help you practice and reinforce your understanding of C.
10. Cprogramming.com (www.cprogramming.com) - Cprogramming.com offers tutorials, examples, and a forum community for C programming enthusiasts. It covers topics such as basic syntax, data types, control structures, and pointers.
11. Stack Overflow (stackoverflow.com) - Stack Overflow is a popular question-and-answer platform where programmers can ask and answer questions related to C programming. It can be a valuable resource for troubleshooting and gaining insights from experienced programmers.
12. The GNU C Library Reference Manual (www.gnu.org/software/libc/manual) - The GNU C Library (glibc) reference manual is an authoritative resource that provides

detailed documentation on the C standard library functions. It can be helpful for understanding the usage and behavior of various library functions.

13. The C Programming Language (C89/C90) Standard - The official ANSI C standard document (also known as C89 or C90) specifies the syntax and semantics of the C programming language. It is a valuable reference for understanding the language specifications.



Swarnnim School of Computing & IT

B. Sc.- IT (Honours) Programme

Semester I

Course Title: PROGRAMMING IN C

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-----------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | BSCIT23010 2 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 30% | 20% |

Course Outcomes(COs)

- Analyze a given problem and develop an algorithm to solve the problem.
- Design, develop and test programs written in 'C'.
- Write, compile and debug programs in C language.
- Use different data types in a computer program.
- Design programs involving decision structures, loops and functions.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | <ul style="list-style-type: none"> • Introduction: History, Facilities, Concepts, Uses; Basic Program Structure, Header Files, Comments; A Simple C program, Identifiers, Basic Data Types and Sizes, Constants, Variables, Arithmetic, Relational and Logical Operators, Increment and Decrement Operators, Conditional Operator, Bit-wise Operators, Assignment Operators, Expressions, Type Conversions, Conditional Expressions, Precedence and Order of Evaluation. • Input-Output Functions: Data Input and Output getchar(), putchar(), scanf(), printf(), functions. | 15 | 30% |
| 2 | <ul style="list-style-type: none"> • Control Flow: If-Else, While, Do-while, Goto, For Statements, Nested Control Structures, Switch, Break, Continue Statements, Comma Operator. | 7 | 15% |
| 3 | <ul style="list-style-type: none"> • Arrays & Functions: Arrays Defining, Processing Array, Introduction to Multidimensional Arrays; gets(), puts() functions, Functions Types, Parameters, Prototypes, Passing Arrays to Functions, Recursion, Passing Arguments to a Function by Value; • Storage Classes: Automatic, External, Static, Register Variables in Single File Environment. | 8 | 20% |
| 4 | <ul style="list-style-type: none"> • Pointer: Usage of Pointers, Addresses and Types, Pointer and Address Arithmetic, Pointer Operations and Declarations, Using Pointers as Function Arguments (Call By Reference, Call By Value), Pointer Array Duality Strings, Arrays of Pointers, Pointers to Functions, Concept of Dynamic Allocation of Memory, Pre-Processor Directives. | 15 | 35% |

| | | | |
|--|---|--|--|
| | <ul style="list-style-type: none"> • Other Data Types: Structures, Member Accessing, Pointers to Structures, Structures and Functions, Arrays of Structures, Unions, Enumerations and Bit Fields, Typedef. • File Handling: Introduction of File Handling, Modes of File Handling Uses of fopen(), fclose(), putc(), getc(), putw(), getw(), fscanf(), fprintf(), ferror() Functions. | | |
|--|---|--|--|

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------------|-------------------------|------------------|--------------------|
| 1 | Yashavant P. Kanetkar | Let Us C | BPB Publication | 19th edition, 2022 |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------------|--|------------------|----------------|
| 1 | Peter Vander Linden, Schaum's | Outline of theory and problems of programming with C | TMH | Latest |
| 2 | Peter Vander Linden | Expert C programming | PHI | Latest |
| 3 | Balagurusamy E. | Computing Fundamentals and C Programming | TMH | Latest |

❖ List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- "C/C++ Users Journal" - This magazine focuses on C and C++ programming languages, offering tutorials, articles, and code examples.
- "The C/C++ Users Group Newsletter" - This publication provides news, articles, and resources for C and C++ programmers.
- "Journal of C Language Translation" - This journal focuses on the theory and practice of C language translation, including compiler technology and optimization.
- "ACM Transactions on Programming Languages and Systems" - A prestigious journal that covers a broad range of programming languages, including C, and publishes research papers and articles.
- "IEEE Transactions on Software Engineering" - This journal covers various aspects of software engineering, including programming languages like C, and features research papers and articles.
- "Software: Practice and Experience" - This journal publishes research papers, case studies, and reviews related to software development and programming languages, including C.
- "Embedded Systems Design" - This magazine covers topics related to embedded systems development, including C programming for microcontrollers and other embedded platforms.
- "C Programming Expert" - An online magazine dedicated to C programming, offering tutorials, tips, and tricks for beginners and advanced programmers alike.

WEB RESOURCES:

- Khan Academy (www.khanacademy.org)
- Computer Hope (www.computerhope.com)
- TechTerms (www.techterms.com)
- HowStuffWorks (www.howstuffworks.com)
- W3Schools (www.w3schools.com)
- Computer Science for Fun (www.cs4fn.org)
- Neso Academy (www.nesoacademy.org)
- Studytonight (www.studytonight.com)
- Computer Science Unplugged (csunplugged.org)
- Exploring Computer Science (www.exploringcs.org)



Swarnnim School of Computing & IT

B. Sc.- IT (Honours) Programme

Semester I

Course Title: Web Development Using HTML, CSS & XML

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-----------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Minor | BSCIT2301 03 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 30% | 20% |

Course Outcomes(COs)

Certainly, here are concise one-liner course outcomes for the mentioned syllabus:

- Understand web concepts, protocols, and client-server computing principles.
- Create structured web content using HTML, CSS, and apply formatting and styling techniques.
- Apply CSS for designing layouts, navigation, forms, and enhance user experience.
- Implement dynamic elements using JavaScript, VBScript, and enhance interactivity.
- Gain an introduction to XML, its manipulation, and basic server-side technologies for web applications.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | <ul style="list-style-type: none"> World Wide Web, Web page, Home page, Web site, Static, Dynamic and Active web page, Overview of Protocols, Simple Mail Transfer Protocol, Gopher, Telnet, Emails, TFTP, Hyper Text Transfer Protocol, Client server computing concepts. Web Client and Web Server Web Browser, Browsers: Internet Explorer, Mozilla Firefox Client, Side Scripting Languages, VB Script and Java Script, Active X control and Plugins, Web Server Architecture, Image maps, CGI, API web database connectivity, DBC, ODBC | 7 | 15% |
| 2 | <ul style="list-style-type: none"> Dynamic HTML, CSSP (Cascading Style Sheet Positioning) and JSSS (JavaScript assisted Style Sheet), Layers of Netscape, The ID Attribute. Introduction to HTML: Element, Attribute, Headings, Paragraphs, Styles, Formatting, Comments, CSS, Links, Images, Tables, Lists, Blocks, Classes, ID, frames, File Paths, Head, Entities, Symbols, Color and Background of Web Pages, Hypertext, Hyperlink and Hypermedia, Links, Anchors and URLs, Links to External Documents, Different Section of a Page and Graphics, Creating Table, Frame, Form and Style Sheet. | 15 | 35% |
| 3 | <ul style="list-style-type: none"> CSS: Syntax, Colors, Backgrounds, Borders, Margins, Padding, Height/ Width, Box Model, Outline, Text, Fonts, Icons, Links, Lists, Position, Overflow, Float, Inline, Block, Align, Navigation Bar, Dropdowns, Image Gallery, Image Sprites, Attr Selectors, Forms, Counters, Website Layout, Units, Specificity. | 15 | 35% |
| 4 | XML: Elements, Attributes, Namespaces, Display, HTTP request, Parser, DOM, XPath, XSLT, XQuery, XLink, Validator, DTD, Schema, Server | 8 | 15% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|--------------------------|------------------|-------------------------------|
| 1 | Shelley Powers | Dynamic Web Publishing 2 | Sams.net | 2 nd Edition, 1998 |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------|------------------------------------|---------------------|----------------|
| 1 | Thomas A. Powell | Html & CSS: The Complete Reference | Osborne/McGraw-Hill | 5th Edition |
| 2 | Heather Williamson | XML: The Complete Reference | Osborne/McGraw-Hill | 6th Edition |

❖ List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- World Wide Web Journal
- Web Development Quarterly
- HTML & CSS Research Review
- XML Technologies Review
- Interactive Web Design Journal
- Web Designer Magazine
- HTML/CSS Today
- XML Insight Magazine
- Tech Web Designers' Digest
- Coding & Markup Monthly
- WebTech Times
- Digital Web Daily
- Code Chronicle
- Tech Web Tribune
- Design & Markup News

WEB RESOURCES:

- Khan Academy (www.khanacademy.org)

- Computer Hope (www.computerhope.com)
- TechTerms (www.techterms.com)
- HowStuffWorks (www.howstuffworks.com)
- W3Schools (www.w3schools.com)
- Computer Science for Fun (www.cs4fn.org)
- Neso Academy (www.nesoacademy.org)
- Studytonight (www.studytonight.com)
- Computer Science Unplugged (csunplugged.org)
- Exploring Computer Science (www.exploringcs.org)



Swarnnim School of Computing & IT

B. Sc.- IT (Honours) Programme

Semester I

Course Title: Mathematical Foundation

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-----------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | BSCIT23010 2 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 50% | - |

Course Out comes (COs):

After completing this course satisfactorily, a student will be able to:

- Understand sets and perform operations and algebra on sets.
- Identify functions and determine their properties.
- Develop basic knowledge of matrices and to solve equations using Cramer's rule.
- Identify functions and determine their properties.
- To develop the knowledge about derivatives and know various applications of differentiation.

Syllabus:

| Module | Contents | No. of Sessions | Weight age |
|--------|----------|-----------------|------------|
|--------|----------|-----------------|------------|

| | | | |
|---|--|----|-----|
| 1 | Set theory: <ul style="list-style-type: none"> • Basic definition of Set Theory • Methods of representation of Set (Property method, Listing method) • Set operations (Union, Intersection, Complement of a set, Difference of sets, Symmetric difference, Cartesian product of sets) • Properties of set operations (Commutative, Associative, Distributive, De-Morgan's laws) • Power set and Cardinality of sets • Venn diagram • Applications | 12 | 20% |
| 2 | Relations and Functions: <ul style="list-style-type: none"> • Relations • Equivalence relation • Examples • Introduction of Functions • Domain, Co-domain and Range of a function • Algebra of functions • Types of functions (Linear, Quadratic, Polynomial, Implicit and Explicit functions and examples related with it) • Exponential and Logarithmic with their properties and related examples • Applications | 17 | 25% |
| 3 | Matrices and Determinants: <ul style="list-style-type: none"> • Definition of Matrix • Types of Matrix (Square, Row, Column, Zero, Diagonal, Scalar, Identity, Transpose, Symmetric, Skew-symmetric) • Arithmetic operations of Matrices (Addition, Scalar Multiplication, Matrix Multiplication) • Introduction to Determinants with Basic properties • Invertible matrix • Computation of Inverse using Definition • Simultaneous Solution of set of Linear equations using Cramer's Rule • Matrix inversion method • Rank of Matrix • Applications | 18 | 30% |

| | | | |
|----------|---|-----------|------------|
| 4 | Limit, Differentiation: <ul style="list-style-type: none"> • Limit <ul style="list-style-type: none"> ➤ Concept of Limit ➤ Some standard Limits (without proof) ➤ Continuity of a function and related examples • Differentiation: <ul style="list-style-type: none"> ➤ Definition of Derivative ➤ Rules for Differentiation (without proof) ➤ Differentiation of composite functions ➤ Higher order derivatives till order 2 • Applications | 13 | 25% |
|----------|---|-----------|------------|

| Basic Text Books: | | | | |
|--------------------------|----------------------------|-------------------------|----------------------------|----------------|
| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
| 1 | D.C. Sancheti & V.K Kapoor | Business Mathematics | D.C. Sancheti & V.K Kapoor | Latest |

| ReferenceBooks: | | | | |
|------------------------|-----------------|------------------------|--|---------------|
| Sr. No. | Author/s | Name of theBook | Publisher | Editio |
| 1 | B.S.Vatsa | Discrete Mathematics | New Age International Limited Publishers | Latest |
| 2 | S. C. Gupta | Matrices | S. Chand | Latest |
| 3 | R.S. Agarwal | Differential Calculus | S. Chand | Latest |



Swarnnim School of Computing & IT
B. Sc.- IT (Honours) Programme
Semester I

Course Title: Communication Skills

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| AEC | AEC230101 | 2 | 30 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | | 20% | 30% | - | 50% | |

Course Outcomes(COs)

- Inculcation of different skills will be added in a student's career.
- Students' employability skills will be enhanced.
- 3.Ability to speak in English will be improved through practice.
- Self Analysis tool will help the students to identify their strengths and weaknesses to work upon.
- Hesitation of speaking in public and in English will be reduced.

Syllabus:

| Module | Contents* | No of Sessions | Weightage |
|----------|---|----------------|------------|
| 1 | People Skills | 8 | 26% |
| | Essential Skills For Success Trainer will introduce himself/herself and briefly talk about soft skills. Talk about what soft skills are and their importance. | | |
| | SWOT Analysis Trainer will help students understand their strengths, weaknesses, opportunities and threats. | | |
| 2 | Fundamentals Of Communication Trainer will talk about the importance of communication, how communication works. | 4 | 14% |
| 3 | First Impressions | 6 | 20% |
| | Self Presentation Trainer will talk about how students can present themselves to others in various settings. Self-presentation plays a crucial role in creating initial impressions. A positive and confident self-presentation can set the tone for successful interactions and relationships. | | |
| | 4 A'S Of Dressing Trainer will discuss the 4 A's of appearance which | | |

| | | | |
|----------|---|-----------|------------|
| | are: Appropriate Dressing, Authentic Dressing, Approachable Dressing and Affordable Dressing. The Art of Attitude Trainer will emphasize on the importance of attitude management and provide a basic understanding of how attitudes impact personal and professional growth. They will focus on cultivating positive mindsets and the transformative power of attitude. | | |
| 4 | Professional Ethics Polite Protocol Trainer will explain the importance of greeting etiquettes and talk about formal greetings and informal greetings. Concept Of Happiness & Appreciation Trainer will explain the importance of happiness and how to identify your own happiness. Professional Interaction Trainer will introduce the concept of professionalism and what are professional ethics. An interactive activity will be conducted and there will be three scenarios presented in the activity, followed by a discussion about professional ethics. Types of Ethics Trainer will talk about the different ethics that a student has to keep in mind in their professional lives and understand its importance. | 12 | 40% |

*Note:

- Activities and content topics may vary according to the feasibility of technical, environmental and physical conditions.

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Reference Textbooks:

| Sr No: | Text Book | Author Name | Publisher | Edition |
|---------------|--------------------------|--------------------|--------------------------|----------------|
| 1. | Corporate Soft Skills | Sarvesh Gulati | Rupa Publications | 2006 |
| 2. | Successful Communication | Ken Lawson | Axis Publishing Limited | 2006 |
| 3. | Soft Skills For Dummies | John Wiley & Sons | John Wiley & Sons, Inc., | 2023 |

Reference Books:

| Sr. No | Author/s | Name of the Book | Publisher | Edition |
|---------------|--------------------------------------|--|---------------------------|----------------|
| 1 | Nitin Bhattnagar, Mamta Bhatnagar | Effective Communication And Soft Skills | Pearson Pub. | 2012 |
| 2 | ©AICTE Approved | Communications Skills WorkBook | NA | NA |
| 3 | Roshan Lal Raina | Professional Communication | Himalaya Publishing House | 2012 |
| 4 | Christie Marlowe | Presenting Yourself: Business Manners, Personality, Etiquettes | Mason Crest | 2014 |
| 5 | Jeff Keller | Attitude is everything | Harper Collins | 2017 |

List of Websites/ videos for reference:

- [Basics Of Communication Skills](#)
- [Essential Skills For Success](#)
- [Self Presentation](#)
- [Fundamentals Of Communication](#)
- [Appreciation And Gratitude](#)



Swarnnim School of Computing & IT

B. Sc.- IT (Honours) Programme

Semester I

Core Course Title: Foundation of Entrepreneurship

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| SEC | 230101 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

- To know various theories of entrepreneurship and trends.
- To identify various issues and challenges in starting a new venture.
- To understand innovation and its implications
- To create entrepreneurial mindset through understanding entrepreneurial personality

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | Introduction to Entrepreneurship: <ul style="list-style-type: none"> • Meaning, Role of Entrepreneur, • Entrepreneurial Process and different approaches, • Motivation for becoming an entrepreneur: Maslow's theory , Herj burg's theory, MC Gregor's theory, McClelland 's Need -achievement theory • Importance of Entrepreneurship, Functions of an Entrepreneur, Types of Entrepreneurs, Issues & Problems in Entrepreneurial Practices, entrepreneurial education and entrepreneurial mind, • Value creation- economic value and social Value, • Intrapreneurship (Corporate Entrepreneurship, Entrepreneurship and Startup | 14 | 50% |
| 2 | Characteristics or traits of successful entrepreneurs and myths related to entrepreneurship: <ul style="list-style-type: none"> • Characteristics or traits of successful entrepreneurs, need for studying success characteristics / traits of entrepreneurs, • How to develop successful characteristics/traits of entrepreneur • Myths related to entrepreneurship. | 8 | 25% |
| 3 | Cognitive foundations of entrepreneurship <ul style="list-style-type: none"> • Human cognition: its basic nature- and important limitations, • Creativity and innovation • ideas to reality | 8 | 25% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------------|--|-----------------------|----------------|
| 1 | S.S. Khanka, Gupta. C.B. | Entrepreneurship & Small Business Management | Sultan Chand and Sons | Latest Edition |
| 2 | Sami Uddin | Entrepreneurship Development in India | Mittal Publications | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------------------------|---|-----------------------|----------------|
| 1 | Dr. Bhatia.R.C | Entrepreneurship: Business and Management | Sultan Chand and Sons | Latest |
| 2 | Bruce R. Barringer | Entrepreneurship: Successfully Launching New Ventures | Pearson Education | Latest |
| 3 | <u>Janakiram. B., Rizwana. M.</u> | Entrepreneurship development | Excel Books | Latest |
| 4 | Khanna. S.S. | Entrepreneurial Development | Excel Books | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Journal of Entrepreneurship
- Journal of Small Business Management
- Journal of Entrepreneurship & Management
- AMC Indian Journal of Entrepreneurship



Swarnnim School of Computing & IT

B. Sc.- IT (Honours) Programme

Semester I

Course Title: Indian Science & Technology

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | IKS230101 | 2 | 30 | | | | | |
| | | | | 20% | 30% | - | 50% | |

Course Outcomes(COs)

- Gain an in-depth appreciation of India's technological heritage, including its contributions to metallurgy, textiles, ceramics, and more.
- Understand the historical evolution of water management systems and transportation methods in India, and their impact on society.
- Explore the intersection of mathematics and astronomy in India, from ancient mathematical texts to significant astronomical discoveries.
- Examine India's ecological wisdom and environmental practices, including their applications in agriculture, architecture, and sustainable land management.
- Recognize India's role in shaping global technology and knowledge dissemination through its historical connections and contributions to various fields.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | <ul style="list-style-type: none"> Fundamentals: An overview of Indian contributions to technology, Technological Innovations, Metallurgy, Textile Chemistry & Pyro Technology: Copper/Bronze/Zinc: Important Mines (Zawar, Khetri mines), Iron and Wootz Steel Technology, Textile and Dyeing- Indian Specialities (Kutchi Embroidery, Cotton Textile etc.), Ceramic Technology, Stone (Lapidary), Shell, Ivory, Faience & Glass Technology | 09 | 30% |
| 2 | <ul style="list-style-type: none"> Water Management & Transportation: Harappan and Traditional Water Management System of Gujarat, Historical Sites- Sringeverpur, South Indian Water Management System, Western Ghats, Cave-Kanheri, etc., Communities Involved in Water Management, Modes of Transportations and Reforms, Grand Trunk Road (Uttarapath & Dakshinapath), Development of Trading Techniques, Boat & Ship Building | 06 | 20% |
| 3 | <ul style="list-style-type: none"> Mathematics & Astronomy: Mathematics contained in the Sulbasutra, Weaving Mathematics into Beautiful Poetry- Bhaskaracarya, The Evolution of Sine Function in India, The Discovery of Calculus by Kerala Astronomers, Vedanga Jyotish & Measuring Time & Calendar. | 06 | 20% |
| 4 | <ul style="list-style-type: none"> Ecology and Environment: Nakshatrara Gyaan and Agriculture, Vernacular Architecture, Forest Management and Urban Planning, Agroforestry, Tank, Lakes, and Stepwells India's Contribution to the World | 09 | 30% |

| Evaluation | | |
|-------------------|--|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|--|-------------------------------|----------------|
| 1 | R.M. Pujari, Pradeep Kolhe, N. R. Kuma | ‘Pride of India: A Glimpse into India's Scientific Heritage’ | Sanskrita Bharati Publication | 2006 |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------------------|---|------------------|----------------|
| 1 | Vijnana Bharati | ‘Indian Contribution to science’ | TMH | Latest |
| 2 | Kapil Kapoor, Michel Danino | Knowledge traditions and practices of India | CBSE | Latest |



Swarnnim School of Computing & IT
B. Sc.- IT (Honours) Programme

Semester II

Course Title: Data Structure Using C

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-----------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| Core | BSCIT23020 1 | 4 | 60 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | | 20% | 30% | - | 30% | 20% |

Course Outcomes(COs)

Here are concise course outcomes for the syllabus:

- Apply arrays for varied applications, understand data structure classifications and operations.
- Implement stacks and queues, perform infix-postfix conversion, and grasp recursion concepts.
- Master linked lists, including insertion, deletion, sorting, and node counting.
- Gain expertise in binary trees, traversals, and tree expression manipulation.
- Proficiently use sorting (bubble, insertion, quick) and searching (sequential, binary) techniques.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|---|-----------------------|------------------|
| 1 | <ul style="list-style-type: none"> Classification of Data Structure, Operations on Data Structure, Address Calculation, Application of arrays, Application of Arrays | 7 | 15% |
| 2 | <ul style="list-style-type: none"> Continuous Implementation (Stack): Array Representation, Operations on Stacks: Push & Pop, Applications of stack, Conversion of Infix to Prefix and Postfix Expressions, Evaluation of postfix expression using stack Recursion: Recursive Definition and Processes Recursion Vs. Iteration Continuous. Implementation (Queue): Array representation and implementation of Queues. | 15 | 35% |
| 3 | <ul style="list-style-type: none"> Non-Continuous Implementation: Link Lists: Linear List concept, Linked List Terminology, Representation of Linked List in Memory, Types of Linked List, Single Linked List, Doubly Linked List, Operations on Link List: Create List Insert node (empty list, beginning, middle, end), Delete node (first, general case), Print list, Count Nodes, Sort Lists. | 8 | 15% |
| 4 | <ul style="list-style-type: none"> Trees: Introduction to Tree & its Terminology, Binary trees, Types of Binary trees, Representation of Binary Tree, Traversals (Inorder, Preorder, Postorder), Tree Expression. Sorting & Searching Techniques: Bubble Sort, Insertion Sort, Quick Sort, Sequential Search, Binary Search. | 15 | 35% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------|------------------|---------------|-------------|
| 1 | S. Lipschutz | Data structures | Mc’Graw, Hill | 2nd Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---|---------------------------------|------------------------------------|-------------------------|
| 1 | Aaron M. Tenenbaum | Data Structures Using C | Oxford University Press | 5th Edition |
| 2 | Y. Langsam, M. Augenstein And A. M. Tenenbaum | Data Structures Using C And C++ | Prentice - Hall Of India Pvt. Ltd. | 2 nd Edition |

❖ List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- ACM Transactions on Computing Systems
- Journal of Computer Science and Technology
- Journal of the ACMIEEE Software
- CODE Magazine
- Journal of Computing Sciences in Colleges
- Computer Science Education
- Design & Markup News
-

WEB RESOURCES:

- Khan Academy (www.khanacademy.org)
- Computer Hope (www.computerhope.com)
- TechTerms (www.techterms.com)
- HowStuffWorks (www.howstuffworks.com)
- W3Schools (www.w3schools.com)
- Computer Science for Fun (www.cs4fn.org)
- Neso Academy (www.nesoacademy.org)
- Studytonight (www.studytonight.com)
- Computer Science Unplugged (csunplugged.org)
- Exploring Computer Science (www.exploringcs.org)



Swarnnim School of Computing & IT

B. Sc.- IT (Honours) Programme

Semester II

Course Title: Database Management System

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | BSCIT230202 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 30% | 20% |

Course Outcomes(COs)

Here are concise course outcomes for the syllabus:

- Analyze data models and explain DBMS architecture for effective data management.
- Design and represent complex data using E-R and object modeling techniques.
- Implement file organization methods including indexing and hashing.
- Apply relational concepts and SQL for querying and programming databases.
- Convert EER and ER models into relational schemas.
- Normalize data and ensure data security through recovery and authorization techniques.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|---|-----------------------|------------------|
| 1 | <ul style="list-style-type: none"> • Introduction: Characteristics of database approach, data models, DBMS architecture and data independence. • E-R Modeling: Entity types, Entity set, attribute and key, relationships, relation types, roles and structural constraints, weak entities, enhanced E-R and object modeling, Sub classes; Super classes, inheritance, specialization and generalization. | 15 | 35% |
| 2 | <ul style="list-style-type: none"> • File Organization: Indexed sequential access files; implementation using B & B++ trees, hashing, hashing functions, collision resolution, extendible hashing, dynamic hashing approach implementation and performance | 7 | 15% |
| 3 | <ul style="list-style-type: none"> • Relational Data Model: Relational model concepts, relational constraints, relational algebra • SQL: SQL queries, programming using SQL. | 8 | 15% |
| 4 | <ul style="list-style-type: none"> • EER and ER to relational mapping: Data base design using EER to relational language. • Data Normalization: Functional Dependencies, Normal form up to 3rd normal form. Concurrency Control: Transaction processing, locking techniques and associated, database recovery, security and authorization. Recovery Techniques, Database Security | 15 | 35% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--|---------------------------|-------------|-------------|
| 1 | Abraham Silberschatz, Henry Korth, S.Sudarshan | Database Systems Concepts | McGraw Hill | 4th Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------------------------|---|----------------------------|-------------------------|
| 1 | Jim Melton, Alan Simon | Understanding the new SQL: A complete Guide | Morgan Kaufmann Publishers | 5th Edition |
| 2 | A.K. Majumdar, P. Bhattacharya | Database Management Systems | TMH | 2 nd Edition |

❖ List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- ACM Transactions on Computing Systems
- Journal of Computer Science and Technology
- Journal of the ACMIEEE Software
- CODE Magazine
- Journal of Computing Sciences in Colleges
- Computer Science Education
- Design & Markup News

WEB RESOURCES:

- Khan Academy (www.khanacademy.org)
- Computer Hope (www.computerhope.com)
- TechTerms (www.techterms.com)
- HowStuffWorks (www.howstuffworks.com)
- W3Schools (www.w3schools.com)
- Computer Science for Fun (www.cs4fn.org)
- Neso Academy (www.nesoacademy.org)
- Studytonight (www.studytonight.com)
- Computer Science Unplugged (csunplugged.org)
- Exploring Computer Science (www.exploringcs.org)



Swarnnim School of Computing & IT
B. Sc.- IT (Honours) Programme
Semester II

Course Title: Mobile Application Development

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Minor | BSCIT230203 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 30% | 20% |

Course Outcomes(COs)

Here are concise course outcomes for the syllabus:

- Design user-friendly mobile interfaces and layouts.
- Develop functional mobile applications using relevant programming languages.
- Employ effective testing and debugging techniques for app quality assurance.
- Deploy mobile apps in compliance with security and distribution guidelines.
- Stay informed about emerging trends and technologies in the mobile development landscape.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|---|-----------------------|------------------|
| 1 | <ul style="list-style-type: none">• Introduction to Mobile App Development: Understand the various mobile application development platforms and ecosystems. Describe the mobile app development lifecycle and its stages. Differentiate between native, web, and hybrid app development approaches.• User Interface Design for Mobile Apps: Apply principles of mobile user interface (UI) and user experience (UX) design. Design responsive and user-friendly layouts for mobile screens. Utilize UI components effectively and implement intuitive navigation patterns. | 15 | 35% |
| 2 | <ul style="list-style-type: none">• Programming for Mobile Apps: Demonstrate proficiency in programming languages (e.g., Java, Kotlin, Swift) used in mobile app development. Implement basic mobile app logic, data storage, and integration with external services. | 7 | 15% |
| 3 | <ul style="list-style-type: none">• Testing and Debugging Mobile Apps: Apply testing techniques for mobile applications on emulators and real devices. Diagnose and resolve common errors and issues in mobile app development. Perform user acceptance testing and ensure usability standards.• App Deployment and Distribution: Prepare mobile apps for deployment, adhering to platform-specific guidelines. Navigate the app store submission process and understand distribution strategies. Deploy mobile apps to target users and devices effectively. | 8 | 15% |
| 4 | <ul style="list-style-type: none">• Security Considerations in Mobile App Development: Identify potential security risks in mobile app development. Apply secure coding practices to protect data and enhance app security. Implement basic authentication and authorization mechanisms in mobile apps.• Emerging Trends in Mobile App Development: Recognize and discuss current trends in mobile app development. Evaluate | 15 | 35% |

| | | | |
|--|---|--|--|
| | the potential of integrating emerging technologies (e.g., AR/VR) in mobile apps. Explore cross-platform development frameworks as a means of extending app reach. | | |
|--|---|--|--|

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---------------------------------|---|-----------------------|----------------|
| 1 | Bill Phillips and Chris Stewart | Android Programming: The Big Nerd Ranch Guide | Big Nerd Ranch Guides | 4th Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---------------------------------|---|-----------------------|-------------------------|
| 1 | Christian Keur, Aaron Hillegass | iOS Programming: The Big Nerd Ranch Guide | Big Nerd Ranch Guides | 5th Edition |
| 2 | Jason González | Mobile First Design with HTML5 and CSS3 | Packt Publishing | 2 nd Edition |

❖ List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- ACM Transactions on Computing Systems
- Journal of Computer Science and Technology
- Journal of the ACMIEEE Software
- CODE Magazine
- Journal of Computing Sciences in Colleges
- Computer Science Education
- Design & Markup News

WEB RESOURCES:

- Khan Academy (www.khanacademy.org)
- Computer Hope (www.computerhope.com)
- TechTerms (www.techterms.com)
- HowStuffWorks (www.howstuffworks.com)
- W3Schools (www.w3schools.com)
- Computer Science for Fun (www.cs4fn.org)
- Neso Academy (www.nesoacademy.org)
- Studytonight (www.studytonight.com)
- Computer Science Unplugged (csunplugged.org)
- Exploring Computer Science (www.exploringcs.org)



Swarnnim School of Computing & IT

B. Sc.- IT (Honours) Programme

Semester II

Course Title: Foundation in Statistical Methods

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MDC | BSCIT230204 | 3+1 | 60 | | | | | |
| | | | | 20% | 30% | - | 50% | - |

Course Outcomes(COs):

- Develop proficiency in organizing data through tabulation, frequency distribution, and graphical representation.
- Understand and compute measures like mean, median, mode, range, quartile deviation, mean deviation, and standard deviation for assessing data patterns.
- The concept of skewness and apply Karl Pearson's Coefficients of Skewness in practical scenarios.
- Gain insight into correlation types and methods, including Karl Pearson's correlation coefficient, to assess relationships between variables in datasets.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | <ul style="list-style-type: none"> Classification of data, Tabulation of data, Preparation of frequency distribution, Presentation of data through histogram, frequency polygon, frequency curve | 12 | 26% |
| 2 | <ul style="list-style-type: none"> Measures of Central Tendency: Computation of Arithmetic mean, median and mode for ungrouped data and grouped data. | 10 | 22% |
| 3 | <ul style="list-style-type: none"> Measures of dispersion: Computation of Range, Quartile deviation, mean deviation and Standard deviation Concept of Skewness, Karl Pearson's Coefficients of Skewness(Numerical Applications Only) | 15 | 34% |
| 4 | <ul style="list-style-type: none"> Meaning of Correlation, types of correlation, correlation coefficient, Karl Pearson correlation coefficient. (Numerical Applications Only) | 08 | 18% |

| Evaluation | | |
|------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------------|-----------------------|---------------------|-------------------------------|
| 1 | Dr. S.P. Gupta | “Statistical Methods“ | Sultan Chand & Sons | 46th edition (1 January 2021) |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------------------|--|--------------|--------------|
| 1 | S.C. Gupta & V.K. Kapoor | Fundamental of Mathematical Statistics | Sultan Chand | 11th edition |
| 2 | Mode .E.B. | ”Elements of Statistics“ | PrenticeHall | 6th Edition |

❖ List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Journal of Statistical Education
- The American Statistician
- Journal of Applied Statistics
- Journal of Statistics Education
- International Journal for Innovation Education and Research
- Mathematics Teacher: Learning and Teaching PK-12

WEB RESOURCES:

- www.statistics.com
- stats.stackexchange.com
- TechTerms (www.techterms.com)
- HowStuffWorks (www.howstuffworks.com)
- W3Schools (www.w3schools.com)
- Computer Science for Fun (www.cs4fn.org)
- Neso Academy (www.nesoacademy.org)
- Studytonight (www.studytonight.com)



Swarnnim School of Computing & IT
B. Sc.- IT (Honours) Programme
Semester II
Course Title: Logical and Critical Thinking

| Category Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|-----------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| ACE | AEC230202 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

- Students are able to understand the basic concept of Logical and Critical Thinking and are able to solve problems
- Student analytical ability increased.
- Student can be placed in service based company, government sector, PSU and it will also help in higher study.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | Simplification and Approximation (BODMAS Rule, Approximation, Short trick, Digit Sum, Square Roots and Cube roots based Question) Coding Decoding (Coding means Encryption and Decoding means Decryption among letters, alphabets and Special Symbols) | 8 | 26% |
| 2 | Crypt arithmetic (Crypt arithmetic is a type of mathematical game consisting of Mathematical Equation) Analogy & Odd one out (An Analogy is a comparison between two objects or system of objects in which they are thought to be similar.) | 4 | 14% |
| 3 | Direction & Distance (Description of Directions and Determination of Distance wrt. Directions, Sunrise and Sunset with Shadow Concept.) Blood Relations (In such questions, one person describes his /her relation with another person. Pointer- narrator relations Symbols relation as well as group relation) | 6 | 20% |
| 4 | Number System Classifications of Number System [Rational/Irrational No's, Integers, fraction, Even-odd, Prime - Composite no's] Perfect number & Square, Face value-Place value Frequency of Digit Occurrence Concept of Divisibility Rule - finding the division of a number Cyclicity rule - Unit digit Concept, Trailing Zeroes Binomial Theorem - for remainder Factorizations - Prime - Composite factors, Total factors, Even-Odd factors | 12 | 40% |

| Evaluation | | |
|-------------------|---|--------------------------|
| 1 | Assignments/ Quizzes/ClassParticipation / Role Play/Projectetc. | 30%(Internal Assessment) |
| 2 | InternalExamination | 20%(InternalAssessment) |
| 3 | ExternalExamination(UniversityExam) | 50%(External Assessment) |

BasicTextBooks:

| Sr. No. | Author/s | Nameof the Book | Publisher | Edition |
|----------------|-----------------|--|------------------|----------------|
| 1 | R.S.AGRWAL | Reasoning for Competitive Examinations | S CHAND | 2022 |
| 2 | R.S. AGRWAL | Quantitative Aptitude for Competitive Examinations | S CHAND | 2022 |

ReferenceBooks:

| Sr. No. | Author/s | Name of theBook | Publisher | Edition |
|----------------|-----------------|--|-----------------------|-----------------------|
| 1 | ARUN SHARMA | How To Prepare For Quantitative Aptitude | McGraw Hill Education | 10 TH 2022 |
| 2 | R. PRAVEEN | Quantitative Aptitude and Reasoning | PHI Learning Pvt Ltd | 3 RD 2016 |

Relevant Websites

ARIHANT REASONING E-BOOK PDF

<https://parikshatop.com/arihant-reasoning-book-pdf-download-free/>

E BOOK FOR REASONING – ARUN SHARMA

<https://z-lib.is/book/how-to-prepare-for-logical-reasoning-for-the-cat>

E BOOK FOR APTITUDE– ARUN SHARMA

<https://z-lib.is/book/how-to-prepare-for-quantitative-aptitude-for-the-cat>

LINK FOR MULTIPLE QUANT E BOOK

<https://www.google.com/search?q=aptitude+book+for+placement+pdf&oq=APTITUDE+BOOK&aqs=chrome.3.0i512l10.12648j0j15&sourceid=chrome&ie=UTF-8>



School of Computing & IT
Programme B. Sc.- IT
Semester II

Core Course Title: Identifying Entrepreneurial Opportunities

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| SEC | SEC230202 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

- Exploration of opportunities from the market
- Check technical, market, financial and other types of Feasibility of a business idea.
- Develop business model to describe the rationale of how an organization creates, delivers, and captures value
- Identification of various Business Opportunities from the market

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | Opportunities: Their nature, discovery, and Creation: <ul style="list-style-type: none"> • Opportunities: Their basic nature, opportunities: Discovered, created, or both, Opportunities: The role of information, experience and social network- The role of information in opportunity recognition, The role of experience and social networks in opportunity recognition, • How entrepreneurs can become skilled at recognizing opportunities...Entrepreneurship, Entrepreneurship and Startup | 14 | 50% |
| 2 | Business Idea Creation & IPR <ul style="list-style-type: none"> • Meaning, sources of business ideas, techniques for idea generation like brain storming, • Focus group, six thinking hats as idea generation, • Characteristics of brilliant business ideas Introduction: <ul style="list-style-type: none"> • Knowledge creation, Innovation and Intellectual Property Rights, Concept of Intellectual Property, • Types of IPR – Patents – Copyright – Trademark – Industrial Designs – Trade Secrets – Geographical | 8 | 25% |
| 3 | Business Model: <ul style="list-style-type: none"> • Introduction to business model, Types of business model, | 8 | 25% |

| | | | |
|--|---|--|--|
| | <ul style="list-style-type: none"> Developing and testing a business model, Business modelling process, Business model canvas, Business Models and value proposition, Business Model Failure: Reasons and Remedies Reinventing business model | | |
|--|---|--|--|

Evaluation

| | | |
|---|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------------------|--|-----------------------|----------------|
| 1 | S.S. Khanka, Gupta. C.B. | Entrepreneurship & Small Business Management | Sultan Chand and Sons | Latest Edition |
| 2 | Sami Uddin | Entrepreneurship Development in India | Mittal Publications | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-----------------------------------|---|-----------------------|---------|
| 1 | Dr. Bhatia. R.C | Entrepreneurship: Business and Management | Sultan Chand and Sons | Latest |
| 2 | Bruce R. Barringer | Entrepreneurship: Successfully Launching New Ventures | Pearson Education | Latest |
| 3 | <u>Janakiram. B., Rizwana. M.</u> | Entrepreneurship development | Excel Books | Latest |
| 4 | Khanna. S.S. | Entrepreneurial Development | Excel Books | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

1. Journal of Entrepreneurship
2. Journal of Small Business Management
3. Journal of Entrepreneurship & Management

4. AMC Indian Journal of Entrepreneurship



School of Computing & IT
Programme B. Sc.- IT
Semester II
Course Title: Environmental Studies

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| VAC | VAC230201 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

- Enabling students to understand and realize the multi- disciplinary nature of the environment, its components, and inter-relationship between man and environment.
- Understanding the relevance and importance of natural resources in the sustenance of life on earth and living standard. the importance of ecosystem, biodiversity, and nature.
- Correlating the human population growth and its trend to the environmental degradation and developing the awareness about his/her role towards environmental protection. Identifying different types of environmental pollution and control measures.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | Introduction to Environment and Environmental Studies, Natural Resources: <ul style="list-style-type: none"> • Definition and Components of Environment, Relationship between the different components of Environment, Man and Environment relationship, Impact of technology on Environment, Environmental Degradation, its scope. • Water resources: Sources of water - Surface and Ground water sources, Indian and Global scenario. • Land resources: Land pollution, land use, land degradation & its causes. • Forest resources: Definition and Types of Forests importance and benefits of forest, Deforestation causes and effects. | 9 | 30% |
| 2 | Ecology and Ecosystems: <ul style="list-style-type: none"> • Ecology: Introduction, Objectives and Classification, Concept of an ecosystem-structure of ecosystem or Components of ecosystem- Producers, Consumers, Decomposers • Ecosystems: Forest Ecosystem, Grassland Ecosystem, Desert Ecosystem, Aquatic Ecosystem, Estuarine Ecosystem • Human Population and Environment: Population Growth, World and Indian scenario, Population and Environmental Degradation, Malthusian theory, Optimum theory, • Urbanization: Urban population growth and Environmental problems | 12 | 40% |
| 3 | Environmental pollutions: <ul style="list-style-type: none"> • Water Pollution: Introduction – Water Quality standards, sources of water | 9 | 30% |

| | | | |
|--|---|--|--|
| | <p>pollution Classification of water pollutants. Eutrophication</p> <ul style="list-style-type: none"> • Air Pollution: Composition of air, Structure of atmosphere, Ambient Air Quality Standards, Classification of air pollutants, • Land Pollution: Land uses, Land degradation: causes, effects and control, soil erosion • Noise Pollution: Introduction, Sound and Noise, Causes and Effects • Global Environmental Issues: Climate Change, Global Warming and Green House Effect, Acid Rain, Depletion of Ozone layer | | |
|--|---|--|--|

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------|---------------------------------|--------------------------|----------------|
| 1 | Snehal Popli & B.R.Shah | Basics of Environmental studies | Mahajan Publishing House | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------------------------|---------------------------------|--|----------------|
| 1 | Prof Dr N S Varandani | Basics of Environmental Studies | LAP -Lambert Academic Publishing Germany | Latest |
| 2 | R. Rajagopalan | Environmental Studies | Oxford University Press | Latest |
| 3 | U K Khare | Basics of Environmental Studies | Tata McGraw Hill | Latest |
| 4 | Daniel B Botkin & Edward A Keller | Environmental Sciences | John Wiley & Sons. | Latest |

❖ List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Environmental Standard
- Indian Journal of Environmental Research and Studies
- Journal of Environmental Science and Technology.

1. PROGRAM STRUCTURE

B.Sc. Nursing Program Structure

| I Semester | III Semester | V Semester | VII Semester |
|--|---|---|---|
| <ol style="list-style-type: none"> 1. Communicative English 2. Applied Anatomy 3. Applied Physiology 4. Applied Sociology 5. Applied Psychology 6. *Nursing Foundations I <p>Mandatory Module *First Aid as part of Nursing Foundation I Course</p> | <ol style="list-style-type: none"> 1. Applied Microbiology and Infection Control including Safety 2. Pharmacology I 3. Pathology I 4. *Adult Health (Medical Surgical) Nursing I with integrated pathophysiology <p>Mandatory Module *BCLS as part of Adult Health Nursing I</p> | <ol style="list-style-type: none"> 1. *Child Health Nursing I 2. Mental Health Nursing I 3. Community Health Nursing I (including Environmental Science & Epidemiology) 4. Educational Technology/Nursing Education 5. Introduction to Forensic Nursing and Indian Laws <p>Mandatory Modules *Essential Newborn Care (ENBC), Facility Based Newborn Care (FBNBC), IMNCI and PLS as part of Child Health Nursing</p> | <ol style="list-style-type: none"> 1. Community Health Nursing II 2. Nursing Research & Statistics 3. Midwifery/Obstetrics and Gynecology (OBG) Nursing II <p>Mandatory Modules *Safe delivery app under OBG Nursing I/II (VI/VII Semester)</p> |
| II Semester | IV Semester | VI Semester | VIII Semester |
| <ol style="list-style-type: none"> 1. Applied Biochemistry 2. Applied Nutrition and Dietetics 3. *Nursing Foundations II 4. Health/Nursing Informatics & Technology <p>Mandatory Module *Health Assessment as part of Nursing Foundation II Course</p> | <ol style="list-style-type: none"> 1. *Pharmacology II 2. Pathology II & Genetics 3. Adult Health Nursing II with integrated pathophysiology including Geriatric Nursing 4. Professionalism, Professional Values & Ethics including Bioethics <p>Mandatory Module *Fundamentals of Prescribing under Pharmacology II *Palliative care module under Adult Health Nursing II</p> | <ol style="list-style-type: none"> 1. Child Health Nursing II 2. Mental Health Nursing II 3. Nursing Management & Leadership 4. *Midwifery/Obstetrics and Gynecology (OBG) Nursing I <p>Mandatory Module * SBA Module under OBG Nursing I/II (VI/VII Semester)</p> | <p>Internship (Intensive Practicum/Residency Posting)</p> |

Note: No institute/University will modify the curriculum. However they can add units/subject in the syllabus as deemed necessary.

#Modules both mandatory and elective shall be certified by the institution/external agency.

MANDATORY MODULES

The prepared modules/modules outlined by the Council such as Health Assessment & Fundamentals of Prescribing and available modules as National Guidelines (First Aid – NDMA, IMNCI, ENBC, FBNBC), Palliative Care, Safe Delivery App and SBA module will be provided in separate learning resource package.

For BCLS, PLS – Standard national/international modules can be used.

ELECTIVE MODULES

Number of electives to be completed: 3 (Every module = 1 credit = 20 hours)

III & IV Semesters: To complete any one elective by end of 4th semester across 1st to 4th semesters

- Human values
- Diabetes care
- Soft skills

V & VI Semesters: To complete any one of the following before end of 6th semester

- CBT
- Personality development
- Addiction psychiatry
- Adolescent health
- Sports health
- Accreditation and practice standards
- Developmental psychology
- Menopausal health
- Health Economics

VII & VIII Semesters: To complete any one of the following before end of 8th semester

- Scientific writing skills
- Lactation management
- Sexuality & Health
- Stress management
- Job readiness and employability in health care setting

2. CURRICULUM IMPLEMENTATION: OVERALL PLAN

Duration of the program: 8 semesters

1-7 Semesters**One Semester Plan for the first 7 Semesters**

Total Weeks per Semester: 26 weeks per semester

Number of Weeks per Semester for instruction: 20 weeks (40 hours per week × 20 weeks = 800 hours)

Number of Working Days: Minimum of 100 working days (5 days per week × 20 weeks)

Vacation, Holidays, Examination and Preparatory Holidays: 6 weeks

Vacation: 3 weeks

Holidays: 1 week

Examination and Preparatory Holidays: 2 weeks

8th Semester

One semester: 22 weeks

Vacation: 1 week

Holidays: 1 week

Examination and Preparatory Holidays: 2 weeks



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3. COURSES OF INSTRUCTION WITH CREDIT STRUCTURE

| S.No | Semester | Course Code | Course/Subject Title | Theor y credits | Theor y Conta ct hours | Lab/ Skill Lab credits | Lab/ Skill Lab Conta ct hours | Clinical credits | Clinic al Conta ct hours | Total credits | Total (hours) |
|------|----------|----------------|--|-----------------|------------------------|------------------------|-------------------------------|------------------|--------------------------|------------------|-------------------|
| 1 | First | ENGL 101 | Communicative English | 2 | 40 | | | | | | 40 |
| | | ANAT 105 | Applied Anatomy | 3 | 60 | | | | | | 60 |
| | | PHYS 110 | Applied Physiology | 3 | 60 | | | | | | 60 |
| | | SOCI 115 | Applied Sociology | 3 | 60 | | | | | | 60 |
| | | PSYC 120 | Applied Psychology | 3 | 60 | | | | | | 60 |
| | | N-NF (I) 125 | Nursing Foundation I including First Aid module | 6 | 120 | 2 | 80 | 2 | 160 | 10 | 360 |
| | | SSCC (I) 130 | Self-study/Co-curricular | | | | | | | | 40+40 |
| | | | TOTAL | 20 | 400 | 2 | 80 | 2 | 160 | 20+2+2=24 | 640+80=720 |
| 2 | Second | BIOC 135 | Applied Biochemistry | 2 | 40 | | | | | | 40 |
| | | NUTR 140 | Applied Nutrition and Dietetics | 3 | 60 | | | | | | 60 |
| | | N-NF (II) 125 | Nursing Foundation II including Health Assessment module | 6 | 120 | 3 | 120 | 4 | 320 | | 560 |
| | | HNIT 145 | Health/Nursing Informatics & Technology | 2 | 40 | 1 | 40 | | | | 80 |
| | | SSCC (II) 130 | Self-study/Co-curricular | | | | | | | | 40+20 |
| | | | TOTAL | 13 | 260 | 4 | 160 | 4 | 320 | 13+4+4=21 | 740+60=800 |
| 3 | Third | MICR 201 | Applied Microbiology and Infection Control including Safety | 2 | 40 | 1 | 40 | | | | 80 |
| | | PHAR (I) 205 | Pharmacology I | 1 | 20 | | | | | | 20 |
| | | PATH (I) 210 | Pathology I | 1 | 20 | | | | | | 20 |
| | | N-AHN (I) 215 | Adult Health Nursing I with integrated pathophysiology including BCLS module | 7 | 140 | 1 | 40 | 6 | 480 | | 660 |
| | | SSCC (I) 220 | Self-study/Co-curricular | | | | | | | | 20 |
| | | | TOTAL | 11 | 220 | 2 | 80 | 6 | 480 | 11+2+6=19 | 780+20=800 |
| 4 | Fourth | PHAR (II) 205 | Pharmacology II including Fundamentals of prescribing module | 3 | 60 | | | | | | 60 |
| | | PATH (II) 210 | Pathology II and Genetics | 1 | 20 | | | | | | 20 |
| | | N-AHN (II) 225 | Adult Health Nursing II with integrated pathophysiology including Geriatric Nursing Palliative care module | 7 | 140 | 1 | 40 | 6 | 480 | | 660 |

INSTITUTION OF NURSING
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| S.No | Semester | Course Code | Course/Subject Title | Theor y credits | Theor y Conta ct hours | Lab/ Skill Lab credits | Lab/ Skill Lab Conta ct hours | Clinical credits | Clinic al Conta ct hours | Total credits | Total (hours) |
|------|----------------|----------------------|--|-----------------|------------------------|------------------------|-------------------------------|------------------|--------------------------|------------------|-------------------|
| | | PROF 230 | Professionalism, Professional Values and Ethics including bioethics | 1 | 20 | | | | | | 20 |
| | | SSCC(II) 220 | Self-study/Co-curricular | | | | | | | | 40 |
| | | | TOTAL | 12 | 240 | 1 | 40 | 6 | 480 | 12+1+6=19 | 760+40=800 |
| 5 | Fifth | N-CHN(I) 301 | Child Health Nursing I including Essential Newborn Care (ENBC), FBNC, IMNCI and PLS, modules | 3 | 60 | 1 | 40 | 2 | 160 | | 260 |
| | | N-MHN(I) 305 | Mental Health Nursing I | 3 | 60 | | | 1 | 80 | | 140 |
| | | N-COMH(I) 310 | Community Health Nursing I including Environmental Science & Epidemiology | 5 | 100 | | | 2 | 160 | | 260 |
| | | EDUC 315 | Educational Technology/Nursing Education | 2 | 40 | 1 | 40 | | | | 80 |
| | | N-FORN 320 | Introduction to Forensic Nursing and Indian laws | 1 | 20 | | | | | | 20 |
| | | SSCC(I) 325 | Self-study/Co-curricular | | | | | | | | 20+20 |
| | | | TOTAL | 14 | 280 | 2 | 80 | 5 | 400 | 14+2+5=21 | 760+40=800 |
| 6 | Sixth | N-CHN(II) 301 | Child Health Nursing II | 2 | 40 | | | 1 | 80 | | 120 |
| | | N-MHN(II) 305 | Mental Health Nursing II | 2 | 40 | | | 2 | 160 | | 200 |
| | | NMLE 330 | Nursing Management & Leadership | 3 | 60 | | | 1 | 80 | | 140 |
| | | N-MIDW(I) / OBGN 335 | Midwifery/Obstetrics and Gynaecology (OBG) Nursing I including SBA module | 3 | 60 | 1 | 40 | 3 | 240 | | 340 |
| | | SSCC(II) 325 | Self-study/Co-curricular | | | | | | | | - |
| | | | TOTAL | 10 | 200 | 1 | 40 | 7 | 560 | 10+1+7=18 | 800 |
| 7 | Seventh | N-COMH(II) 401 | Community Health Nursing II | 5 | 100 | | | 2 | 160 | | 260 |
| | | NRST 405 | Nursing Research & Statistics | 2 | 40 | 2 | 80 | | | | 120 |
| | | N-MIDW(II)/ OBGN 410 | Midwifery/Obstetrics and Gynaecology (OBG) Nursing II including Safe delivery app module | 3 | 60 | 1 | 40 | 4 | 320 | | 420 |

| S.No | Semester | Course Code | Course/Subject Title | Theor y credits | Theor y Conta ct hours | Lab/ Skill Lab credits | Lab/ Skill Lab Conta ct hours | Clinical credits | Clinic al Conta ct hours | Total credits | Total (hours) |
|------|---------------------------|-------------|------------------------------------|-----------------|------------------------|------------------------|-------------------------------|--|--------------------------|---------------|---|
| | | | Self-study/Co-curricular | | | | | | | | |
| | | | TOTAL | 10 | 200 | 3 | 120 | 6 | 480 | 10+3+6=19 | 800 |
| 8 | Eight (Internship) | INTE 415 | Community Health Nursing – 4 weeks | | | | | | | | |
| | | INTE 420 | Adult Health Nursing – 6 weeks | | | | | | | | |
| | | INTE 425 | Child Health Nursing – 4 weeks | | | | | | | | |
| | | INTE 430 | Mental Health Nursing – 4 weeks | | | | | | | | |
| | | INTE 435 | Midwifery – 4 weeks | | | | | | | | |
| | | | TOTAL = 22 weeks | | | | | 12 (1 credit = 4 hours per week per semester) | | | 1056 {4 hours × 22 weeks = 88 hours × 12 credits = 1056 hours} (48 hours per week × 22 weeks) |

1 credit theory – 1 hour per week per semester

1 credit practical/lab/skill lab/simulation lab – 2 hours per week per semester

1 credit clinical – 4 hours per week per semester

1 credit elective course – 1 hour per week per semester

Total Semesters = 8

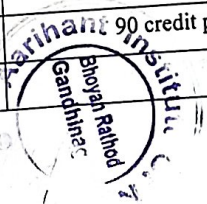
(Seven semesters: One semester = 20 weeks × 40 hours per week = 800 hours)

(Eighth semester – Internship: One semester = 22 weeks × 48 hours per week = 1056 hours)

Total number of course credits including internship and electives – 156 (141+12+3)

Distribution of credits and hours by courses, internship and electives

| S.No. | Credits | Theory (Cr/Hrs) | Lab (Cr/Hrs) | Clinical (Cr/Hrs) | Total credits | Hours |
|-------|----------------|--------------------------|--------------|-------------------|---------------|-------|
| 1 | Course credits | 90 credit per 1800 hours | 15/600 | 36/2880 | 141 | 5280 |
| 2 | Internship | | | | 12 | 1056 |



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|---|------------------------------|--|--|--|-----|------|
| 3 | Electives | | | | 3 | 60 |
| | TOTAL | | | | 156 | 6396 |
| 4 | Self-study and Co-curricular | Saturdays (one semester = 5 hours per week × 20 weeks × 7 semesters = 700 hours) | | | 12 | 240 |
| | | | | | 35 | 700 |
| | | | | | 47 | 940 |

Distribution of credits, hours and percentage for theory and practicum (Skill Lab & Clinical) across eight semesters

| S.No. | Theory & Practicum (Skill Lab & Clinical) | Credits | Hours | Percentage |
|-------|---|------------|-------------------|------------|
| 1 | Theory | 90 | 1800 | 28 |
| 2 | Lab/Skill Lab | 15 | 600 | 10 |
| 3 | Clinical | 36 | 3936 | 62 |
| | Total | 141 | 6336 hours | 100 |

Practicum (7 semesters) excluding internship

Lab/skill lab/simulation lab – 600 (17%)

Clinical – 2880 (83%)

Total – 3480

Lab/skill lab/simulation lab = 17% of the total practicum planned

Note: Besides the stipulated lab and clinical hours, a maximum of 13% (400-450 hours) from the clinical hours can be used in simulation lab/skill lab for skill lab/simulation learning and not to exceed 30% of total hours.

4. SCHEME OF EXAMINATION

The distribution of marks in internal assessment, End Semester College Exam, and End Semester University Exam for each course is shown below.

I SEMESTER

| S.No. | Course | Assessment (Marks) | | | | Total Marks |
|-------|--|--------------------|---------------------------|------------------------------|-------|-------------|
| | | Internal | End Semester College Exam | End Semester University Exam | Hours | |
| | Theory | | | | | |
| 1 | Communicative English | 25 | 25 | | 2 | 50 |
| 2 | Applied Anatomy & Applied Physiology | 25 | | 75 | 3 | 100 |
| 3 | Applied Sociology & Applied Psychology | 25 | | 75 | 3 | 100 |
| 4 | Nursing Foundations I | *25 | | | | |
| | Practical | | | | | |
| 5 | Nursing Foundations I | *25 | | | | |

*Will be added to the internal marks of Nursing Foundations II Theory and Practical respectively in the next semester (Total weightage remains the same)

Example:

Nursing Foundations I Theory: Nursing Foundations I Theory Internal marks in 1st semester will be added to Nursing Foundations II Theory Internal in the 2nd semester and average of the two semesters will be taken.

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| II SEMESTER | | Assessment (Marks) | | | | |
|-------------|--|--|---------------------------|------------------------------|-------|-------------|
| S.No. | Course | Internal | End Semester College Exam | End Semester University Exam | Hours | Total Marks |
| | Theory | | | | | |
| 1 | Applied Biochemistry and Applied Nutrition & Dietetics | 25 | | 75 | 3 | 100 |
| 2 | Nursing Foundations (I & II) | 25 I Sem-25 & II Sem-25 (with average of both) | | 75 | 3 | 100 |
| 3 | Health/Nursing Informatics & Technology | 25 | 25 | | 2 | 50 |
| | Practical | | | | | |
| 4 | Nursing Foundations (I & II) | 50 I Sem-25 & II Sem-25 | | 50 | | 100 |

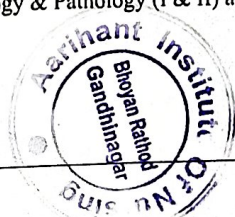
III SEMESTER

| III SEMESTER | | Assessment (Marks) | | | | |
|--------------|---|--------------------|---------------------------|------------------------------|-------|-------------|
| S.No. | Course | Internal | End Semester College exam | End Semester University Exam | Hours | Total marks |
| | Theory | | | | | |
| 1 | Applied Microbiology and Infection Control including Safety | 25 | | 75 | 3 | 100 |
| 2 | Pharmacology I and Pathology I | *25 | | | | |
| 3 | Adult Health Nursing I | 25 | | 75 | 3 | 100 |
| | Practical | | | | | |
| 4 | Adult Health Nursing I | 50 | | 50 | | 100 |

*Will be added to the internal marks of Pharmacology II and Pathology II & Genetics in the next semester (Total weightage remains the same).

IV SEMESTER

| IV SEMESTER | | Assessment (Marks) | | | | |
|-------------|--|---|---------------------------|------------------------------|-------|-------------|
| S.No. | Course | Internal | End Semester College exam | End Semester University Exam | Hours | Total marks |
| | Theory | | | | | |
| 1 | Pharmacology & Pathology (I & II) and Genetics | 25 III Sem-25 & IV Sem-25 (with average of | | 75 | 3 | 100 |



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| | | both) | | | | |
| 2 | Adult Health Nursing II | 25 | | 75 | 3 | 100 |
| 3 | Professionalism, Ethics and Professional Values | 25 | 25 | | 2 | 50 |
| | Practical | | | | | |
| 4 | Adult Health Nursing II | 50 | | 50 | | 100 |

V SEMESTER

| S.No. | Course | Assessment (Marks) | | | | |
|-------|---|--------------------|---------------------------|------------------------------|-------|-------------|
| | | Internal | End Semester College exam | End Semester University Exam | Hours | Total marks |
| | Theory | | | | | |
| 1 | Child Health Nursing I | *25 | | | | |
| 2 | Mental Health Nursing I | *25 | | | | |
| 3 | Community Health Nursing I including Environmental Science & Epidemiology | 25 | | 75 | 3 | 100 |
| 4 | Educational Technology/Nursing Education | 25 | | 75 | 3 | 100 |
| 5 | Introduction to Forensic Nursing and Indian Laws | 25 | 25 | | 2 | 50 |
| | Practical | | | | | |
| 6 | Child Health Nursing I | *25 | | | | |
| 7 | Mental Health Nursing I | *25 | | | | |
| 8 | Community Health Nursing I | 50 | | 50 | | 100 |

*Will be added to the internal marks of Child Health Nursing II and Mental Health Nursing II in both theory and practical respectively in the next semester (Total weightage remains same).

VI SEMESTER

| S.No. | Course | Assessment (Marks) | | | | |
|-------|--------------------------------|--|---------------------------|------------------------------|-------|-------------|
| | | Internal | End Semester College exam | End Semester University Exam | Hours | Total marks |
| | Theory | | | | | |
| 1 | Child Health Nursing (I & II) | 25 Sem V-25 & Sem VI-25 (with average of both) | | 75 | 3 | 100 |
| 2 | Mental Health Nursing (I & II) | 25 Sem V-25 & Sem VI-25 (with average of both) | | 75 | 3 | 100 |



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5. EXAMINATION REGULATIONS

Note:

1. Applied Anatomy and Applied Physiology: Question paper will consist of Section-A Applied Anatomy of 37 marks and Section-B Applied Physiology of 38 marks.
2. Applied Sociology and Applied Psychology: Question paper will consist of Section-A Applied Sociology of 37 marks and Section-B Applied Psychology of 38 marks.
3. Applied Microbiology and Infection Control including Safety: Question paper will consist of Section-A Applied Microbiology of 37 marks and Section-B Infection Control including Safety of 38 marks.
4. Applied Nutrition and Dietetics and Applied Biochemistry: Question paper will consist of Section-A Applied Nutrition and Dietetics of 50 marks and Section-B Biochemistry of 25 marks.
5. Pharmacology, Genetics and Pathology: Question paper will consist of Section-A of Pharmacology with 38 marks, Section-B of Pathology with 25 marks and Genetics with 12 marks.
6. Nursing Research and Statistics: Nursing Research should be of 55 marks and Statistics of 20 marks.
7. A candidate must have minimum of 80% attendance (irrespective of the kind of absence) in theory and practical in each course/subject for appearing for examination.
8. A candidate must have 100% attendance in each of the practical areas before award of degree.
9. Following exams shall be conducted as College exam and minimum pass is 50% (C Grade) and to be sent to the University for inclusion in the marks sheet and shall be considered for calculating aggregate.
 - i. Communicative English
 - ii. Health/Nursing Informatics and Technology
 - iii. Professionalism, Professional Values and Ethics including Bioethics
 - iv. Introduction to Forensic Nursing & Indian Laws
10. Minimum pass marks shall be 40% (P grade/4 point) for English only and elective modules.
11. Minimum pass marks shall be 50% in each of the Theory and practical papers separately except in English.
12. The student has to pass in all **mandatory modules** placed within courses and the pass mark for each module is 50% (C Grade). The allotted percentage of marks will be included in the internal assessment of College/University Examination (Refer Appendix 2).
13. A candidate has to pass in theory and practical exam separately in each of the paper.
14. If a candidate fails in either theory or practical, he/she has to re-appear for both the papers (Theory and Practical).
15. If the student has failed in only one subject and has passed in all the other subjects of a particular semester and Grace marks of up to 5 marks to theory marks can be added for one course/subject only, provided that by such an addition the student passes the semester examination.
16. The candidate shall appear for exams in each semester:
 - i. The candidate shall have cleared all the previous examinations before appearing for fifth semester examination. However, the candidates shall be permitted to attend the consecutive semesters.
 - ii. The candidate shall have cleared all the previous examinations before appearing for seventh semester examination. However, the candidates shall be permitted to attend the consecutive semesters.
 - iii. The candidate shall have cleared all the previous examination before appearing for final year examination.
 - iv. The maximum period to complete the course successfully should not exceed 8 years.
17. The candidate has to pass separately in internal and external examination (shall be reflected in the marks sheet). No institution shall submit average internal marks of the students not more than 75% (i.e. if 40 students are admitted in a course the average score of the 40 students shall not exceed 75% of total internal marks).
18. At least 50% of the Non-nursing subjects like Applied Anatomy & Physiology, Applied Biochemistry, Applied Psychology & Sociology, Applied Microbiology, Pharmacology, Genetics, Nutrition & Dietetics, Communicative English and Health/Nursing Informatics & Technology should be taught by the Nursing teachers. Teachers who are involved in teaching non-nursing subjects can be the examiners for the program.
19. Maximum number of candidates for practical examination should not exceed 20 per day. Particular year and of same institution batch shall be examined by the same set of examiners.
20. All practical examinations must be held in the respective clinical areas.

Shriyan Rathor
Chairman
Examination

P.R.

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21. One internal and one external examiner should jointly conduct practical examination for each student.
22. An examiner for theory and practical/OSCE examination should be an Assistant Professor or above in a College of Nursing with M.Sc. (Nursing) in concerned subject and minimum 3 years of teaching experience. To be an examiner for Nursing Foundations course, the faculty having M.Sc. (Nursing) with any specialty shall be considered.

VII. ASSESSMENT GUIDELINES

1. Grading of Performance

Based on the performance, each student shall be awarded a final grade at the end of the semester for each course. Absolute grading is used by converting the marks to grade, based on predetermined class intervals.

UGC 10 point grading system is used with pass grade modified.

| Letter grade | Grade point | Percentage of marks |
|-------------------|-------------|---------------------|
| O (Outstanding) | 10 | 100% |
| A+ (Excellent) | 9 | 90-99.99% |
| A (Very Good) | 8 | 80-89.99% |
| B+ (Good) | 7 | 70-79.99% |
| B (Above Average) | 6 | 60-69.99% |
| C (Average) | 5 | 50-59.99% |
| P (Pass) | 4 | 40-49.99% |
| F (Fail) | 0 | |

For Nursing Courses and all other courses – Pass is at C Grade (5 grade point) 50% and above

For English and electives – Pass is at P Grade (4 grade point) 40% and above

Computation of Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA)

SPGA is the weighted average of the grade points obtained in all courses by the student during the semester (All courses excluding English and electives)

Ex. SGPA Computation

| Course Number | Credit/s | Letter grade | Grade point | Credit point (Credit × grade) |
|---------------|----------|--------------|-------------|-------------------------------|
| 1 | 3 (C1) | A | 8 (G1) | 3 × 8 = 24 |
| 2 | 4 (C2) | B+ | 7 (G2) | 4 × 7 = 28 |
| 3 | 3 (C3) | B | 6 (G3) | 3 × 6 = 18 |

$$SGPA = \frac{C1G1 + C2G2 + C3G3}{C1 + C2 + C3}$$

$$= \frac{70}{10} = 7 \text{ (rounded off to two decimal points)}$$



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Computation of CGPA

CGPA is calculated with SGPA of all semesters to two decimal points and is indicated in final grade in mark card/transcript showing grades of all 8 semesters and their courses/subjects.

CGPA reflects the failed status in case of fail till the course/s are passed.

| Semester 1 | Semester 2 | Semester 3 | Semester 4 |
|-----------------------|------------|------------|------------|
| Credit – Cr Cr: 20 | Cr: 22 | Cr: 25 | Cr: 26 |
| SGPA: 6.5 | SGPA: 7.0 | SGPA: 5.5 | SGPA: 6.0 |
| Cr × SGPA = 20 × 6.5 | | | |

$$\text{CGPA} = \frac{20 \times 6.5 + 22 \times 7 + 25 \times 5.5 + 26 \times 6}{93}$$

$$= \frac{577.5}{93} = 6.2$$

Transcript Format

Based on the above recommendation on letter grades, grade points, SPGA and CGPA, the transcript shall be issued for each semester with a consolidated transcript indicating the performance in all semesters.

Declaration of Pass

First Class with Distinction – CGPA of 7.5 and above

First Class – CGPA of 6.00-7.49

Second Class – CGPA of 5.00-5.99

2. Internal Assessment and Guidelines

The marks distribution of internal assessment is shown in Appendix 1 and the specific guidelines in Appendix 2.

3. University Theory and Practical Examination Pattern

The theory question paper pattern and practical exam pattern are shown in Appendix 3.

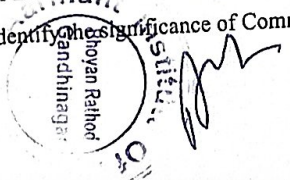
SYLLABUS**COMMUNICATIVE ENGLISH****PLACEMENT: I SEMESTER**

THEORY: 2 Credits (40 hours)

DESCRIPTION: The course is designed to enable students to enhance their ability to speak and write the language (and use English) required for effective communication in their professional work. Students will practice their skills in verbal and written English during clinical and classroom experience.

COMPETENCIES: On completion of the course, the students will be able to

1. Identify the significance of Communicative English for healthcare professionals.



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[भाग III—खण्ड 4]

| | | | | | |
|---|-------------------------------------|------------------------------------|----|---|-----|
| | | | 75 | 3 | 100 |
| 3 | Nursing Management & Leadership | 25 | | | |
| 4 | Midwifery/Obstetrics & Gynecology I | *25 | | | |
| | Practical | | 50 | | 100 |
| 5 | Child Health Nursing (I & II) | 50 (Sem V-25 & Sem VI-25) | | | |
| 6 | Mental Health Nursing (I & II) | 50 (Sem V-25 & Sem VI-25) | 50 | | 100 |
| 7 | Midwifery/Obstetrics & Gynecology I | *25 | | | |

*Will be added to Internal marks of Midwifery II theory and practical respectively in the next semester (Total weightage remains the same)

VII SEMESTER

| S.No. | Course | Assessment (Marks) | | | | |
|-------|--|--|---------------------------|------------------------------|-------|-------------|
| | | Internal | End Semester College Exam | End Semester University Exam | Hours | Total marks |
| | Theory | | | | | |
| 1 | Community Health Nursing II | 25 | | 75 | 3 | 100 |
| 2 | Nursing Research & Statistics | 25 | | 75 | 3 | 100 |
| 2 | Midwifery/Obstetrics and Gynecology (OBG) Nursing (I & II) | 25 Sem VI-25 & Sem VII-25 (with average of both) | | 75 | 3 | 100 |
| | Practical | | | | | |
| 3 | Community Health Nursing II | 50 | | 50 | | 100 |
| 4 | Midwifery/Obstetrics and Gynecology (OBG) Nursing (I & II) | 50 (Sem VI-25 & Sem VII-25) | | 50 | | 100 |

VIII SEMESTER

| S.No. | Course | Assessment (Marks) | | | | |
|-------|-----------------------|--------------------|---------------------------|------------------------------|-------|-------------|
| | | Internal | End Semester College Exam | End Semester University Exam | Hours | Total marks |
| | Practical | | | | | |
| 1 | Competency Assessment | 100 | | 100 | | 200 |



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2. Apply the concepts and principles of English Language use in professional development such as pronunciation, vocabulary, grammar, paraphrasing, voice modulation, Spelling, pause and silence.
3. Demonstrate attentive listening in different hypothetical situations.
4. Converse effectively, appropriately and timely within the given context and the individual or team they are communicating with either face to face or by other means.
5. Read, interpret and comprehend content in text, flow sheet, framework, figures, tables, reports, anecdotes etc.
6. Analyse the situation and apply critical thinking strategies.
7. Enhance expressions through writing skills.
8. Apply LSRW (Listening, Speaking, Reading and Writing) Skill in combination to learn, teach, educate and share information, ideas and results.

COURSE OUTLINE

T – Theory

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|--|--|---|--|
| I | 3 (T) | Identify the significance of communicative English | Communication <ul style="list-style-type: none"> What is communication? What are communication roles of listeners, speakers, readers and writers as healthcare professionals? | <ul style="list-style-type: none"> Definitions with examples, illustrations and explanations Identifying competencies/ communicative strategies in LSRW Reading excerpts on the above and interpreting them through tasks | <ul style="list-style-type: none"> Checking for understanding through tasks |
| II | 5 (T) | Describe concepts and principles of Language (English) use in professional development such as pronunciation, vocabulary, grammar, paraphrasing, voice modulation, spelling, pause and silence | Introduction to LSRGW <ul style="list-style-type: none"> L – Listening: Different types of listening S – Speaking: Understanding Consonants, Vowels, Word and Sentence Stress, Intonation R – Reading: Medical vocabulary, linkers Gr – Grammar: Understanding tenses, linkers W – Writing simple sentences and short paragraphs – emphasis on correct grammar | <ul style="list-style-type: none"> Exercises on listening to news, announcements, telephone conversations and instructions from others Information on fundamentals of Speech – Consonant, Vowel, Stress and Intonation with tasks based on these through audio/video and texts Reading a medical dictionary/ glossary of medical terms with matching exercises Information on tenses and basic concepts of correct grammar through fill in the blanks, true/false questions | <ul style="list-style-type: none"> Through 'check your understanding' exercises |

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|---|--|---|---|
| III | 5 (T) | Demonstrate attentive listening in different hypothetical situations | Attentive Listening <ul style="list-style-type: none"> Focusing on listening in different situations – announcements, descriptions, narratives, instructions, discussions, demonstrations Reproducing Verbatim Listening to academic talks/ lectures Listening to presentation | <ul style="list-style-type: none"> Listening to announcements, news, documentaries with tasks based on listening With multiple choice, Yes/No and fill in the blank activities | <ul style="list-style-type: none"> Checking individually against correct answers Listening for specific information Listening for overall meaning and instructions Listening to attitudes and opinions Listening to audio, video and identify key points |
| IV | 9 (T) | Converse effectively, appropriately and timely within the given context and the individual or team they are communicating with either face to face or other means | Speaking – Effective Conversation <ul style="list-style-type: none"> Conversation situations – informal, formal and neutral Factors influencing way of speaking – setting, topic, social relationship, attitude and language Greetings, introductions, requesting, asking for and giving permission, speaking personally and casual conversations Asking for information, giving instructions and directions Agreeing and disagreeing, giving opinions Describing people, places, events and things, narrating, reporting & reaching conclusions Evaluating and comparing Complaints and suggestions Telephone conversations Delivering presentations | <ul style="list-style-type: none"> Different types of speaking activities related to the content Guided with prompts and free discussions Presentation techniques Talking to peers and other adults. Talking to patients and Patient attenders Talking to other healthcare professionals Classroom conversation Scenario based learning tasks | <ul style="list-style-type: none"> Individual and group/peer assessment through live speaking tests Presentation of situation in emergency and routine Handoff Reporting in doctors/nurses' rounds Case presentation Face to face oral communication Speaking individually (Nurse to nurse/patient/ doctor) and to others in the group Telephonic talking |
| V | 5 (T) | Read, interpret and comprehend content in text, flow sheet, framework, figures, tables, reports, anecdotes | Reading <ul style="list-style-type: none"> Reading strategies, reading notes and messages Reading relevant articles and news items Vocabulary for everyday activities, abbreviations and medical vocabulary Understanding visuals, graphs, figures and notes on instructions | <ul style="list-style-type: none"> Detailed tasks and exercises on reading for information, inference and evaluation Vocabulary games and puzzles for medical lexis | <ul style="list-style-type: none"> Reading/ summarizing/ justifying answers orally Patient document Doctor's prescription of care Journal/news |

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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|---|---|--|--|
| | | | <ul style="list-style-type: none"> • Reading reports and interpreting them • Using idioms and phrases, spotting errors, vocabulary for presentations • Remedial Grammar | <ul style="list-style-type: none"> • Grammar activities | <ul style="list-style-type: none"> • reading and interpretation • Notes/Reports |
| VI | 5 (T) | Enhance expressions through writing skills | Writing Skills <ul style="list-style-type: none"> • Writing patient history • Note taking • Summarising • Anecdotal records • Letter writing • Diary/Journal writing • Report writing • Paper writing skills • Abstract writing | <ul style="list-style-type: none"> • Writing tasks with focus on task fulfilment, coherence and cohesion, appropriate vocabulary and correct grammar • Guided and free tasks • Different kinds of letter writing tasks | <ul style="list-style-type: none"> • Paper based assessment by the teacher/ trainer against set band descriptors • Presentation of situation • Documentation • Report writing • Paper writing skills • Verbatim reproducing • Letter writing • Resume/CV |
| VII | 8 (T) | Apply LSRW Skill in combination to learn, teach, educate and share information, ideas and results | LSRW Skills <ul style="list-style-type: none"> • Critical thinking strategies for listening and reading • Oral reports, presentations • Writing instructions, letters and reports • Error analysis regarding LSRW | <ul style="list-style-type: none"> • Valuating different options/multiple answers and interpreting decisions through situational activities • Demonstration – individually and in groups • Group Discussion • Presentation • Role Play • Writing reports | <ul style="list-style-type: none"> • Consolidated assessment orally and through written tasks/exercises |

APPLIED ANATOMY

PLACEMENT: 1 SEMESTER

THEORY: 3 Credits (60 hours)

DESCRIPTION: The course is designed to assist student to recall and further acquire the knowledge of the normal structure of human body, identify alteration in anatomical structure with emphasis on clinical application to practice nursing.

COMPETENCIES: On completion of the course, the students will be able to

1. Describe anatomical terms.
2. Explain the general and microscopic structure of each system of the body.
3. Identify relative positions of the major body organs as well as their general anatomic locations.
4. Explore the effect of alterations in structure.
5. Apply knowledge of anatomical structures to analyze clinical situations and therapeutic applications.

COURSE OUTLINE

T – Theory

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|--|--|---|---|
| I | 8 (T) | <p>Define the terms relative to the anatomical position</p> <p>Describe the anatomical planes</p> <p>Define and describe the terms used to describe movements</p> <p>Organization of human body and structure of cell, tissues membranes and glands</p> <p>Describe the types of cartilage</p> <p>Compare and contrast the features of skeletal, smooth and cardiac muscle</p> | <p>Introduction to anatomical terms and organization of the human body</p> <ul style="list-style-type: none"> • Introduction to anatomical terms relative to position – anterior, ventral, posterior dorsal, superior, inferior, median, lateral, proximal, distal, superficial, deep, prone, supine, palmar and plantar • Anatomical planes (axial/ transverse/ horizontal, sagittal/vertical plane and coronal/frontal/oblique plane) • Movements (flexion, extension, abduction, adduction, medial rotation, lateral rotation, inversion, eversion, supination, pronation, plantar flexion, dorsal flexion and circumduction) • Cell structure, Cell division • Tissue – definition, types, characteristics, classification, location • Membrane, glands – classification and structure • Identify major surface and bony landmarks in each body region, Organization of human body • Hyaline, fibro cartilage, elastic cartilage • Features of skeletal, smooth and cardiac muscle • Application and implication in nursing | <ul style="list-style-type: none"> • Lecture cum Discussion • Use of models • Video demonstration • Use of microscopic slides • Lecture cum Discussion • Video/Slides • Anatomical Torso | <ul style="list-style-type: none"> • Quiz • MCQ • Short answer |
| II | 6 (T) | <p>Describe the structure of respiratory system</p> <p>Identify the muscles of respiration and examine their contribution to the mechanism of breathing</p> | <p>The Respiratory system</p> <ul style="list-style-type: none"> • Structure of the organs of respiration • Muscles of respiration • Application and implication in nursing | <ul style="list-style-type: none"> • Lecture cum Discussion • Models • Video/Slides | <ul style="list-style-type: none"> • Short answer • Objective type |

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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/Learning Activities | Assessment Methods |
|------|------------|--|---|--|---|
| | | Apply the knowledge in performing nursing procedures/skills | The Muscular system <ul style="list-style-type: none"> • Types and structure of muscles • Muscle groups – muscles of the head, neck, thorax, abdomen, pelvis, upper limb and lower limbs • Principal muscles – deltoid, biceps, triceps, respiratory, abdominal, pelvic floor, pelvic floor muscles, gluteal muscles and vastus lateralis • Major muscles involved in nursing procedures | | |
| VIII | 5 (T) | Describe the structure of renal system | The Renal system <ul style="list-style-type: none"> • Structure of kidney, ureters, bladder, urethra • Application and implication in nursing | <ul style="list-style-type: none"> • Lecture • Models/charts | <ul style="list-style-type: none"> • MCQ • Short answer |
| IX | 5 (T) | Describe the structure of reproductive system | The Reproductive system <ul style="list-style-type: none"> • Structure of male reproductive organs • Structure of female reproductive organs • Structure of breast | <ul style="list-style-type: none"> • Lecture • Models/charts | <ul style="list-style-type: none"> • MCQ • Short answer |
| X | 6 (T) | Describe the structure of nervous system including the distribution of the nerves, nerve plexuses Describe the ventricular system | The Nervous system <ul style="list-style-type: none"> • Review Structure of neurons • CNS, ANS and PNS (Central, autonomic and peripheral) • Structure of brain, spinal cord, cranial nerves, spinal nerves, peripheral nerves, functional areas of cerebral cortex • Ventricular system – formation, circulation, and drainage • Application and implication in nursing | <ul style="list-style-type: none"> • Lecture • Explain with models • Video slides | <ul style="list-style-type: none"> • MCQ • Short answer |

Note: Few lab hours can be planned for visits, observation and handling
(less than 1 credit lab hours are not specified separately)

APPLIED PHYSIOLOGY

PLACEMENT: 1 SEMESTER

THEORY: 3 Credits (60 hours)

DESCRIPTION: The course is designed to assist student to acquire comprehensive knowledge of the normal functions of the organ systems of the human body to facilitate understanding of physiological basis of health, identify alteration in functions and provide the student with the necessary physiological knowledge to practice nursing.

COMPETENCIES: On completion of the course, the students will be able to

1. Develop understanding of the normal functioning of various organ systems of the body.
2. Identify the relative contribution of each organ system towards maintenance of homeostasis.
3. Describe the effect of alterations in functions.
4. Apply knowledge of physiological basis to analyze clinical situations and therapeutic applications.

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COURSE OUTLINE

T – Theory

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|--|---|---|--|
| I | 4 (T) | Describe the physiology of cell, tissues, membranes and glands | General Physiology – Basic concepts <ul style="list-style-type: none"> Cell physiology including transportation across cell membrane Body fluid compartments, Distribution of total body fluid, intracellular and extracellular compartments, major electrolytes and maintenance of homeostasis Cell cycle Tissue – formation, repair Membranes and glands – functions Application and implication in nursing | <ul style="list-style-type: none"> Review – discussion Lecture cum Discussion Video demonstrations | <ul style="list-style-type: none"> Quiz MCQ Short answer |
| II | 6 (T) | Describe the physiology and mechanism of respiration Identify the muscles of respiration and examine their contribution to the mechanism of breathing | Respiratory system <ul style="list-style-type: none"> Functions of respiratory organs Physiology of respiration Pulmonary circulation – functional features Pulmonary ventilation, exchange of gases Carriage of oxygen and carbon-dioxide, Exchange of gases in tissue Regulation of respiration Hypoxia, cyanosis, dyspnea, periodic breathing Respiratory changes during exercise Application and implication in nursing | <ul style="list-style-type: none"> Lecture Video slides | <ul style="list-style-type: none"> Essay Short answer MCQ |
| III | 8 (T) | Describe the functions of digestive system | Digestive system <ul style="list-style-type: none"> Functions of the organs of digestive tract Saliva – composition, regulation of secretion and functions of saliva Composition and function of gastric juice, mechanism and regulation of gastric secretion Composition of pancreatic juice, function, regulation of pancreatic secretion Functions of liver, gall bladder and pancreas Composition of bile and function Secretion and function of small and large intestine Movements of alimentary tract Digestion in mouth, stomach, small intestine, large intestine, absorption of food Application and implications in nursing | <ul style="list-style-type: none"> Lecture cum Discussion Video slides | <ul style="list-style-type: none"> Essay Short answer MCQ |
| IV | 6 (T) | Explain the functions of the | Circulatory and Lymphatic system <ul style="list-style-type: none"> Functions of heart, conduction system, | <ul style="list-style-type: none"> Lecture | <ul style="list-style-type: none"> Short answer |

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|--|---|---------------------------------------|------------------------------------|
| | | heart, and physiology of circulation | cardiac cycle, Stroke volume and cardiac output • Blood pressure and Pulse • Circulation – principles, factors influencing blood pressure, pulse • Coronary circulation, Pulmonary and systemic circulation • Heart rate – regulation of heart rate • Normal value and variations • Cardiovascular homeostasis in exercise and posture • Application and implication in nursing | • Discussion • Video/Slides | • MCQ |
| V | 5 (T) | Describe the composition and functions of blood | Blood • Blood – Functions, Physical characteristics • Formation of blood cells • Erythropoiesis – Functions of RBC, RBC life cycle • WBC – types, functions • Platelets – Function and production of platelets • Clotting mechanism of blood, clotting time, bleeding time, PTT • Hemostasis – role of vasoconstriction, platelet plug formation in hemostasis, coagulation factors, intrinsic and extrinsic pathways of coagulation • Blood groups and types • Functions of reticuloendothelial system, immunity • Application in nursing | • Lecture • Discussion • Videos | • Essay • Short answer • MCQ |
| VI | 5 (T) | Identify the major endocrine glands and describe their functions | The Endocrine system • Functions and hormones of Pineal Gland, Pituitary gland, Thyroid, Parathyroid, Thymus, Pancreas and Adrenal glands. • Other hormones • Alterations in disease • Application and implication in nursing | • Lecture • Explain using charts | • Short answer • MCQ |
| VII | 4 (T) | Describe the structure of various sensory organs | The Sensory Organs • Functions of skin • Vision, hearing, taste and smell • Errors of refraction, aging changes • Application and implications in nursing | • Lecture • Video | • Short answer • MCQ |
| VIII | 6 (T) | Describe the functions of | Musculoskeletal system | • Lecture | • Structured essay |

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|--|--|--|--|
| III | 6 (T) | Describe the structure of digestive system | The Digestive system <ul style="list-style-type: none"> • Structure of alimentary canal and accessory organs of digestion • Application and implications in nursing | <ul style="list-style-type: none"> • Lecture cum Discussion • Video/Slides • Anatomical Torso | <ul style="list-style-type: none"> • Short answer • Objective type |
| IV | 6 (T) | Describe the structure of circulatory and lymphatic system. | The Circulatory and Lymphatic system <ul style="list-style-type: none"> • Structure of blood components, blood vessels – Arterial and Venous system • Position of heart relative to the associated structures • Chambers of heart, layers of heart • Heart valves, coronary arteries • Nerve and blood supply to heart • Lymphatic tissue • Veins used for IV injections • Application and implication in nursing | <ul style="list-style-type: none"> • Lecture • Models • Video/Slides | <ul style="list-style-type: none"> • Short answer • MCQ |
| V | 4 (T) | Identify the major endocrine glands and describe the structure of endocrine Glands | The Endocrine system <ul style="list-style-type: none"> • Structure of Hypothalamus, Pineal Gland, Pituitary gland, Thyroid, Parathyroid, Thymus, Pancreas and Adrenal glands | <ul style="list-style-type: none"> • Lecture • Models/charts | <ul style="list-style-type: none"> • Short answer • Objective type |
| VI | 4 (T) | Describe the structure of various sensory organs | The Sensory organs <ul style="list-style-type: none"> • Structure of skin, eye, ear, nose and tongue • Application and implications in nursing | <ul style="list-style-type: none"> • Lecture • Explain with Video/ models/charts | <ul style="list-style-type: none"> • Short answer • MCQ |
| VII | 10 (T) | Describe anatomical position and structure of bones and joints Identify major bones that make up the axial and appendicular skeleton Classify the joints Identify the application and implications in nursing Describe the structure of muscle | The Musculoskeletal system: The Skeletal system <ul style="list-style-type: none"> • Anatomical positions • Bones – types, structure, growth and ossification • Axial and appendicular skeleton • Joints – classification, major joints and structure • Application and implications in nursing | <ul style="list-style-type: none"> • Review – discussion • Lecture • Discussions • Explain using charts, skeleton and loose bones and torso • Identifying muscles involved in nursing procedures in lab | <ul style="list-style-type: none"> • Short answer • Objective type |



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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|--|---|--|---|
| | | bones, joints, various types of muscles, its special properties and nerves supplying them | <ul style="list-style-type: none"> Bones – Functions, movements of bones of axial and appendicular skeleton, Bone healing Joints and joint movements Alteration of joint disease Properties and Functions of skeletal muscles – mechanism of muscle contraction Structure and properties of cardiac muscles and smooth muscles Application and implication in nursing | <ul style="list-style-type: none"> Discussion Video presentation | <ul style="list-style-type: none"> Short answer MCQ |
| IX | 4 (T) | Describe the physiology of renal system | Renal system <ul style="list-style-type: none"> Functions of kidney in maintaining homeostasis GFR Functions of ureters, bladder and urethra Micturition Regulation of renal function Application and implication in nursing | <ul style="list-style-type: none"> Lecture Charts and models | <ul style="list-style-type: none"> Short answer MCQ |
| X | 4 (T) | Describe the structure of reproductive system | The Reproductive system <ul style="list-style-type: none"> Female reproductive system – Menstrual cycle, function and hormones of ovary, oogenesis, fertilization, implantation, Functions of breast Male reproductive system – Spermatogenesis, hormones and its functions, semen Application and implication in providing nursing care | <ul style="list-style-type: none"> Lecture Explain using charts, models, specimens | <ul style="list-style-type: none"> Short answer MCQ |
| XI | 8 (T) | Describe the functions of brain, physiology of nerve stimulus, reflexes, cranial and spinal nerves | <ul style="list-style-type: none"> Nervous system Overview of nervous system Review of types, structure and functions of neurons Nerve impulse Review functions of Brain-Medulla, Pons, Cerebrum, Cerebellum Sensory and Motor Nervous system Peripheral Nervous system Autonomic Nervous system Limbic system and higher mental Functions- Hippocampus, Thalamus, Hypothalamus Vestibular apparatus Functions of cranial nerves Autonomic functions Physiology of Pain-somatic, visceral and | <ul style="list-style-type: none"> Lecture cum Discussion Video slides | <ul style="list-style-type: none"> Brief structured essays Short answer MCQ Critical reflection |

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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|-------------------|---|-------------------------------|--------------------|
| | | | <ul style="list-style-type: none"> • Reflexes • CSF formation, composition, circulation of CSF, blood brain barrier and blood CSF barrier • Application and implication in nursing | | |

Note: Few lab hours can be planned for visits, observation and handling
(less than 1 credit lab hours are not specified separately)

APPLIED SOCIOLOGY

PLACEMENT: I SEMESTER

THEORY: 3 Credits (60 hours)

DESCRIPTION: This course is designed to enable the students to develop understanding about basic concepts of sociology and its application in personal and community life, health, illness and nursing.

COMPETENCIES: On completion of the course, the students will be able to

1. Identify the scope and significance of sociology in nursing.
2. Apply the knowledge of social structure and different culture in a society in identifying social needs of sick clients.
3. Identify the impact of culture on health and illness.
4. Develop understanding about types of family, marriage and its legislation.
5. Identify different types of caste, class, social change and its influence on health and health practices.
6. Develop understanding about social organization and disorganization and social problems in India.
7. Integrate the knowledge of clinical sociology and its uses in crisis intervention.

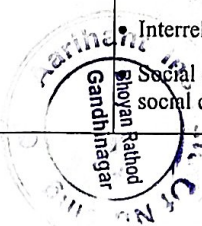
COURSE OUTLINE

T – Theory

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|--|---|---|---|
| I | 1 (T) | Describe the scope and significance of sociology in nursing | Introduction <ul style="list-style-type: none"> • Definition, nature and scope of sociology • Significance of sociology in nursing | <ul style="list-style-type: none"> • Lecture • Discussion | <ul style="list-style-type: none"> • Essay • Short answer |
| II | 15 (T) | Describe the individualization, Groups, processes of Socialization, social change and its importance | Social structure <ul style="list-style-type: none"> • Basic concept of society, community, association and institution • Individual and society • Personal disorganization • Social group – meaning, characteristics, and classification. • Social processes – definition and forms, Co-operation, competition, conflict, accommodation, assimilation, isolation • Socialization – characteristics, process, agencies of socialization • Social change – nature, process, and role of nurse | <ul style="list-style-type: none"> • Lecture cum Discussion | <ul style="list-style-type: none"> • Essay • Short answer • Objective type |

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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|---|---|--|---|
| | | | <ul style="list-style-type: none"> • Structure and characteristics of urban, rural and tribal community. • Major health problems in urban, rural and tribal communities • Importance of social structure in nursing profession | | |
| III | 8 (T) | Describe culture and its impact on health and disease | Culture <ul style="list-style-type: none"> • Nature, characteristic and evolution of culture • Diversity and uniformity of culture • Difference between culture and civilization • Culture and socialization • Transcultural society • Culture, Modernization and its impact on health and disease | <ul style="list-style-type: none"> • Lecture • Panel discussion | <ul style="list-style-type: none"> • Essay • Short answer |
| IV | 8 (T) | Explain family, marriage and legislation related to marriage | Family and Marriage <ul style="list-style-type: none"> • Family – characteristics, basic need, types and functions of family • Marriage – forms of marriage, social custom relating to marriage and importance of marriage • Legislation on Indian marriage and family. • Influence of marriage and family on health and health practices | <ul style="list-style-type: none"> • Lecture | <ul style="list-style-type: none"> • Essay • Short answer • Case study report |
| V | 8 (T) | Explain different types of caste and classes in society and its influence on health | Social stratification <ul style="list-style-type: none"> • Introduction – Characteristics & forms of stratification • Function of stratification • Indian caste system – origin and characteristics • Positive and negative impact of caste in society. • Class system and status • Social mobility-meaning and types • Race – concept, criteria of racial classification • Influence of class, caste and race system on health. | <ul style="list-style-type: none"> • Lecture • Panel discussion | <ul style="list-style-type: none"> • Essay • Short answer • Objective type |
| VI | 15 (T) | Explain social organization, disorganization, social problems and role of nurse in reducing social problems | Social organization and disorganization <ul style="list-style-type: none"> • Social organization – meaning, elements and types • Voluntary associations • Social system – definition, types, role and status as structural element of social system. • Interrelationship of institutions • Social control – meaning, aims and process of social control | <ul style="list-style-type: none"> • Lecture • Group discussion • Observational visit | <ul style="list-style-type: none"> • Essay • Short answer • Objective type • Visit report |



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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|--|---|---|---|
| | | | <ul style="list-style-type: none"> • Social norms, moral and values • Social disorganization – definition, causes, Control and planning • Major social problems – poverty, housing, food supplies, illiteracy, prostitution, dowry, Child labour, child abuse, delinquency, crime, substance abuse, HIV/AIDS, COVID-19 • Vulnerable group – elderly, handicapped, minority and other marginal group. • Fundamental rights of individual, women and children • Role of nurse in reducing social problem and enhance coping • Social welfare programs in India | | |
| VII | 5 (T) | Explain clinical sociology and its application in the hospital and community | Clinical sociology <ul style="list-style-type: none"> • Introduction to clinical sociology • Sociological strategies for developing services for the abused • Use of clinical sociology in crisis intervention | <ul style="list-style-type: none"> • Lecture, • Group discussion • Role play | <ul style="list-style-type: none"> • Essay • Short answer |

APPLIED PSYCHOLOGY

PLACEMENT: I SEMESTER

THEORY: 3 Credits (60 Hours)

DESCRIPTION: This course is designed to enable the students to develop understanding about basic concepts of psychology and its application in personal and community life, health, illness and nursing. It further provides students opportunity to recognize the significance and application of soft skills and self-empowerment in the practice of nursing.

COMPETENCIES: On completion of the course, the students will be able to

1. Identify the importance of psychology in individual and professional life.
2. Develop understanding of the biological and psychological basis of human behaviour.
3. Identify the role of nurse in promoting mental health and dealing with altered personality.
4. Perform the role of nurses applicable to the psychology of different age groups.
5. Identify the cognitive and affective needs of clients.
6. Integrate the principles of motivation and emotion in performing the role of nurse in caring for emotionally sick client.
7. Demonstrate basic understanding of psychological assessment and nurse's role.
8. Apply the knowledge of soft skills in workplace and society.
9. Apply the knowledge of self-empowerment in workplace, society and personal life.



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COURSE OUTLINE

T – Theory

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|---|---|---|---|
| I | 2 (T) | Describe scope, branches and significance of psychology in nursing | Introduction <ul style="list-style-type: none"> • Meaning of Psychology • Development of psychology – Scope, branches and methods of psychology • Relationship with other subjects • Significance of psychology in nursing • Applied psychology to solve everyday issues | <ul style="list-style-type: none"> • Lecture cum Discussion | <ul style="list-style-type: none"> • Essay • Short answer |
| II | 4 (T) | Describe biology of human behaviour | Biological basis of behavior –Introduction <ul style="list-style-type: none"> • Body mind relationship • Genetics and behaviour • Inheritance of behaviour • Brain and behaviour. • Psychology and sensation – sensory process – normal and abnormal | <ul style="list-style-type: none"> • Lecture • Discussion | <ul style="list-style-type: none"> • Essay • Short answer |
| III | 5 (T) | Describe mentally healthy person and defense mechanisms | Mental health and mental hygiene <ul style="list-style-type: none"> • Concept of mental health and mental hygiene • Characteristic of mentally healthy person • Warning signs of poor mental health • Promotive and preventive mental health strategies and services • Defense mechanism and its implication • Frustration and conflict – types of conflicts and measurements to overcome • Role of nurse in reducing frustration and conflict and enhancing coping • Dealing with ego | <ul style="list-style-type: none"> • Lecture • Case discussion • Role play | <ul style="list-style-type: none"> • Essay • Short answer • Objective type |
| IV | 7 (T) | Describe psychology of people in different age groups and role of nurse | Developmental psychology <ul style="list-style-type: none"> • Physical, psychosocial and cognitive development across life span – Prenatal through early childhood, middle to late childhood through adolescence, early and mid-adulthood, late adulthood, death and dying • Role of nurse in supporting normal growth and development across the life span • Psychological needs of various groups in health and sickness – Infancy, childhood, adolescence, adulthood and older adult • Introduction to child psychology and role of nurse in meeting the psychological needs of | <ul style="list-style-type: none"> • Lecture • Group discussion | <ul style="list-style-type: none"> • Essay • Short answer |

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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|--|---|--|--|
| | | | children <ul style="list-style-type: none"> • Psychology of vulnerable individuals – challenged, women, sick etc. • Role of nurse with vulnerable groups | | |
| V | 4 (T) | Explain personality and role of nurse in identification and improvement in altered personality | Personality <ul style="list-style-type: none"> • Meaning, definition of personality • Classification of personality • Measurement and evaluation of personality – Introduction • Alteration in personality • Role of nurse in identification of individual personality and improvement in altered personality | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration | <ul style="list-style-type: none"> • Essay and short answer • Objective type |
| VI | 16 (T) | Explain cognitive process and their applications | Cognitive process <ul style="list-style-type: none"> • Attention – definition, types, determinants, duration, degree and alteration in attention • Perception – Meaning of Perception, principles, factor affecting perception, • Intelligence – Meaning of intelligence – Effect of heredity and environment in intelligence, classification, Introduction to measurement of intelligence tests – Mental deficiencies • Learning – Definition of learning, types of learning, Factors influencing learning – Learning process, Habit formation • Memory – meaning and nature of memory, factors influencing memory, methods to improve memory, forgetting • Thinking – types, level, reasoning and problem solving. • Aptitude – concept, types, individual differences and variability • Psychometric assessment of cognitive processes – Introduction • Alteration in cognitive processes | <ul style="list-style-type: none"> • Lecture • Discussion | <ul style="list-style-type: none"> • Essay and short answer • Objective type |
| VII | 6 (T) | Describe motivation, emotion, attitude and role of nurse in emotionally sick client | Motivation and emotional processes <ul style="list-style-type: none"> • Motivation – meaning, concept, types, theories of motivation, motivation cycle, biological and special motives • Emotions – Meaning of emotions, development of emotions, alteration of emotion, emotions in sickness – handling emotions in self and other • Stress and adaptation – stress, stressor, cycle, effect, adaptation and coping | <ul style="list-style-type: none"> • Lecture • Group discussion | <ul style="list-style-type: none"> • Essay and short answer • Objective type |

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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|---|--|---|--|
| | | | <ul style="list-style-type: none"> • Attitudes – Meaning of attitudes, nature, factor affecting attitude, attitudinal change, Role of attitude in health and sickness • Psychometric assessment of emotions and attitude – Introduction • Role of nurse in caring for emotionally sick client | | |
| VIII | 4 (T) | Explain psychological assessment and tests and role of nurse | Psychological assessment and tests – introduction <ul style="list-style-type: none"> • Types, development, characteristics, principles, uses, interpretation • Role of nurse in psychological assessment | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration | <ul style="list-style-type: none"> • Short answer • Assessment of practice |
| IX | 10 (T) | Explain concept of soft skill and its application in work place and society | Application of soft skill <ul style="list-style-type: none"> • Concept of soft skill • Types of soft skill – visual, aural and communication skill • The way of communication • Building relationship with client and society • Interpersonal Relationships (IPR): Definition, Types, and Purposes, Interpersonal skills, Barriers, Strategies to overcome barriers • Survival strategies – managing time, coping stress, resilience, work – life balance • Applying soft skill to workplace and society – Presentation skills, social etiquette, telephone etiquette, motivational skills, teamwork etc. • Use of soft skill in nursing | <ul style="list-style-type: none"> • Lecture • Group discussion • Role play • Refer/Complete Soft skills module | <ul style="list-style-type: none"> • Essay and short answer |
| X | 2 (T) | Explain self-empowerment | Self-empowerment <ul style="list-style-type: none"> • Dimensions of self-empowerment • Self-empowerment development • Importance of women's empowerment in society • Professional etiquette and personal grooming • Role of nurse in empowering others | <ul style="list-style-type: none"> • Lecture • Discussion | <ul style="list-style-type: none"> • Short answer • Objective type |

NURSING FOUNDATION - I (including First Aid module)

PLACEMENT: I SEMESTER

THEORY: 6 Credits (120 hours)

PRACTICUM: Skill Lab: 2 Credits (80 hours) and Clinical: 2 Credits (160 hours)



DESCRIPTION: This course is designed to help novice nursing students develop knowledge and competencies required to provide evidence-based, comprehensive basic nursing care for adult patients, using nursing process approach.

COMPETENCIES: On completion of the course, the students will be able to

1. Develop understanding about the concept of health, illness and scope of nursing within health care services.
2. Apply values, code of ethics and professional conduct in professional life.
3. Apply the principles and methods of effective communication in establishing communication links with patients, families and other health team members.
4. Develop skill in recording and reporting.
5. Demonstrate competency in monitoring and documenting vital signs.
6. Describe the fundamental principles and techniques of infection control and biomedical waste management.
7. Identify and meet the comfort needs of the patients.
8. Perform admission, transfer, and discharge of a patient under supervision applying the knowledge.
9. Demonstrate understanding and application of knowledge in caring for patients with restricted mobility.
10. Perform first aid measures during emergencies.
11. Identify the educational needs of patients and demonstrate basic skills of patient education.

***Mandatory Module used in Teaching/Learning:**

First Aid: 40 Hours (including Basic CPR)

COURSE OUTLINE

T – Theory, SL – Skill Lab

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|--|---|---|---|
| I | 5 (T) | Describe the concept of health and illness | Introduction to health and illness <ul style="list-style-type: none"> • Concept of Health – Definitions (WHO), Dimensions • Maslow's hierarchy of needs • Health – Illness continuum • Factors influencing health • Causes and risk factors for developing illnesses • Illness – Types, illness behavior • Impact of illness on patient and family | <ul style="list-style-type: none"> • Lecture • Discussion | <ul style="list-style-type: none"> • Essay • Short answer • Objective type |
| II | 5 (T) | Describe the levels of illness prevention and care, health care services | Health Care Delivery Systems – Introduction of Basic Concepts & Meanings <ul style="list-style-type: none"> • Levels of Illness Prevention – Primary (Health Promotion), Secondary and Tertiary • Levels of Care – Primary, Secondary and Tertiary • Types of health care agencies/ services – Hospitals, clinics, Hospice, rehabilitation centres, extended care facilities • Hospitals – Types, Organization and | <ul style="list-style-type: none"> • Lecture • Discussion | <ul style="list-style-type: none"> • Essay • Short answer • Objective type |

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|-----------------|--|--|--|--|
| | | | <p>Functions</p> <ul style="list-style-type: none"> Health care teams in hospitals – members and their role | | |
| III | 12 (T) | <p>Trace the history of Nursing</p> <p>Explain the concept, nature and scope of nursing</p> <p>Describe values, code of ethics and professional conduct for nurses in India</p> | <p>History of Nursing and Nursing as a profession</p> <ul style="list-style-type: none"> History of Nursing, History of Nursing in India Contributions of Florence Nightingale Nursing – Definition – Nurse, Nursing, Concepts, philosophy, objectives, Characteristics, nature and Scope of Nursing/ Nursing practice, Functions of nurse, Qualities of a nurse, Categories of nursing personnel Nursing as a profession – definition and characteristics/criteria of profession Values – Introduction – meaning and importance Code of ethics and professional conduct for nurses – Introduction | <ul style="list-style-type: none"> Lecture Discussion Case discussion Role plays | <ul style="list-style-type: none"> Essay Short answers Objective type |
| IV | 8 (T) 3 (SL) | <p>Describe the process, principles, and types of communication</p> <p>Explain therapeutic, non-therapeutic and professional communication</p> <p>Communicate effectively with patients, their families and team members</p> | <p>Communication and Nurse Patient Relationship</p> <ul style="list-style-type: none"> Communication – Levels, Elements and Process, Types, Modes, Factors influencing communication Methods of effective communication/therapeutic communication techniques Barriers to effective communication/non-therapeutic communication techniques Professional communication Helping Relationships (Nurse Patient Relationship) – Purposes and Phases Communicating effectively with patient, families and team members Maintaining effective human relations and communication with vulnerable groups (children, women, physically and mentally challenged and elderly) | <ul style="list-style-type: none"> Lecture Discussion Role play and video film on Therapeutic Communication | <ul style="list-style-type: none"> Essay Short answer Objective type |
| V | 4 (T) 2 (SL) | <p>Describe the purposes, types and techniques of recording and reporting</p> <p>Maintain records and reports accurately</p> | <p>Documentation and Reporting</p> <ul style="list-style-type: none"> Documentation – Purposes of Reports and Records Confidentiality Types of Client records/Common Record-keeping forms Methods/Systems of documentation/Recording | <ul style="list-style-type: none"> Lecture Discussion Demonstration | <ul style="list-style-type: none"> Essay Short answer Objective type |

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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|-------------------|---|---|---|--|
| | | | <ul style="list-style-type: none"> Guidelines for documentation Do's and Don'ts of documentation/Legal guidelines for Documentation/Recording Reporting – Change of shift reports, Transfer reports, Incident reports | | |
| VI | 15 (T) 20 (SL) | <p>Describe principles and techniques of monitoring and maintaining vital signs</p> <p>Assess and record vital signs accurately</p> | <p>Vital signs</p> <ul style="list-style-type: none"> Guidelines for taking vital signs <i>Body temperature</i> – <ul style="list-style-type: none"> Definition, Physiology, Regulation, Factors affecting body temperature Assessment of body temperature – sites, equipment and technique Temperature alterations – Hyperthermia, Heat Cramps, Heat Exhaustion, Heatstroke, Hypothermia Fever/Pyrexia – Definition, Causes, Stages, Types Nursing Management <ul style="list-style-type: none"> Hot and Cold applications <i>Pulse:</i> <ul style="list-style-type: none"> Definition, Physiology and Regulation, Characteristics, Factors affecting pulse Assessment of pulse – sites, equipment and technique Alterations in pulse <i>Respiration:</i> <ul style="list-style-type: none"> Definition, Physiology and Regulation, Mechanics of breathing, Characteristics, Factors affecting respiration Assessment of respirations – technique Arterial Oxygen saturation Alterations in respiration <i>Blood pressure:</i> <ul style="list-style-type: none"> Definition, Physiology and Regulation, Characteristics, Factors affecting BP Assessment of BP – sites, equipment and technique, Common Errors in BP Assessment Alterations in Blood Pressure Documenting Vital Signs | <ul style="list-style-type: none"> Lecture Discussion Demonstration & Re-demonstration | <ul style="list-style-type: none"> Essay Short answer Objective type Document the given values of temperature, pulse, and respiration in the graphic sheet OSCE |
| VII | 3 (T) | Maintain equipment and linen | <p>Equipment and Linen</p> <ul style="list-style-type: none"> Types – Disposables and reusable <ul style="list-style-type: none"> Linen, rubber goods, glassware, metal, plastics, furniture Introduction – Indent, maintenance, Inventory | | |

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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|-------------------|---|--|---|---|
| VIII | 10 (T) 3 (SL) | Describe the basic principles and techniques of infection control and biomedical waste management | Introduction to Infection Control in Clinical setting Infection <ul style="list-style-type: none"> • Nature of infection • Chain of infection • Types of infection • Stages of infection • Factors increasing susceptibility to infection • Body defenses against infection – Inflammatory response & Immune response • Health care associated infection (Nosocomial infection) Introductory concept of Asepsis – Medical & Surgical asepsis <p><i>Precautions</i></p> <ul style="list-style-type: none"> • Hand Hygiene • (Hand washing and use of hand Rub) • Use of Personal Protective Equipment (PPE) • Standard precautions <p><i>Biomedical Waste management</i></p> <ul style="list-style-type: none"> • Types of hospital waste, waste segregation and hazards – Introduction | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Observation of autoclaving and other sterilization techniques • Video presentation on medical & surgical asepsis | <ul style="list-style-type: none"> • Essay • Short answer • Objective type |
| IX | 15 (T) 15 (SL) | Identify and meet the comfort needs of the patients | Comfort, Rest & Sleep and Pain <ul style="list-style-type: none"> • Comfort <ul style="list-style-type: none"> ◦ Factors Influencing Comfort ◦ Types of beds including latest beds, purposes & bed making ◦ Therapeutic positions ◦ Comfort devices • Sleep and Rest <ul style="list-style-type: none"> ◦ Physiology of sleep ◦ Factors affecting sleep ◦ Promoting Rest and sleep ◦ Sleep Disorders • Pain (Discomfort) <ul style="list-style-type: none"> ◦ Physiology ◦ Common cause of pain ◦ Types ◦ Assessment – pain scales and narcotic scales | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration & Re-demonstration | <ul style="list-style-type: none"> • Essay • Short answer • Objective type • OSCE |

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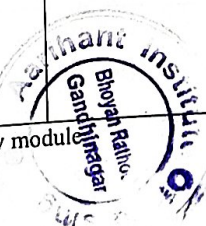
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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------------|---|--|--|---|
| | | | <ul style="list-style-type: none"> ○ Pharmacological and Non-pharmacological pain relieving measures – Use of narcotics, TENS devices, PCA ○ Invasive techniques of pain management ○ Any other newer measures ○ CAM (Complementary & Alternative healing Modalities) | | |
| X | 5 (T) 3 (SL) | Describe the concept of patient environment | Promoting Safety in Health Care Environment <ul style="list-style-type: none"> • Physical environment – Temperature, Humidity, Noise, Ventilation, Light, Odor, Pest control • Reduction of Physical hazards – fire, accidents • Fall Risk Assessment • Role of nurse in providing safe and clean environment • Safety devices – <ul style="list-style-type: none"> ○ Restraints – Types, Purposes, Indications, Legal Implications and Consent, Application of Restraints-Skill and Practice guidelines ○ Other Safety Devices – Side rails, Grab bars, Ambu alarms, non-skid slippers etc. | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration | <ul style="list-style-type: none"> • Essay • Short answer • Objective type |
| XI | 6 (T) 2 (SL) | Explain and perform admission, transfer, and discharge of a patient | Hospital Admission and discharge <ul style="list-style-type: none"> • Admission to the hospital Unit and preparation of unit <ul style="list-style-type: none"> ○ Admission bed ○ Admission procedure ○ Medico-legal issues ○ Roles and Responsibilities of the nurse • Discharge from the hospital <ul style="list-style-type: none"> ○ Types – Planned discharge, LAMA and Abscond, Referrals and transfers ○ Discharge Planning ○ Discharge procedure ○ Medico-legal issues ○ Roles and Responsibilities of the nurse ○ Care of the unit after discharge | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration | <ul style="list-style-type: none"> • Essay • Short answer • Objective type |
| XII | 8 (T) 10 (SL) | Demonstrate skill in caring for patients with restricted mobility | Mobility and Immobility <ul style="list-style-type: none"> • Elements of Normal Movement, Alignment & Posture, Joint Mobility, Balance, Coordinated Movement | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration & | <ul style="list-style-type: none"> • Essay • Short answer • Objective |

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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|-------------------|--|---|--|---|
| | | | <ul style="list-style-type: none"> • Principles of body mechanics • Factors affecting Body Alignment and activity • Exercise – Types and benefits • Effects of Immobility • Maintenance of normal Body Alignment and Activity • Alteration in Body Alignment and mobility • Nursing interventions for impaired Body Alignment and Mobility – assessment, types, devices used, method <ul style="list-style-type: none"> ◦ Range of motion exercises ◦ Muscle strengthening exercises ◦ Maintaining body alignment – positions ◦ Moving ◦ Lifting ◦ Transferring ◦ Walking • Assisting clients with ambulation • Care of patients with Immobility using Nursing process approach • Care of patients with casts and splints | Re-demonstration | type • OSCE |
| XIII | 4 (T) 2 (SL) | Describe the principles and practice of patient education | Patient education <ul style="list-style-type: none"> • Patient Teaching – Importance, Purposes, Process • Integrating nursing process in patient teaching | <ul style="list-style-type: none"> • Discussion • Role plays | <ul style="list-style-type: none"> • Essay • Short answer • Objective type |
| XIV | 20 (T) 20 (SL) | Explain and apply principles of First Aid during emergencies | First Aid* <ul style="list-style-type: none"> • Definition, Basic Principles, Scope & Rules • First Aid Management <ul style="list-style-type: none"> ◦ Wounds, Hemorrhage & Shock ◦ Musculoskeletal Injuries – Fractures, Dislocation, Muscle injuries ◦ Transportation of Injured persons ◦ Respiratory Emergencies & Basic CPR ◦ Unconsciousness ◦ Foreign Bodies – Skin, Eye, Ear, Nose, Throat & Stomach ◦ Burns & Scalds ◦ Poisoning, Bites & Stings ◦ Frostbite & Effects of Heat ◦ Community Emergencies | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration & Re-demonstration • Module completion • National Disaster Management Authority (NDMA) / Indian Red Cross Society (IRCS) First Aid module | <ul style="list-style-type: none"> • Essay • Short answer • Objective type • OSCE |

*Mandatory module



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CLINICAL PRACTICUM

Clinical Practicum: 2 Credits (160 hours), 10 weeks × 16 hours per week

PRACTICE COMPETENCIES: On completion of the clinical practicum, the students will be able to

1. Maintain effective human relations (projecting professional image)
2. Communicate effectively with patient, families and team members
3. Demonstrate skills in techniques of recording and reporting
4. Demonstrate skill in monitoring vital signs
5. Care for patients with altered vital signs
6. Demonstrate skill in implementing standard precautions and use of PPE
7. Demonstrate skill in meeting the comfort needs of the patients
8. Provide safe and clean environment
9. Demonstrate skill in admission, transfer, and discharge of a patient
10. Demonstrate skill in caring for patients with restricted mobility
11. Plan and provide appropriate health teaching following the principles
12. Acquire skills in assessing and performing First Aid during emergencies.

SKILL LAB**Use of Mannequins and Simulators**

| S.No. | Competencies | Mode of Teaching |
|-------|--|--------------------------------|
| 1. | Therapeutic Communication and Documentation | Role Play |
| 2. | Vital signs | Simulator/Standardized patient |
| 3. | Medical and Surgical Asepsis | Videos/Mannequin |
| 4. | Pain Assessment | Standardized patient |
| 5. | Comfort Devices | Mannequin |
| 6. | Therapeutic Positions | Mannequin |
| 7. | Physical Restraints and Side rails | Mannequin |
| 8. | ROM Exercises | Standardized patient |
| 9. | Ambulation | Standardized patient |
| 10. | Moving and Turning patients in bed | Mannequin |
| 11. | Changing position of helpless patients | Mannequin/Standardized patient |
| 12. | Transferring patients bed to stretcher/wheel chair | Mannequin/Standardized patient |
| 13. | Admission, Transfer, Discharge & Health Teaching | Role Play |



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CLINICAL POSTINGS – General Medical/Surgical Wards

10 weeks × 16 hours/week = 160 Hours

| Clinical Unit | Duration (in Weeks) | Learning Outcomes | Procedural Competencies/ Clinical Skills (Supervised Clinical Practice) | Clinical Requirements | Assessment Methods |
|---------------------------------|---------------------|--|--|---|---|
| General Medical/ Surgical wards | 2 | Maintain effective human relations (projecting professional image) Communicate effectively with patient, families and team members Demonstrate skills in techniques of recording and reporting | Communication and Nurse patient relationship • Maintaining Communication with patient and family and interpersonal relationship • Documentation and Reporting ○ Documenting patient care and procedures ○ Verbal report ○ Written report | | • OSCE |
| | 2 | Demonstrate skill in monitoring vital signs Care for patients with altered vital signs Demonstrate skill in implementing standard precautions and use of PPE | Vital signs • Monitor/measure and document vital signs in a graphic sheet ○ Temperature (oral, tympanic, axillary) ○ Pulse (Apical and peripheral pulses) ○ Respiration ○ Blood pressure ○ Pulse oximetry • Interpret and report alteration • Cold Applications – Cold Compress, Ice cap, Tepid Sponging • Care of equipment – thermometer, BP apparatus, Stethoscope, Pulse oximeter Infection control in Clinical settings • Hand hygiene • Use of PPE | • Care of patients with alterations in vital signs- 1 | • Assessment of clinical skills using checklist • OSCE |
| | 3 | Demonstrate skill in meeting the comfort needs of the patients | Comfort, Rest & Sleep, Pain and Promoting Safety in Health Care Environment Comfort, Rest & Sleep • Bed making- ○ Open ○ Closed ○ Occupied ○ Post-operative | | • Assessment of clinical skills using checklist • OSCE |

| Clinical Unit | Duration (in Weeks) | Learning Outcomes | Procedural Competencies/ Clinical Skills (Supervised Clinical Practice) | Clinical Requirements | Assessment Methods |
|---------------|---------------------|--|---|--|---|
| | | | <ul style="list-style-type: none"> o Cardiac bed o Fracture bed • Comfort devices <ul style="list-style-type: none"> o Pillows o Over bed table/cardiac table o Back rest o Bed Cradle • Therapeutic Positions <ul style="list-style-type: none"> o Supine o Fowlers (low, semi, high) o Lateral o Prone o Sim's o Trendelenburg o Dorsal recumbent o Lithotomy o Knee chest <p><i>Pain</i></p> <ul style="list-style-type: none"> • Pain assessment and provision for comfort <p><i>Promoting Safety in Health Care Environment</i></p> <ul style="list-style-type: none"> • Care of Patient's Unit • Use of Safety devices: <ul style="list-style-type: none"> o Side Rails • Restraints (Physical) • Fall risk assessment and Post Fall Assessment | <ul style="list-style-type: none"> • Fall risk assessment-1 | |
| | 2 | Demonstrate skill in admission, transfer, and discharge of a patient | Hospital Admission and discharge, Mobility and Immobility and Patient education <i>Hospital Admission and discharge</i> Perform & Document: <ul style="list-style-type: none"> • Admission • Transfer • Planned Discharge | | <ul style="list-style-type: none"> • Assessment of clinical skills using checklist • OSCE |
| | | Demonstrate skill in caring for patients with restricted mobility | Mobility and Immobility <ul style="list-style-type: none"> • Range of Motion Exercises • Assist patient in: <ul style="list-style-type: none"> o Moving | <ul style="list-style-type: none"> • Individual teaching-1 | <ul style="list-style-type: none"> • Assessment of clinical skills using checklist • OSCE |



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| Clinical Unit | Duration (in Weeks) | Learning Outcomes | Procedural Competencies/ Clinical Skills (Supervised Clinical Practice) | Clinical Requirements | Assessment Methods |
|---------------|---------------------|---|---|--|--|
| | | Plan and provide appropriate health teaching following the principles | <ul style="list-style-type: none"> ○ Turning ○ Logrolling • Changing position of helpless patient • Transferring (Bed to and from chair/wheelchair/ stretcher) <i>Patient education</i> | | |
| | 1 | Demonstrate skills in assessing and performing First Aid during emergencies | First aid and Emergencies <ul style="list-style-type: none"> • Bandaging Techniques <ul style="list-style-type: none"> ○ Basic Bandages: <ul style="list-style-type: none"> ▪ Circular ▪ Spiral ▪ Reverse-Spiral ▪ Recurrent ▪ Figure of Eight ○ Special Bandages: <ul style="list-style-type: none"> ▪ Caplin ▪ Eye/Ear Bandage ▪ Jaw Bandage ▪ Shoulder Spica ▪ Thumb spica ▪ Triangular Bandage/ Sling (Head & limbs) ▪ Binders | <ul style="list-style-type: none"> • Module completion National Disaster Management Authority (NDMA) First Aid module (To complete it in clinicals if not completed during lab) | <ul style="list-style-type: none"> • Assessment of clinical skills using checklist • OSCE (first aid competencies) |

APPLIED BIOCHEMISTRY

PLACEMENT: II SEMESTER

THEORY: 2 credits (40 hours) (includes lab hours also)

DESCRIPTION: The course is designed to assist the students to acquire knowledge of the normal biochemical composition and functioning of human body, its alterations in disease conditions and to apply this knowledge in the practice of nursing.

COMPETENCIES: On completion of the course, the students will be able to

1. Describe the metabolism of carbohydrates and its alterations.
2. Explain the metabolism of lipids and its alterations.
3. Explain the metabolism of proteins and amino acids and its alterations.
4. Explain clinical enzymology in various disease conditions.
5. Explain acid base balance, imbalance and its clinical significance.
6. Describe the metabolism of hemoglobin and its clinical significance.
7. Explain different function tests and interpret the findings.
8. Illustrate the immunohistochemistry.

COURSE OUTLINE

T – Theory

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|--|---|--|--|
| I | 8 (T) | Describe the metabolism of carbohydrates and its alterations | Carbohydrates <ul style="list-style-type: none"> • Digestion, absorption and metabolism of carbohydrates and related disorders • Regulation of blood glucose • Diabetes Mellitus – type 1 and type 2, symptoms, complications & management in brief • Investigations of Diabetes Mellitus <ul style="list-style-type: none"> ◦ OGTT – Indications, Procedure, Interpretation and types of GTT curve ◦ Mini GTT, extended GTT, GCT, IV GTT ◦ HbA1c (Only definition) • Hypoglycemia – Definition & causes | <ul style="list-style-type: none"> • Lecture cum Discussion • Explain using charts and slides • Demonstration of laboratory tests | <ul style="list-style-type: none"> • Essay • Short answer • Very short answer |
| II | 8 (T) | Explain the metabolism of lipids and its alterations | Lipids <ul style="list-style-type: none"> • Fatty acids – Definition, classification • Definition & Clinical significance of MUFA & PUFA, Essential fatty acids, Trans fatty acids • Digestion, absorption & metabolism of lipids & related disorders • Compounds formed from cholesterol • Ketone bodies (name, types & significance only) • Lipoproteins – types & functions (metabolism not required) • Lipid profile • Atherosclerosis (in brief) | <ul style="list-style-type: none"> • Lecture cum Discussion • Explain using charts and slides • Demonstration of laboratory tests | <ul style="list-style-type: none"> • Essay • Short answer • Very short answer |
| III | 9 (T) | Explain the metabolism of amino acids and proteins Identify alterations in disease conditions | Proteins <ul style="list-style-type: none"> • Classification of amino acids based on nutrition, metabolic rate with examples • Digestion, absorption & metabolism of protein & related disorders • Biologically important compounds synthesized from various amino acids (only names) • In born errors of amino acid metabolism – only aromatic amino acids (in brief) • Plasma protein – types, function & normal values • Causes of proteinuria, hypoproteinemia, hyper-gamma globulinemia • Principle of electrophoresis, normal & abnormal electrophoretic patterns (in | <ul style="list-style-type: none"> • Lecture cum Discussion • Explain using charts, models and slides | <ul style="list-style-type: none"> • Essay • Short answer • Very short answer |

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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|---|---|--|--|
| | | | brief) | | |
| IV | 4 (T) | Explain clinical enzymology in various disease conditions | Clinical Enzymology <ul style="list-style-type: none"> • Isoenzymes – Definition & properties • Enzymes of diagnostic importance in <ul style="list-style-type: none"> ◦ Liver Diseases – ALT, AST, ALP, GGT ◦ Myocardial infarction – CK, cardiac troponins, AST, LDH ◦ Muscle diseases – CK, Aldolase ◦ Bone diseases – ALP ◦ Prostate cancer – PSA, ACP | <ul style="list-style-type: none"> • Lecture cum Discussion • Explain using charts and slides | <ul style="list-style-type: none"> • Essay • Short answer • Very short answer |
| V | 3 (T) | Explain acid base balance, imbalance and its clinical significance | Acid base maintenance <ul style="list-style-type: none"> • pH – definition, normal value • Regulation of blood pH – blood buffer, respiratory & renal • ABG – normal values • Acid base disorders – types, definition & causes | <ul style="list-style-type: none"> • Lecture cum Discussion • Explain using charts and slides | <ul style="list-style-type: none"> • Short answer • Very short answer |
| VI | 2 (T) | Describe the metabolism of hemoglobin and its clinical significance | Heme catabolism <ul style="list-style-type: none"> • Heme degradation pathway • Jaundice – type, causes, urine & blood investigations (van den berg test) | <ul style="list-style-type: none"> • Lecture cum Discussion • Explain using charts and slides | <ul style="list-style-type: none"> • Short answer • Very short answer |
| VII | 3 (T) | Explain different function tests and interpret the findings | Organ function tests (biochemical parameters & normal values only) <ul style="list-style-type: none"> • Renal • Liver • Thyroid | <ul style="list-style-type: none"> • Lecture cum Discussion • Visit to Lab • Explain using charts and slides | <ul style="list-style-type: none"> • Short answer • Very short answer |
| VIII | 3 (T) | Illustrate the immunochemistry | Immunochemistry <ul style="list-style-type: none"> • Structure & functions of immunoglobulin • Investigations & interpretation – ELISA | <ul style="list-style-type: none"> • Lecture cum Discussion • Explain using charts and slides • Demonstration of laboratory tests | <ul style="list-style-type: none"> • Short answer • Very short answer |

Note: Few lab hours can be planned for observation and visits (Less than 1 credit, lab hours are not specified separately).

APPLIED NUTRITION AND DIETETICS

PLACEMENT: II SEMESTER

THEORY: 3 credits (60 hours)

Theory : 45 hours

Lab : 15 hours



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DESCRIPTION: The course is designed to assist the students to acquire basic knowledge and understanding of the principles of Nutrition and Dietetics and apply this knowledge in the practice of Nursing.

COMPETENCIES: On completion of the course, the students will be able to

1. Identify the importance of nutrition in health and wellness.
2. Apply nutrient and dietary modifications in caring patients.
3. Explain the principles and practices of Nutrition and Dietetics.
4. Identify nutritional needs of different age groups and plan a balanced diet for them.
5. Identify the dietary principles for different diseases.
6. Plan therapeutic diet for patients suffering from various disease conditions.
7. Prepare meals using different methods and cookery rules.

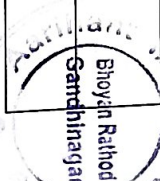
COURSE OUTLINE

T – Theory

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|--|---|--|--|
| I | 2 (T) | Define nutrition and its relationship to Health | Introduction to Nutrition <i>Concepts</i> <ul style="list-style-type: none"> • Definition of Nutrition & Health • Malnutrition – Under Nutrition & Over Nutrition • Role of Nutrition in maintaining health • Factors affecting food and nutrition <i>Nutrients</i> <ul style="list-style-type: none"> • Classification • Macro & Micronutrients • Organic & Inorganic • Energy Yielding & Non-Energy Yielding <i>Food</i> <ul style="list-style-type: none"> • Classification – Food groups • Origin | <ul style="list-style-type: none"> • Lecture cum Discussion • Charts/Slides | <ul style="list-style-type: none"> • Essay • Short answer • Very short answer |
| II | 3 (T) | Describe the classification, functions, sources and recommended daily allowances (RDA) of carbohydrates Explain BMR and factors affecting BMR | Carbohydrates <ul style="list-style-type: none"> • Composition – Starches, sugar and cellulose • Recommended Daily Allowance (RDA) • Dietary sources • Functions Energy <ul style="list-style-type: none"> • Unit of energy – Kcal • Basal Metabolic Rate (BMR) • Factors affecting BMR | <ul style="list-style-type: none"> • Lecture cum Discussion • Charts/Slides • Models • Display of food items | <ul style="list-style-type: none"> • Essay • Short answer • Very short answer |
| III | 3 (T) | Describe the classification, Functions, sources | Proteins <ul style="list-style-type: none"> • Composition | <ul style="list-style-type: none"> • Lecture cum Discussion • Charts/Slides | <ul style="list-style-type: none"> • Essay • Short answer • Very short |

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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|----------------|--|---|--|--|
| | | | Children, adolescents and elderly <ul style="list-style-type: none"> • Diet in pregnancy – nutritional requirements and balanced diet plan • Anemia in pregnancy – diagnosis, diet for anemic pregnant women, iron & folic acid supplementation and counseling • Nutrition in lactation – nutritional requirements, diet for lactating mothers, complementary feeding/ weaning | | |
| VIII | 6 (T) | Classify and describe the common nutritional deficiency disorders and identify nurses' role in assessment, management and prevention | Nutritional deficiency disorders <ul style="list-style-type: none"> • Protein energy malnutrition – magnitude of the problem, causes, classification, signs & symptoms, Severe acute malnutrition (SAM), management & prevention and nurses' role • Childhood obesity – signs & symptoms, assessment, management & prevention and nurses' role • Vitamin deficiency disorders – vitamin A, B, C & D deficiency disorders – causes, signs & symptoms, management & prevention and nurses' role • Mineral deficiency diseases – iron, iodine and calcium deficiencies – causes, signs & symptoms, management & prevention and nurses' role | <ul style="list-style-type: none"> • Lecture cum Discussion • Charts/Slides • Models | <ul style="list-style-type: none"> • Essay • Short answer • Very short answer |
| IX | 4 (T) 7 (L) | Principles of diets in various diseases | Therapeutic diets <ul style="list-style-type: none"> • Definition, Objectives, Principles • Modifications – Consistency, Nutrients, • Feeding techniques. • Diet in Diseases – Obesity, Diabetes Mellitus, CVD, Underweight, Renal diseases, Hepatic disorders Constipation, Diarrhea, Pre and Post-operative period | <ul style="list-style-type: none"> • Lecture cum Discussion • Meal planning • Lab session on preparation of therapeutic diets | <ul style="list-style-type: none"> • Essay • Short answer • Very short answer |
| X | 3 (T) | Describe the rules and preservation of nutrients | Cookery rules and preservation of nutrients <ul style="list-style-type: none"> • Cooking – Methods, Advantages and Disadvantages • Preservation of nutrients • Measures to prevent loss of nutrients during preparation • Safe food handling and Storage of foods • Food preservation • Food additives and food adulteration • Prevention of Food Adulteration Act (PFA) • Food standards | <ul style="list-style-type: none"> • Lecture cum Discussion • Charts/Slides | <ul style="list-style-type: none"> • Essay • Short answer • Very short answer |


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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|---|--|--|--|
| XI | 4 (T) | Explain the methods of nutritional assessment and nutrition education | Nutrition assessment and nutrition education <ul style="list-style-type: none"> Objectives of nutritional assessment Methods of assessment – clinical examination, anthropometry, laboratory & biochemical assessment, assessment of dietary intake including Food frequency questionnaire (FFQ) method Nutrition education – purposes, principles and methods | <ul style="list-style-type: none"> Lecture cum Discussion Demonstration Writing nutritional assessment report | <ul style="list-style-type: none"> Essay Short answer Evaluation of Nutritional assessment report |
| XII | 3 (T) | Describe nutritional problems in India and nutritional programs | National Nutritional Programs and role of nurse <ul style="list-style-type: none"> Nutritional problems in India National nutritional policy <i>National nutritional programs</i> – Vitamin A Supplementation, Anemia Mukh Bharat Program, Integrated Child Development Services (ICDS), Mid-day Meal Scheme (MDMS), National Iodine Deficiency Disorders Control Program (NIDDCP), Weekly Iron Folic Acid Supplementation (WIFS) and others as introduced Role of nurse in every program | <ul style="list-style-type: none"> Lecture cum Discussion | <ul style="list-style-type: none"> Essay Short answer Very short answer |
| XIII | 2 (T) | Discuss the importance of food hygiene and food safety Explain the Acts related to food safety | Food safety <ul style="list-style-type: none"> Definition, Food safety considerations & measures Food safety regulatory measures in India – Relevant Acts Five keys to safer food Food storage, food handling and cooking General principles of food storage of food items (ex. milk, meat) Role of food handlers in food borne diseases Essential steps in safe cooking practices | <ul style="list-style-type: none"> Guided reading on related acts | <ul style="list-style-type: none"> Quiz Short answer |

Food born diseases and food poisoning are dealt in Community Health Nursing I.

NURSING FOUNDATION - II (including Health Assessment Module)

PLACEMENT: II SEMESTER

THEORY: 6 Credits (120 hours)

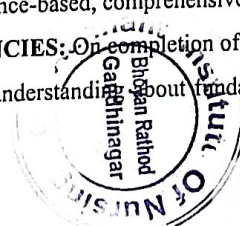
PRACTICUM: Skill Lab: 3 Credits (120 hours), Clinical: 4 Credits (320 hours)

DESCRIPTION: This course is designed to help novice nursing students develop knowledge and competencies required to provide evidence-based, comprehensive basic nursing care for adult patients, using nursing process approach.

COMPETENCIES: On completion of the course, the students will be able to

1. Develop understanding about fundamentals of health assessment and perform health assessment in supervised clinical settings

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2. Demonstrate fundamental skills of assessment, planning, implementation and evaluation of nursing care using Nursing process approach in supervised clinical settings
3. Assess the Nutritional needs of patients and provide relevant care under supervision
4. Identify and meet the hygienic needs of patients
5. Identify and meet the elimination needs of patient
6. Interpret findings of specimen testing applying the knowledge of normal values
7. Promote oxygenation based on identified oxygenation needs of patients under supervision
8. Review the concept of fluid, electrolyte balance integrating the knowledge of applied physiology
9. Apply the knowledge of the principles, routes, effects of administration of medications in administering medication
10. Calculate conversions of drugs and dosages within and between systems of measurements
11. Demonstrate knowledge and understanding in caring for patients with altered functioning of sense organs and unconsciousness
12. Explain loss, death and grief
13. Describe sexual development and sexuality
14. Identify stressors and stress adaptation modes
15. Integrate the knowledge of culture and cultural differences in meeting the spiritual needs
16. Explain the introductory concepts relevant to models of health and illness in patient care

***Mandatory Module used in Teaching/Learning:**

Health Assessment Module: 40 hours

COURSE OUTLINE

T – Theory, SL – Skill Lab

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|-------------------|---|---|---|--|
| I | 20 (T) 20 (SL) | Describe the purpose and process of health assessment and perform assessment under supervised clinical practice | Health Assessment <ul style="list-style-type: none"> • Interview techniques • Observation techniques • Purposes of health assessment • Process of Health assessment <ul style="list-style-type: none"> o Health history o Physical examination: <ul style="list-style-type: none"> ▪ Methods: Inspection, Palpation, Percussion, Auscultation, Olfaction ▪ Preparation for examination: patient and unit ▪ General assessment ▪ Assessment of each body system ▪ Documenting health assessment findings | <ul style="list-style-type: none"> • Modular Learning • *Health Assessment Module • Lecture cum Discussion • Demonstration | <ul style="list-style-type: none"> • Essay • Short answer • Objective type • OSCE |
| II | 13 (T) 8 (SL) | Describe assessment, planning, implementation and evaluation of nursing care using Nursing process | The Nursing Process <ul style="list-style-type: none"> • Critical Thinking Competencies, Attitudes for Critical Thinking, Levels of critical thinking in Nursing • Nursing Process Overview | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Supervised Clinical Practice | <ul style="list-style-type: none"> • Essay • Short answer • Objective type • Evaluation of care plan |

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|-----------------|---|---|--|---|
| | | approach | <ul style="list-style-type: none"> ○ Assessment <ul style="list-style-type: none"> ▪ Collection of Data: Types, Sources, Methods ▪ Organizing Data ▪ Validating Data ▪ Documenting Data ○ Nursing Diagnosis <ul style="list-style-type: none"> ▪ Identification of client problems, risks and strengths ▪ Nursing diagnosis statement – parts, Types, Formulating, Guidelines for formulating Nursing Diagnosis ▪ NANDA approved diagnoses ▪ Difference between medical and nursing diagnosis ○ Planning <ul style="list-style-type: none"> ▪ Types of planning ▪ Establishing Priorities ▪ Establishing Goals and Expected Outcomes – Purposes, types, guidelines, Components of goals and outcome statements ▪ Types of Nursing Interventions, Selecting interventions: Protocols and Standing Orders ▪ Introduction to Nursing Intervention Classification and Nursing Outcome Classification ▪ Guidelines for writing care plan ○ Implementation <ul style="list-style-type: none"> ▪ Process of Implementing the plan of care ▪ Types of care – Direct and Indirect ○ Evaluation <ul style="list-style-type: none"> ▪ Evaluation Process, Documentation and Reporting | | |
| III | 5 (T) 5 (SL) | Identify and meet the Nutritional needs of patients | Nutritional needs <ul style="list-style-type: none"> • Importance • Factors affecting nutritional needs • Assessment of nutritional status • Review: special diets – Solid, Liquid, Soft • Review on therapeutic diets • Care of patient with Dysphagia, | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Exercise • Supervised Clinical practice | <ul style="list-style-type: none"> • Essay • Short answer • Objective type • Evaluation of nutritional assessment & diet planning |



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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|-------------------|--|--|--|---|
| | | | Anorexia, Nausea, Vomiting • Meeting Nutritional needs: Principles, equipment, procedure, indications <ul style="list-style-type: none"> ○ Oral ○ Enteral: Nasogastric/ Orogastric ○ Introduction to other enteral feeds – types, indications, Gastrostomy, Jejunostomy ○ Parenteral – TPN (Total Parenteral Nutrition) | | |
| IV | 5 (T) 15 (SL) | Identify and meet the hygienic needs of patients | Hygiene <ul style="list-style-type: none"> • Factors Influencing Hygienic Practice • Hygienic care: Indications and purposes, effects of neglected care <ul style="list-style-type: none"> ○ Care of the Skin – (Bath, feet and nail, Hair Care) ○ Care of pressure points ○ Assessment of Pressure Ulcers using Braden Scale and Norton Scale ○ Pressure ulcers – causes, stages and manifestations, care and prevention ○ Perineal care/Meatal care ○ Oral care, Care of Eyes, Ears and Nose including assistive devices (eye glasses, contact lens, dentures, hearing aid) | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration | <ul style="list-style-type: none"> • Essay • Short answer • Objective type • OSCE |
| V | 10 (T) 10 (SL) | Identify and meet the elimination needs of patient | Elimination needs <ul style="list-style-type: none"> • Urinary Elimination <ul style="list-style-type: none"> ○ Review of Physiology of Urine Elimination, Composition and characteristics of urine ○ Factors Influencing Urination ○ Alteration in Urinary Elimination ○ Facilitating urine elimination: assessment, types, equipment, procedures and special considerations ○ Providing urinal/bed pan ○ Care of patients with <ul style="list-style-type: none"> ▪ Condom drainage ▪ Intermittent Catheterization ▪ Indwelling Urinary catheter and urinary drainage ▪ Urinary diversions ▪ Bladder irrigation | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration | <ul style="list-style-type: none"> • Essay • Short answer • Objective type • OSCE |

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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|-------------------|---|--|---|---|
| | | | <ul style="list-style-type: none"> Bowel Elimination <ul style="list-style-type: none"> Review of Physiology of Bowel Elimination, Composition and characteristics of feces Factors affecting Bowel elimination Alteration in Bowel Elimination Facilitating bowel elimination: Assessment, equipment, procedures <ul style="list-style-type: none"> Enemas Suppository Bowel wash Digital Evacuation of impacted feces Care of patients with Ostomies (Bowel Diversion Procedures) | | |
| VI | 3 (T) 4 (SL) | <p>Explain various types of specimens and identify normal values of tests</p> <p>Develop skill in specimen collection, handling and transport</p> | <p>Diagnostic testing</p> <ul style="list-style-type: none"> Phases of diagnostic testing (pre-test, intra-test & post-test) in Common investigations and clinical implications <ul style="list-style-type: none"> Complete Blood Count Serum Electrolytes LFT Lipid/Lipoprotein profile Serum Glucose – AC, PC, HbA1c Monitoring Capillary Blood Glucose (Glucometer Random Blood Sugar – GRBS) Stool Routine Examination Urine Testing – Albumin, Acetone, pH, Specific Gravity Urine Culture, Routine, Timed Urine Specimen Sputum culture Overview of Radiologic & Endoscopic Procedures | <ul style="list-style-type: none"> Lecture Discussion Demonstration | <ul style="list-style-type: none"> Essay Short answer Objective type |
| VII | 11 (T) 10 (SL) | Assess patients for oxygenation needs, promote oxygenation and provide care during oxygen therapy | <p>Oxygenation needs</p> <ul style="list-style-type: none"> Review of Cardiovascular and Respiratory Physiology Factors affecting respiratory functioning Alterations in Respiratory Functioning <ul style="list-style-type: none"> Conditions affecting <ul style="list-style-type: none"> Airway Movement of air | <ul style="list-style-type: none"> Lecture Discussion Demonstration & Re-demonstration | <ul style="list-style-type: none"> Essay Short answer Objective type |

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------------|--|---|--|---|
| | | | <ul style="list-style-type: none"> ○ Diffusion ○ Oxygen transport • Alterations in oxygenation • Nursing interventions to promote oxygenation: assessment, types, equipment used & procedure ○ Maintenance of patent airway ○ Oxygen administration ○ Suctioning – oral, tracheal ○ Chest physiotherapy – Percussion, Vibration & Postural drainage ○ Care of Chest drainage – principles & purposes ○ Pulse Oximetry – Factors affecting measurement of oxygen saturation using pulse oximeter, Interpretation • Restorative & continuing care ○ Hydration ○ Humidification ○ Coughing techniques ○ Breathing exercises ○ Incentive spirometry | | |
| VIII | 5 (T) 10 (SL) | Describe the concept of fluid, electrolyte balance | Fluid, Electrolyte, and Acid – Base Balances <ul style="list-style-type: none"> • Review of Physiological Regulation of Fluid, Electrolyte and Acid-Base Balances • Factors Affecting Fluid, Electrolyte and Acid-Base Balances • Disturbances in fluid volume: <ul style="list-style-type: none"> ○ Deficit <ul style="list-style-type: none"> ▪ Hypovolemia ▪ Dehydration ○ Excess <ul style="list-style-type: none"> ▪ Fluid overload ▪ Edema • Electrolyte imbalances (hypo and hyper) <ul style="list-style-type: none"> ○ Acid-base imbalances <ul style="list-style-type: none"> ▪ Metabolic – acidosis & alkalosis ▪ Respiratory – acidosis & alkalosis ○ Intravenous therapy | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration | <ul style="list-style-type: none"> • Essay • Short answer • Objective type • Problem solving – calculations |

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|-------------------|--|--|---|---|
| | | | <ul style="list-style-type: none"> Peripheral venipuncture sites Types of IV fluids Calculation for making IV fluid plan Complications of IV fluid therapy Measuring fluid intake and output Administering Blood and Blood components Restricting fluid intake Enhancing Fluid intake | | |
| IX | 20 (T) 22 (SL) | <p>Explain the principles, routes, effects of administration of medications</p> <p>Calculate conversions of drugs and dosages within and between systems of measurements</p> <p>Administer oral and topical medication and document accurately under supervision</p> | <p>Administration of Medications</p> <ul style="list-style-type: none"> Introduction – Definition of Medication, Administration of Medication, Drug Nomenclature, Effects of Drugs, Forms of Medications, Purposes, Pharmacodynamics and Pharmacokinetics Factors influencing Medication Action Medication orders and Prescriptions Systems of measurement Medication dose calculation Principles, 10 rights of Medication Administration Errors in Medication administration Routes of administration Storage and maintenance of drugs and Nurses responsibility Terminologies and abbreviations used in prescriptions and medications orders Developmental considerations Oral, Sublingual and Buccal routes: Equipment, procedure Introduction to Parenteral Administration of Drugs – Intramuscular, Intravenous, Subcutaneous, Intradermal: Location of site, Advantages and disadvantages of the specific sites, Indication and contraindications for the different routes and sites. Equipment – Syringes & needles, cannulas, Infusion sets – parts, types, sizes Types of vials and ampoules, Preparing Injectable medicines from vials and ampoules Care of equipment: decontamination and disposal of syringes, needles, | <ul style="list-style-type: none"> Lecture Discussion Demonstration & Re-demonstration | <ul style="list-style-type: none"> Essay Short answer Objective type OSCE |



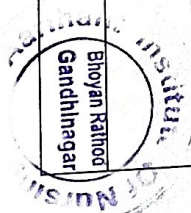
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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|-----------------|---|--|--|---|
| | | | <ul style="list-style-type: none"> infusion sets o Prevention of Needle-Stick Injuries • Topical Administration: Types, purposes, site, equipment, procedure o Application to skin & mucous membrane o Direct application of liquids, Gargle and swabbing the throat o Insertion of Drug into body cavity: Suppository/ medicated packing in rectum/vagina o Instillations: Ear, Eye, Nasal, Bladder, and Rectal o Irrigations: Eye, Ear, Bladder, Vaginal and Rectal o Spraying: Nose and throat • Inhalation: Nasal, oral, endotracheal/tracheal (steam, oxygen and medications) – purposes, types, equipment, procedure, recording and reporting of medications administered • Other Parenteral Routes: Meaning of epidural, intrathecal, intraosseous, intraperitoneal, intra-pleural, intra-arterial | | |
| X | 5 (T) 6 (SL) | Provide care to patients with altered functioning of sense organs and unconsciousness in supervised clinical practice | Sensory needs <ul style="list-style-type: none"> • Introduction • Components of sensory experience – Reception, Perception & Reaction • Arousal Mechanism • Factors affecting sensory function • Assessment of Sensory alterations – sensory deficit, deprivation, overload & sensory poverty • Management <ul style="list-style-type: none"> o Promoting meaningful communication (patients with Aphasia, artificial airway & Visual and Hearing impairment) Care of Unconscious Patients <ul style="list-style-type: none"> • Unconsciousness: Definition, causes & risk factors, pathophysiology, stages of Unconsciousness, Clinical Manifestations • Assessment and nursing management of patient with unconsciousness, complications | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration | <ul style="list-style-type: none"> • Essay • Short answer • Objective type |



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| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|-----------------|---|--|--|---|
| XI | 4 (T) 6 (SL) | Explain loss, death and grief | Care of Terminally ill, death and dying <ul style="list-style-type: none"> Loss – Types Grief, Bereavement & Mourning Types of Grief responses Manifestations of Grief Factors influencing Loss & Grief Responses Theories of Grief & Loss – Kubler Ross 5 Stages of Dying The R Process model (Rando's) Death – Definition, Meaning, Types (Brain & Circulatory Deaths) Signs of Impending Death Dying patient's Bill of Rights Care of Dying Patient Physiological changes occurring after Death Death Declaration, Certification Autopsy Embalming Last office/Death Care Counseling & supporting grieving relatives Placing body in the Mortuary Releasing body from Mortuary Overview – Medico-legal Cases, Advance directives, DNI/DNR, Organ Donation, Euthanasia | <ul style="list-style-type: none"> Lecture Discussion Case discussions Death care/last office | <ul style="list-style-type: none"> Essay Short answer Objective type |
| | | | PSYCHOSOCIAL NEEDS (A-D) | | |
| XII | 3 (T) | Develop basic understanding of self-concept | A. Self-concept <ul style="list-style-type: none"> Introduction Components (Personal Identity, Body Image, Role Performance, Self Esteem) Factors affecting Self Concept Nursing Management | <ul style="list-style-type: none"> Lecture Discussion Demonstration Case Discussion/ Role play | <ul style="list-style-type: none"> Essay Short answer Objective type |
| XIII | 2 (T) | Describe sexual development and sexuality | B. Sexuality <ul style="list-style-type: none"> Sexual development throughout life Sexual health Sexual orientation Factors affecting sexuality | <ul style="list-style-type: none"> Lecture Discussion | <ul style="list-style-type: none"> Essay Short answer Objective type |

| Unit | Time (Hrs) | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|-----------------|--|---|---|---|
| | | | <ul style="list-style-type: none"> Prevention of STIs, unwanted pregnancy, avoiding sexual harassment and abuse Dealing with inappropriate sexual behavior | | |
| XIV | 2 (T) 4 (SL) | Describe stress and adaptation | C. Stress and Adaptation – Introductory concepts <ul style="list-style-type: none"> Introduction Sources, Effects, Indicators & Types of Stress Types of stressors Stress Adaptation – General Adaptation Syndrome (GAS), Local Adaptation Syndrome (LAS) Manifestation of stress – Physical & psychological Coping strategies/ Mechanisms Stress Management <ul style="list-style-type: none"> Assist with coping and adaptation Creating therapeutic environment Recreational and diversion therapies | <ul style="list-style-type: none"> Lecture Discussion | <ul style="list-style-type: none"> Essay Short answer Objective type |
| XV | 6 (T) | Explain culture and cultural norms Integrate cultural differences and spiritual needs in providing care to patients under supervision | D. Concepts of Cultural Diversity and Spirituality <ul style="list-style-type: none"> Cultural diversity <ul style="list-style-type: none"> Cultural Concepts – Culture, Subculture, Multicultural, Diversity, Race, Acculturation, Assimilation Transcultural Nursing Cultural Competence Providing Culturally Responsive Care Spirituality <ul style="list-style-type: none"> Concepts – Faith, Hope, Religion, Spirituality, Spiritual Wellbeing Factors affecting Spirituality Spiritual Problems in Acute, Chronic, Terminal illnesses & Near-Death Experience Dealing with Spiritual Distress/Problems | <ul style="list-style-type: none"> Lecture Discussion | <ul style="list-style-type: none"> Essay Short answer Objective type |
| XVI | 6 (T) | Explain the significance of nursing theories | Nursing Theories: Introduction <ul style="list-style-type: none"> Meaning & Definition, Purposes, Types of theories with examples, Overview of selected nursing theories – Nightingale, Orem, Roy Use of theories in nursing practice | <ul style="list-style-type: none"> Lecture Discussion | <ul style="list-style-type: none"> Essay Short answer Objective type |

Shyama Ratna
Gandhinagar

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CLINICAL PRACTICUM

Clinical: 4 Credits (320 hours)

PRACTICE COMPETENCIES: On completion of the course, the student will be able to

1. Perform health assessment of each body system
2. Develop skills in assessment, planning, implementation and evaluation of nursing care using Nursing process approach
3. Identify and meet the Nutritional needs of patients
4. Implement basic nursing techniques in meeting hygienic needs of patients
5. Plan and Implement care to meet the elimination needs of patient
6. Develop skills in instructing and collecting samples for investigation.
7. Perform simple lab tests and analyze & interpret common diagnostic values
8. Identify patients with impaired oxygenation and demonstrate skill in caring for patients with impaired oxygenation
9. Identify and demonstrate skill in caring for patients with fluid, electrolyte and acid – base imbalances
10. Assess, plan, implement & evaluate the basic care needs of patients with altered functioning of sense organs and unconsciousness
11. Care for terminally ill and dying patients

SKILL LAB

Use of Mannequins and Simulators

| S.No. | Competencies | Mode of Teaching |
|-------|--|--|
| 1. | Health Assessment | Standardized Patient |
| 2. | Nutritional Assessment | Standardized Patient |
| 3. | Sponge bath, oral hygiene, perineal care | Mannequin |
| 4. | Nasogastric tube feeding | Trainer/ Simulator |
| 5. | Providing bed pan & urinal | Mannequin |
| 6. | Catheter care | Catheterization Trainer |
| 7. | Bowel wash, enema, insertion of suppository | Simulator/ Mannequin |
| 8. | Oxygen administration – face mask, venture mask, nasal prongs | Mannequin |
| 9. | Administration of medication through Parenteral route – IM, SC, ID, IV | IM injection trainer, ID injection trainer, IV arm (Trainer) |
| 10. | Last Office | Mannequin |

CLINICAL POSTINGS – General Medical/Surgical Wards

(16 weeks × 20 hours per week = 320 hours)

| Clinical Unit | Duration (Weeks) | Learning Outcomes | Procedural Competencies/ Clinical Skills (Supervised Clinical Practice) | Clinical Requirements | Assessment Methods |
|---------------------------------|------------------|---|--|--|---|
| General Medical/ Surgical wards | 3 | Perform health assessment of each body system <i>(Circular stamp: Dr. Anurag Singh, Head of Department, PGI, Chandigarh)</i> | Health Assessment <ul style="list-style-type: none"> • Nursing/Health history taking • Perform physical examination: <ul style="list-style-type: none"> ○ General | <ul style="list-style-type: none"> • History Taking – 2 • Physical examination – 2 | <ul style="list-style-type: none"> • Assessment of clinical skills using checklist • OSCE |

| Clinical Unit | Duration (Weeks) | Learning Outcomes | Procedural Competencies/ Clinical Skills (Supervised Clinical Practice) | Clinical Requirements | Assessment Methods |
|---------------|------------------|---|--|--|---|
| | | | <ul style="list-style-type: none"> Body systems Use various methods of physical examination – Inspection, Palpation, Percussion, Auscultation, Olfaction Identification of system wise deviations Documentation of findings | | |
| | 1 | Develop skills in assessment, planning, implementation and evaluation of nursing care using Nursing process approach | The Nursing Process <ul style="list-style-type: none"> Prepare Nursing care plan for the patient based on the given case scenario | <ul style="list-style-type: none"> Nursing process – 1 | <ul style="list-style-type: none"> Evaluation of Nursing process with criteria |
| | 2 | Identify and meet the Nutritional needs of patients Implement basic nursing techniques in meeting hygienic needs of patients | Nutritional needs, Elimination needs & Diagnostic testing <i>Nutritional needs</i> <ul style="list-style-type: none"> Nutritional Assessment Preparation of Nasogastric tube feed Nasogastric tube feeding <i>Hygiene</i> <ul style="list-style-type: none"> Care of Skin & Hair: <ul style="list-style-type: none"> Sponge Bath/ Bed bath Care of pressure points & back massage Pressure sore risk assessment using Braden/Norton scale <ul style="list-style-type: none"> Hair wash Pediculosis treatment Oral Hygiene Perineal Hygiene Catheter care | <ul style="list-style-type: none"> Nutritional Assessment and Clinical Presentation – 1 Pressure sore assessment – 1 | <ul style="list-style-type: none"> Assessment of clinical skills using checklist OSCE |
| | 2 | Plan and Implement care to meet the elimination needs of patient Develop skills in instructing and collecting samples for investigation. | Elimination needs <ul style="list-style-type: none"> Providing <ul style="list-style-type: none"> Urinal Bedpan Insertion of Suppository Enema Urinary Catheter care Care of urinary drainage Diagnostic testing | <ul style="list-style-type: none"> Clinical Presentation on Care of patient with Constipation – 1 Lab values – inter-pretation | <ul style="list-style-type: none"> Assessment of clinical skills using checklist OSCE |

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| Clinical Unit | Duration (Weeks) | Learning Outcomes | Procedural Competencies/ Clinical Skills (Supervised Clinical Practice) | Clinical Requirements | Assessment Methods |
|---------------|------------------|---|---|-----------------------|--|
| | | Perform simple lab tests and analyze & interpret common diagnostic values | <ul style="list-style-type: none"> Specimen Collection <ul style="list-style-type: none"> Urine routine and culture Stool routine Sputum Culture Perform simple Lab Tests using reagent strips <ul style="list-style-type: none"> Urine – Glucose, Albumin, Acetone, pH, Specific gravity Blood – GRBS Monitoring | | |
| | 3 | <p>Identify patients with impaired oxygenation and demonstrate skill in caring for patients with impaired oxygenation</p> <p>Identify and demonstrate skill in caring for patients with fluid, electrolyte and acid – base imbalances</p> | <p>Oxygenation needs, Fluid, Electrolyte, and Acid – Base Balances</p> <p><i>Oxygenation needs</i></p> <ul style="list-style-type: none"> Oxygen administration methods <ul style="list-style-type: none"> Nasal Prongs Face Mask/Venturi Mask Steam inhalation Chest Physiotherapy Deep Breathing & Coughing Exercises Oral Suctioning <p><i>Fluid, Electrolyte, and Acid – Base Balances</i></p> <ul style="list-style-type: none"> Maintaining intake output chart Identify & report complications of IV therapy Observe Blood & Blood Component therapy Identify & Report Complications of Blood & Blood Component therapy | | <ul style="list-style-type: none"> Assessment of clinical skills using checklist OSCE Assessment of clinical skills using checklist OSCE |
| | 3 | <p>Explain the principles, routes, effects of administration of medications</p> <p>Calculate conversions of drugs and dosages within and between systems of Measurements</p> <p>Administer drugs by the following routes- Oral, Intradermal</p> | <p>Administration of Medications</p> <ul style="list-style-type: none"> Calculate Drug Dosages Preparation of lotions & solutions Administer Medications <ul style="list-style-type: none"> Oral Topical Inhalations Parenteral <ul style="list-style-type: none"> Intradermal Subcutaneous | | <ul style="list-style-type: none"> Assessment of clinical skills using checklist OSCE |

| Clinical Unit | Duration (Weeks) | Learning Outcomes | Procedural Competencies/ Clinical Skills (Supervised Clinical Practice) | Clinical Requirements | Assessment Methods |
|---------------|------------------|---|--|--|--|
| | | Subcutaneous, Intramuscular, Intra Venous Topical, inhalation | <ul style="list-style-type: none"> -Intramuscular Instillations o Eye, Ear, Nose –instillation of medicated drops, nasal sprays, irrigations | | |
| | 2 | <p>Assess, plan, implement & evaluate the basic care needs of patients with altered functioning of sense organs and unconsciousness</p> <p>Care for terminally ill and dying patients</p> | <p>Sensory Needs and Care of Unconscious patients, Care of Terminally ill, death and dying</p> <p><i>Sensory Needs and Care of Unconscious patients</i></p> <ul style="list-style-type: none"> Assessment of Level of Consciousness using Glasgow Coma Scale <i>Terminally ill, death and dying</i> Death Care | <ul style="list-style-type: none"> Nursing rounds on care of patient with altered sensorium | <ul style="list-style-type: none"> Assessment of clinical skills using checklist OSCE Assessment of clinical skills using checklist |

HEALTH/NURSING INFORMATICS AND TECHNOLOGY

PLACEMENT: II SEMESTER

THEORY: 2 Credits (40 hours)

PRACTICAL/LAB: 1 Credit (40 hours)

DESCRIPTION: This course is designed to equip novice nursing students with knowledge and skills necessary to deliver efficient informatics-led health care services.

COMPETENCIES: On completion of the course, the students will be able to

1. Develop a basic understanding of computer application in patient care and nursing practice.
2. Apply the knowledge of computer and information technology in patient care and nursing education, practice, administration and research.
3. Describe the principles of health informatics and its use in developing efficient healthcare.
4. Demonstrate the use of information system in healthcare for patient care and utilization of nursing data.
5. Demonstrate the knowledge of using Electronic Health Records (EHR) system in clinical practice.
6. Apply the knowledge of interoperability standards in clinical setting.
7. Apply the knowledge of information and communication technology in public health promotion.
8. Utilize the functionalities of Nursing Information System (NIS) system in nursing.
9. Demonstrate the skills of using data in management of health care.
10. Apply the knowledge of the principles of digital ethical and legal issues in clinical practice.
11. Utilize evidence-based practices in informatics and technology for providing quality patient care.
12. Update and utilize evidence-based practices in nursing education, administration, and practice.



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COURSE OUTLINE

T – Theory, P/L – Lab

| Unit | Time (Hrs) | | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|-----|---|---|---|--|
| | T | P/L | | | | |
| I | 10 | 15 | Describe the importance of computer and technology in patient care and nursing practice | Introduction to computer applications for patient care delivery system and nursing practice <ul style="list-style-type: none"> • Use of computers in teaching, learning, research and nursing practice | <ul style="list-style-type: none"> • Lecture • Discussion • Practice session • Supervised clinical practice on EHR use • Participate in data analysis using statistical package with statistician | (T) <ul style="list-style-type: none"> • Short answer • Objective type • Visit reports • Assessment of assignments |
| | | | Demonstrate the use of computer and technology in patient care, nursing education, practice, administration and research. | <ul style="list-style-type: none"> • Windows, MS office: Word, Excel, Power Point • Internet • Literature search • Statistical packages • Hospital management information system | | (P) <ul style="list-style-type: none"> • Assessment of skills using checklist |
| II | 4 | 5 | Describe the principles of health informatics | Principles of Health Informatics <ul style="list-style-type: none"> • Health informatics – needs, objectives and limitations • Use of data, information and knowledge for more effective healthcare and better health | <ul style="list-style-type: none"> • Lecture • Discussion • Practical session • Work in groups with health informatics team in a hospital to extract nursing data and prepare a report | (T) <ul style="list-style-type: none"> • Essay • Short answer • Objective type questions • Assessment of report |
| | | | Explain the ways data, knowledge and information can be used for effective healthcare | | | |
| III | 3 | 5 | Describe the concepts of information system in health | Information Systems in Healthcare <ul style="list-style-type: none"> • Introduction to the role and architecture of information systems in modern healthcare environments • Clinical Information System (CIS)/Hospital information System (HIS) | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Practical session • Work in groups with nurse leaders to understand the hospital information system | (T) <ul style="list-style-type: none"> • Essay • Short answer • Objective type |
| | | | Demonstrate the use of health information system in hospital setting | | | |
| IV | 4 | 4 | Explain the use of electronic health records in nursing practice | Shared Care & Electronic Health Records <ul style="list-style-type: none"> • Challenges of capturing rich patient histories in a computable form • Latest global developments and standards to enable lifelong electronic health records to be integrated from disparate systems | <ul style="list-style-type: none"> • Lecture • Discussion • Practice on Simulated EHR system • Practical session • Visit to health informatics department of a hospital to understand the use of EHR in nursing practice | (T) <ul style="list-style-type: none"> • Essay • Short answer • Objective type (P) <ul style="list-style-type: none"> • Assessment of skills using checklist |
| | | | Describe the latest trend in electronic health records standards and interoperability | | | |

| Unit | Time (Hrs) | | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|-----|--|---|--|---|
| | T | P/L | | | | |
| | | | | | <ul style="list-style-type: none"> • Prepare a report on current EHR standards in Indian setting | |
| V | 3 | | Describe the advantages and limitations of health informatics in maintaining patient safety and risk management | Patient Safety & Clinical Risk <ul style="list-style-type: none"> • Relationship between patient safety and informatics • Function and application of the risk management process | <ul style="list-style-type: none"> • Lecture • Discussion | (T) <ul style="list-style-type: none"> • Essay • Short answer • Objective type |
| VI | 3 | 6 | Explain the importance of knowledge management Describe the standardized languages used in health informatics | Clinical Knowledge & Decision Making <ul style="list-style-type: none"> • Role of knowledge management in improving decision-making in both the clinical and policy contexts • Systematized Nomenclature of Medicine, Clinical Terms, SNOMED CT to ICD-10-CM Map, standardized nursing terminologies (NANDA, NOC), Omaha system. | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration • Practical session • Work in groups to prepare a report on standardized languages used in health informatics. • Visit health informatics department to understand the standardized languages used in hospital setting | (T) <ul style="list-style-type: none"> • Essay • Short answer • Objective type |
| VII | 3 | | Explain the use of information and communication technology in patient care Explain the application of public health informatics | eHealth: Patients and the Internet <ul style="list-style-type: none"> • Use of information and communication technology to improve or enable personal and public healthcare • Introduction to public health informatics and role of nurses | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration | <ul style="list-style-type: none"> • Essay • Short answer • Objective type • Practical exam |
| VIII | 3 | 5 | Describe the functions of nursing information system Explain the use of healthcare data in management of health care organization | Using Information in Healthcare Management <ul style="list-style-type: none"> • Components of Nursing Information system(NIS) • Evaluation, analysis and presentation of healthcare data to inform decisions in the management of health-care organizations | <ul style="list-style-type: none"> • Lecture • Discussion • Demonstration on simulated NIS software • Visit to health informatics department of the hospital to understand use of healthcare data in decision making | (T) <ul style="list-style-type: none"> • Essay • Short answer • Objective type |
| IX | 4 | | Describe the ethical and legal issues in healthcare informatics Explains the ethical and legal issues | Information Law & Governance in Clinical Practice <ul style="list-style-type: none"> • Ethical-legal issues pertaining to healthcare information in contemporary clinical practice • Ethical-legal issues related to | <ul style="list-style-type: none"> • Lecture • Discussion • Case discussion • Role play | (T) <ul style="list-style-type: none"> • Essay • Short answer • Objective type |



| Unit | Time (Hrs) | | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|-----|---|--|---|---|
| | T | P/L | | | | |
| | | | related to nursing informatics | digital health applied to nursing | | |
| X | 3 | | Explain the relevance of evidence-based practices in providing quality healthcare | Healthcare Quality & Evidence Based Practice <ul style="list-style-type: none"> Use of scientific evidence in improving the quality of healthcare and technical and professional informatics standards | <ul style="list-style-type: none"> Lecture Discussion Case study | (T) <ul style="list-style-type: none"> Essay Short answer Objective type |

SKILLS

- Utilize computer in improving various aspects of nursing practice.
- Use technology in patient care and professional advancement.
- Use data in professional development and efficient patient care.
- Use information system in providing quality patient care.
- Use the information system to extract nursing data.

Develop skill in conducting literature review.

APPLIED MICROBIOLOGY AND INFECTION CONTROL INCLUDING SAFETY

PLACEMENT: III SEMESTER

THEORY: 2 Credits (40 hours)

PRACTICAL: 1 Credit (40 hours) (Lab/Experiential Learning – L/E)

SECTION A: APPLIED MICROBIOLOGY

THEORY: 20 hours

PRACTICAL: 20 hours (Lab/Experiential Learning – L/E)

DESCRIPTION: This course is designed to enable students to acquire understanding of fundamentals of Microbiology, compare and contrast different microbes and comprehend the means of transmission and control of spread by various microorganisms. It also provides opportunities for practicing infection control measures in hospital and community settings.

COMPETENCIES: On completion of the course, the students will be able to:

- Identify the ubiquity and diversity of microorganisms in the human body and the environment.
- Classify and explain the morphology and growth of microbes.
- Identify various types of microorganisms.
- Explore mechanisms by which microorganisms cause disease.
- Develop understanding of how the human immune system counteracts infection by specific and non-specific mechanisms.
- Apply the principles of preparation and use of vaccines in immunization.
- Identify the contribution of the microbiologist and the microbiology laboratory to the diagnosis of infection.



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COURSE OUTLINE

T – Theory, L/E – Lab/Experiential Learning

| Unit | Time (Hrs) | | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|----------|---|--|---|--|
| | T | P | | | | |
| I | 3 | | Explain concepts and principles of microbiology and its importance in nursing | Introduction: <ul style="list-style-type: none"> Importance and relevance to nursing Historical perspective Concepts and terminology Principles of microbiology | <ul style="list-style-type: none"> Lecture cum Discussion | <ul style="list-style-type: none"> Short answer Objective type |
| II | 10 | 10 (L/E) | Describe structure, classification morphology and growth of bacteria Identify Microorganisms | General characteristics of Microbes: <ul style="list-style-type: none"> Structure and classification of Microbes Morphological types Size and form of bacteria Motility Colonization Growth and nutrition of microbes Temperature Moisture Blood and body fluids Laboratory methods for Identification of Microorganisms Types of Staining – simple, differential (Gram's, AFB), special – capsular staining (negative), spore, LPCB, KOH mount. Culture and media preparation – solid and liquid. Types of media – semi synthetic, synthetic, enriched, enrichment, selective and differential media. Pure culture techniques – tube dilution, pour, spread, streak plate. Anaerobic cultivation of bacteria | <ul style="list-style-type: none"> Lecture cum Discussion Demonstration Experiential Learning through visual | <ul style="list-style-type: none"> Short answer Objective type |
| III | 4 | 6 (L/E) | Describe the different disease producing organisms | Pathogenic organisms <ul style="list-style-type: none"> Micro-organisms: Cocci – gram positive and gram negative; Bacilli – gram positive and gram negative Viruses Fungi: Superficial and Deep mycoses Parasites Rodents & Vectors <ul style="list-style-type: none"> Characteristics, Source, portal of entry, transmission of infection, Identification of disease producing micro-organisms | <ul style="list-style-type: none"> Lecture cum Discussion Demonstration Experiential learning through visual | <ul style="list-style-type: none"> Short answer Objective type |
| | 3 | 4 (L/E) | Explain the concepts of | Immunity | <ul style="list-style-type: none"> Lecture | <ul style="list-style-type: none"> Short answer Objective |

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| Unit | Time (Hrs) | | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|---|--|---|--|--|
| | T | P | | | | |
| | | | immunity, hyper sensitivity and immunization | <ul style="list-style-type: none"> • Immunity: Types, classification • Antigen and antibody reaction • Hypersensitivity reactions • Serological tests • Immunoglobulins: Structure, types & properties • Vaccines: Types & classification, storage and handling, cold chain, Immunization for various diseases • Immunization Schedule | <ul style="list-style-type: none"> • Discussion • Demonstration • Visit to observe vaccine storage • Clinical practice | type <ul style="list-style-type: none"> • Visit report |

SECTION B: INFECTION CONTROL & SAFETY**THEORY:** 20 hours**PRACTICAL/LAB:** 20 hours (Lab/Experiential Learning – L/E)

DESCRIPTION: This course is designed to help students to acquire knowledge and develop competencies required for fundamental patient safety and infection control in delivering patient care. It also focuses on identifying patient safety indicators, preventing and managing hospital acquired infections, and in following universal precautions.

COMPETENCIES: The students will be able to:

1. Develop knowledge and understanding of Hospital acquired Infections (HAI) and effective practices for prevention.
2. Integrate the knowledge of isolation (Barrier and reverse barrier) techniques in implementing various precautions.
3. Demonstrate and practice steps in Hand washing and appropriate use of different types of PPE.
4. Illustrate various disinfection and sterilization methods and techniques.
5. Demonstrate knowledge and skill in specimen collection, handling and transport to optimize the diagnosis for treatment.
6. Incorporate the principles and guidelines of Bio Medical waste management.
7. Apply the principles of Antibiotic stewardship in performing the nurses' role.
8. Identify patient safety indicators and perform the role of nurse in the patient safety audit process.
9. Apply the knowledge of International Patient Safety Goals (IPSG) in the patient care settings.
10. Identify employee safety indicators and risk of occupational hazards.
11. Develop understanding of the various safety protocols and adhere to those protocols.

COURSE OUTLINE**T – Theory, L/E – Lab/Experiential Learning**

| Unit | Time (Hrs) | | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|-------|---|---|---|---|
| | T | P | | | | |
| I | 2 | 2 (E) | Summarize the evidence based and effective patient care practices for the prevention of common healthcare associated infections in the healthcare | HAI (Hospital acquired Infection) <ul style="list-style-type: none"> • Hospital acquired infection • Bundle approach <ul style="list-style-type: none"> - Prevention of Urinary Tract Infection (UTI) - Prevention of Surgical Site Infection (SSI) - Prevention of Ventilator | <ul style="list-style-type: none"> • Lecture & Discussion • Experiential learning | <ul style="list-style-type: none"> • Knowledge assessment • MCQ • Short answer |

| Unit | Time (Hrs) | | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|---|--|---|--|--|
| | T | P | | | | |
| | | | immunity, hyper sensitivity and immunization | <ul style="list-style-type: none"> • Immunity: Types, classification • Antigen and antibody reaction • Hypersensitivity reactions • Serological tests • Immunoglobulins: Structure, types & properties • Vaccines: Types & classification, storage and handling, cold chain, Immunization for various diseases • Immunization Schedule | <ul style="list-style-type: none"> • Discussion • Demonstration • Visit to observe vaccine storage • Clinical practice | type <ul style="list-style-type: none"> • Visit report |

SECTION B: INFECTION CONTROL & SAFETY**THEORY:** 20 hours**PRACTICAL/LAB:** 20 hours (Lab/Experiential Learning – L/E)

DESCRIPTION: This course is designed to help students to acquire knowledge and develop competencies required for fundamental patient safety and infection control in delivering patient care. It also focuses on identifying patient safety indicators, preventing and managing hospital acquired infections, and in following universal precautions.

COMPETENCIES: The students will be able to:

1. Develop knowledge and understanding of Hospital acquired Infections (HAI) and effective practices for prevention.
2. Integrate the knowledge of isolation (Barrier and reverse barrier) techniques in implementing various precautions.
3. Demonstrate and practice steps in Hand washing and appropriate use of different types of PPE.
4. Illustrate various disinfection and sterilization methods and techniques.
5. Demonstrate knowledge and skill in specimen collection, handling and transport to optimize the diagnosis for treatment.
6. Incorporate the principles and guidelines of Bio Medical waste management.
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8. Identify patient safety indicators and perform the role of nurse in the patient safety audit process.
9. Apply the knowledge of International Patient Safety Goals (IPSG) in the patient care settings.
10. Identify employee safety indicators and risk of occupational hazards.
11. Develop understanding of the various safety protocols and adhere to those protocols.

COURSE OUTLINE**T – Theory, L/E – Lab/Experiential Learning**

| Unit | Time (Hrs) | | Learning Outcomes | Content | Teaching/ Learning Activities | Assessment Methods |
|------|------------|-------|---|---|---|---|
| | T | P | | | | |
| I | 2 | 2 (E) | Summarize the evidence based and effective patient care practices for the prevention of common healthcare associated infections in the healthcare | HAI (Hospital acquired Infection) <ul style="list-style-type: none"> • Hospital acquired infection • Bundle approach <ul style="list-style-type: none"> - Prevention of Urinary Tract Infection (UTI) - Prevention of Surgical Site Infection (SSI) - Prevention of Ventilator | <ul style="list-style-type: none"> • Lecture & Discussion • Experiential learning | <ul style="list-style-type: none"> • Knowledge assessment • MCQ • Short answer |



SWARNNIM
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SYLLABUS FOR POST BASIC B.Sc. NURSING

Section - I

PREAMBLE

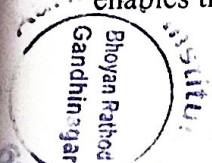
Nursing encompasses autonomous and collaborative care of individuals of all ages, families, groups and communities, sick or well and in all settings. Nursing includes the promotion of health, prevention of illness, and the care of ill, disabled and dying people. Advocacy, promotion of a safe environment, research, participation in shaping health policy and in patient and health systems management, and education are also key nursing roles.

The authority for the practice of nursing is based upon a social contract that delineates professional rights and responsibilities as well as mechanisms for public accountability. In almost all countries, nursing practice is defined and governed by law, and entrance to the profession is regulated at national or state level.

The aim of the nursing community worldwide is for its professionals to ensure quality care for all, while maintaining their credentials, code of ethics, standards, and competencies, and continuing their education. There are a number of educational paths to becoming a professional nurse, which vary greatly worldwide, but all involve extensive study of nursing theory and practice and training in clinical skills.

Nurses care for individuals who are healthy and ill, of all ages and cultural backgrounds, and who have physical, emotional, psychological, intellectual, social, and spiritual needs. The profession combines physical science, social science, nursing theory, and technology in caring for those individuals.

The role of the nurse is evolving, as the mode of delivery of health care services has undergone major changes both locally and internationally in the past decades. In line with international trends, we are developing a health care system that provides lifelong holistic care, promotes health, enhances the quality of life and enables human development. The availability of qualified and competent health care professional is the key to the delivery of quality health care services. As nurses play a pivotal role in the promotion, maintenance and restoration of health, we need to develop competent nurses who are able to take up extended and expanded roles in the delivery of primary, secondary and tertiary care. Thus, apart from the roles of a caregiver, the nurse needs to develop competence to take up the roles of health promoter, educator, counselor, care coordinator, case manager, researcher as well as that the students acquire the essential competence that enables them to fulfill these roles competently and ethically.



Philosophy

We believe the philosophy of Indian nursing council:

Health is a state of well-being that enables a person to lead a psychologically, socially and economically productive life. Health is not a privilege but a right of all the people. Individuals, families and communities have a responsibility towards maintaining their health.

Nursing contributes to the health services in a vital and significant way in the health care delivery system. It recognizes national health goals and is committed to participate in the implementation of National Health policies and programmes. It aims at identifying health needs of the people, planning and providing quality care in collaboration with other health professionals and community groups.

Scope of nursing practice encompasses provision of promotive, preventive, curative and rehabilitative aspects of care to people across their life span in wide variety of health care settings. Practice of nursing is based upon application of basic concepts and principles derived from the physical, biological, behavioral sciences.

Nursing is based on values of caring, and aims to help individuals to attain independence in self-care. It necessitates development of compassion and understanding of human behavior among its practitioners to provide care with respect and dignity and protect the rights of individuals & groups. Undergraduate nursing program at the post basic level is a broad based education within an academic framework, which builds upon the skills and competencies acquired at the diploma level. It is specifically directed to the upgrading of critical thinking skills, competencies & standards required for practice of professional nursing and midwifery as envisaged in National Health Policy 2002.

The teachers have the responsibility to be role models and create learning environment that enables students to acquire inquiry driven, self-directed learning and foster an attitude of lifelong learning. Under graduate nursing education program at the post basic level prepares its graduates to become exemplary citizen by adhering to code of ethics and professional conduct at all times in fulfilling personal, social and professional obligations so as to respond to national aspirations.



Aims

The aim of the undergraduate nursing program at the post basic level is to upgrade the diploma (GNM) nurses to:

- Assume responsibilities as professional, competent nurses and midwives at basic level in providing promotive, preventive, curative, and rehabilitative services.
- Make independent decisions in nursing situations, protect the rights of and facilitate individuals and groups in pursuit of health, function in the hospital, community nursing services, and conduct research studies in the areas of nursing practice. They are also expected to assume the role of teacher, supervisor, and manager in clinical/public health settings.

Objectives

On completion of B.Sc. Nursing (Post-Basic) degree programme the graduates will be able to:

1. Assess health status, identify nursing needs, plan, implement and evaluate nursing care for patients/clients that contribute to health of individuals, families and communities.
2. Demonstrate competency in techniques of nursing based on concepts and principles from selected areas of nursing, physical, biological and behavioral sciences.
3. Participate as members of health team in the promotive, preventive, curative and restorative health care delivery system of the country.
4. Demonstrate skills in communication and interpersonal relationship.
5. Demonstrate leadership qualities and decision-making abilities in various situations.
6. Demonstrate skills in teaching to individuals and groups in community health settings.
7. Demonstrate managerial skills in community health settings.
8. Practice ethical values in their personal and professional life.
9. Participate in research activities and utilize research findings in improving nursing practice.
10. Recognize-the need for continued learning for their personal and professional development.



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SUBJECT AND TEACHING SCHEDULE

COURSE OF STUDY

| S.NO | SUBJECT | HOURS THEORY | HOURS PRACTICAL |
|--|---|-----------------|--------------------|
| | 1 Year | | |
| 1 | Nursing Foundation | 45 | - |
| 2 | Nutrition & dietetics | 30 | 15 |
| 3 | Biochemistry & Biophysics | 60 | - |
| 4 | Psychology | 60 | 15 |
| 5 | Maternal Nursing | 60 | 240 |
| 6 | Child Health Nursing | 60 | 240 |
| 7 | Microbiology | 60 | 30 |
| 8 | Medical & Surgical Nursing | 90 | 270 |
| 9 | English (Qualifying) | 60 | - |
| | Total | 525 | 810 |
| Note: Hindi /Local Language as per the need of institution | | | |
| | 2nd Year | | |
| 10 | Sociology | 60 | - |
| 11 | Community Health Nursing | 60 | 240 |
| 12 | Mental Health Nursing | 60 | 240 |
| 13 | Introduction to Nursing Education | 60 | 75 |
| 14 | Introduction to Nursing Administration | 60 | 180 |
| 15 | Introduction to Nursing Research & Statistics | 45 | 120 |
| 16. | Environmental Science | 50 | - |
| | Total | 395 | 855 |



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SCHEME OF EXAMINATION

| Paper | Subject | Duration | Int. Asst | Ext. Asst | Total Marks |
|------------------|---|----------|-----------|-----------|-------------|
| Theory | 1st Year | | | | |
| 1 | Nursing Foundation | 2 | 15 | 35 | 50 |
| 2 | Nutrition & Dietetics | 2 | 15 | 35 | 50 |
| 3 | Biochemistry & Biophysics | 3 | 25 | 75 | 100 |
| 4 | Psychology | 3 | 25 | 75 | 100 |
| 5 | Maternal Nursing | 3 | 25 | 75 | 100 |
| 6 | Child Health Nursing | 3 | 25 | 75 | 100 |
| 7 | Microbiology | 3 | 25 | 75 | 100 |
| 8 | Medical & Surgical Nursing | 3 | 25 | 75 | 100 |
| 9 | English (Qualifying)* | 3 | 25 | 75 | 100 |
| | Practical | | 50 | 50 | 100 |
| 1 | Medical & Surgical Nursing | | 50 | 50 | 100 |
| 2 | Maternal Nursing | | 50 | 50 | 100 |
| 3 | Child Health Nursing | | | | |
| | 2nd Year | | | | |
| | | 3 | 25 | 75 | 100 |
| 10 | Sociology | 3 | 25 | 75 | 100 |
| 11 | Community Health Nursing | 3 | 25 | 75 | 100 |
| 12 | Mental Health Nursing | 3 | 25 | 75 | 100 |
| 13 | Introduction To Nursing Education | 3 | 25 | 75 | 100 |
| 14 | Introduction To Nursing Administration | 3 | 25 | 75 | 100 |
| 15 | Introduction To Nursing Research & Statistics** | 2 | 50 | 50 | 100 |
| 16. | Environmental science** | 2 | 25 | 75 | 100 |
| Practical | | | | | |
| 1 | Community Health Nursing | 3 | 50 | 50 | 100 |
| 2 | Mental Health Nursing | 3 | 50 | 50 | 100 |

Note: * Qualifying Examination

** College Examination (not University Examination)

N.B:

- Teaching of Anatomy, Physiology, Pharmacology and Pathology will be integrated with clinical subjects
- A minimum of 80% Attendance in theory and Practical in each subject is essential for appearing in the examination.
- 100% attendance in practical in each clinical area is essential before award of degree.
- 50% of minimum marks in each theory and practical paper separately is required for passing.
- A candidate has to secure minimum of 33% in qualifying subject for passing.



II YEAR
SOCIOLOGY

Placement: Second Year Time

Allotted :Theory -60 hrs

COURSE DESCRIPTION

This course it reorient students to sociology related to community and social institution in India and its relationship with health, illness and nursing.

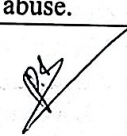
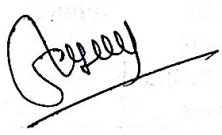
OBJECTIVES

At the end of the course, the student will

1. Describe sociological concepts that are applicable to nursing.
2. Determine role of sociology in nursing as related to social institutions in India
3. Develop positive attitudes towards individual, family and community.

| UNIT NO | HOURS | Learning Objective | COURSE CONTENT | TEACHING LEARNING ACTIVITIES | ASSESSMENT |
|---------|-------|--|--|--|---|
| I | 1 | Describe the importance of sociology in Nursing | Introduction Importance of study of sociology in nursing, relationship of anthropology, sociology, etc. | Chalk board power point Transparency | Essay type Short answers |
| II | 3 | Describe the inter-relationship of individual in society and community | Individual and the society * Socialization * Interdependence of the individual and society * Personal disorganization. | Chalk board power point Transparency | Essay type Short answers Assignment |
| III | 3 | Describe the influence of culture and on health and disease | Culture * Nature of culture * Evolution of culture * Diversity and uniformity of culture | Chalk board power point Transparency | Essay type Short answers Assignment |

| | | | | | |
|-----|---|---|---|--|---|
| IV | 4 | Identify various social groups and Their interactions | Social organization * Social groups, crowds and public groups, nations, race. * Social institutions: The family marriage, education, religion, arts, economic organization, political organization. * The urban and rural community in India: Ecology, characteristics of the village, characteristics of the town and city. * Social stratification: Class and caste. | Chalk board power point Transparency | Essay type Short answers Assignment |
| V | 6 | Explain the Social process | Social process *process of social interaction : competition, conflict war, cooperation, accommodation, and assimilation. | Chalk board power point Transparency | Essay type Short answers Assessment of report on community Identification |
| VI | 4 | Explain the Social change | Social change Nature and process of social change: Factors influencing cultural change.Cultural lag. | | |
| VII | 6 | Describe the institutions of family and marriage in India | Social problems * Social disorganization, control and planning: poverty, population, housing, illiteracy, food supplies, growth of urbanization, prostitution, minority groups, rights of women and children, child labour, child abuse, delinquency and crime, substance abuse. | Chalk board power point Transparency | Essay type Short answers |






References :

1. Sachadeva Y.V., An introduction to sociology, kithabmahal : Allahabad
2. R.K.Manekar, Sociology for Nurses, Sivosankar T.P., Vora Medical Publications
3. K.P.Pothen, S.Pothen, Sociology for Nurses, 3rd Edition, N.R.Brothers, Indore.
C.N. Shankar Rao Principals of sociology with introduction to social thoughts, S Chand E Company Publishers
4. Ashok N.Patel, S.S.Hooda, Sociology
5. Dr.N.H.Groenman, Dr.OD'aslevin, M A Bockenham, Social and Behvioural sciences for Nurses, 1st edition, Campanion Press Ltd.
6. Dr.AjithkumarSinha, Principles of Sociology, Lakshmi NarainAgarwal educational publishers.
7. T.B.Bottomore, Sociology A guide to problem and literature, 2nd edition, Blockie& Sons Publishers Pvt. Ltd.

DISTRIBUTION OF TYPE OF QUESTION AND MARKS FOR THE SUBJECT SOCIOLOGY

| Q. No. | Question description | Division of marks | Total marks |
|--------|--|-------------------|-------------|
| 1. | Total MCQs:- 15 | 15 x 1 | 15 |
| 2. | Long Answer Questions (LAQ) (Any 2 out of 3) | 2 x 10 | 20 |
| 3. | Short Notes (8 out of 10) a) b) c) d) e) f) g) h) i) j) | 8x5 | 40 |

Note :

1. MCQ : Each MCQ carries 1 mark.
2. Long Answer Questions : 3 questions will be given out of which , 2 have to be answered.
3. Short Notes : 10 questions will be given out of which, 8 have to be answered.



COMMUNITY HEALTH NURSING

Placement: Second Year Time

Allotted: Theory – 60hrs

Practical -240 hrs

COURSE DESCRIPTION

The course enables the students to understand the national health care delivery system and to participate in the delivery of community health nursing.

OBJECTIVES

At the end of the course, the student will

1. Explain the concept of various factors contributing to health of individual, family and community.
2. Identify the role of community health nurse.
3. Describe national health care delivery system.
4. Describe epidemiological methods and principles of prevention and control of illness in the community.
5. Identify the role of personnel working in the community health set up.
6. Plan the work of community health nurse and supervise and train health workers.

| UNIT NO | HOURS | Learning Objective | COURSE CONTENT | TEACHING LEARNING ACTIVITIES | ASSESSMENT |
|---------|-------|---|--|--|---|
| I | 6 | Describe the Concepts of community health nursing | Introduction * Introduction to community health –Concepts, Principles and elements of primary health care. * Introduction to community health nursing. * Concepts of community health nursing –community nursing process. * Objectives, scope and principles of community health nursing. | Chalk board power point Transparency | Essay type Short answers |
| II | 8 | Describe the Family health services | Family health services * Concept, objectives, scope and principles. * Individual family and community as a unit of service * Principles and techniques of home visiting * Establishing working relationship with the family | Chalk board power point Transparency | Essay type Short answers Assignment |

| | | | | | |
|-----|----|---|--|--|---|
| | | | <ul style="list-style-type: none"> * Working with families in relation to prevention of disease, promotion of health. * Care of the sick in the home, physically handicapped and mentally challenged. * Surveillance and monitoring | | |
| III | 10 | Describe the Organisation and administration of health services in India. | Organisation and administration of health services in India. <ul style="list-style-type: none"> * National health policy * Health care delivery system in India * Health team concept * Centre, State, district, urban health services, rural health services * System of medicines * Centrally sponsored health schemes * Role of voluntary health organizations and international health agencies * Role of health personnel in the community * Public health legislation. | Chalk board power point Transparency | Essay type Short answers Assignment |
| IV | 8 | Explain health education its aims concepts and scope | Health Education <ul style="list-style-type: none"> * Aims concepts and scope of the health education * National plan for health education * Communication techniques * Methods and media for health education programmes * Planning for health education and role of nurse | Chalk board power point Transparency | Essay type Short answers Assignment |
| V | 8 | Explain the Role of the community health nurse. | Role of the community health nurse. <ul style="list-style-type: none"> * National health programmes * Maternal and child health programmes * Family welfare and school health services * Occupational health services. * As a member of the health team. | Chalk board power point Transparency | Essay type Short answers Assessment of report on community Identification |

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|-----|----|--|--|--|---|
| VI | 10 | Describe Epidemiology | Epidemiology * Definition-concepts, aims, objectives, methods, principles * Epidemiology – Theories and models * Application of Epidemiology, principles and concepts in community health. | Chalk board power point Transparency | Essay type Short answers |
| VII | 10 | Explains the Bio statistics and vital statistics | Bio statistics and vital statistics * Introduction, definition and scope, legislation * Report, recording and compiling of vital statistics at the local, state, national and international level. * Definitions and methods of computing vital statistics * Methods of presenting data * Management information system. | Chalk board power point | Essay type Short answers Assignment |

PRACTICUM

Each student will prepare a community profile.

The students will be allotted families for gaining experience in identifying family health needs, health counseling and guidance and family budgeting for optimum health.

The students will participate in the activities of primary health centre, Sub-centre, MCH Centre.

Visits will be made to selected health and welfare agencies, water purification plant and sewage disposal plant, infectious disease hospital.

Conduct health educational programmes for individual/groups/community.

References :

1. K.Park, Textbook of Preventive & Social Medicine- current edition
2. K.Park, Essentials of Community Health Nursing
3. Raokasturi, An Introduction to Community Health Nursing, I publications.
4. Freeman Ruth, Community Health Nursing Practice.
5. Stanthope Lancaster, Community Health Nursing Process & Practice, Popular publication.
6. BasavantappaB.T.,Community Health Nursing
7. Sathe , Epidemiology & management of Heath Care , Popular publication
8. Mahajan Gupta, Textbook of Preventive & Social Medicine, Jaypee Publications

Lancaster, Community Health Nursing Process and Practice for Promoting Health, Mosby Publications.



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**DISTRIBUTION OF TYPE OF QUESTION AND MARKS
FOR THE SUBJECT COMMUNITY HEALTH NURSING**

| Question No. | Question description | Division of marks | Total marks |
|--------------|--|-------------------|-------------|
| 1. | Total MCQs:- 15 | 15 x 1 | 15 |
| 2. | Long Answer Questions (LAQ) (Any 2 out of 3) | 2 x 10 | 20 |
| 3. | Short Notes (8 out of 10) a) b) c) d) e) f) g) h) i) j) | 8x5 | 40 |

Note :

1. MCQ : Each MCQ carries 1 mark.
2. Long Answer Questions : 3 questions will be given out of which , 2 have to be answered.
3. Short Notes : 10 questions will be given out of which, 8 have to be answered.



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MENTAL HEALTH NURSING
PLACEMENT :SECOND YEAR TIME **ALLOTTED: Theory : -60 hrs**
Practical – 240 hrs

COURSE DESCRIPTION

This course enable the students to recognize and appreciate the causes, symptoms and process of abnormal human behaviour. It also introduces the student to the present day treatment modalities in the light of psychological, social and cultural factors affecting human behaviour. This course helps the student to learn principles of mental health and psychiatric nursing and to develop beginning skills in the management of the mentally ill in hospital and community.

OBJECTIVES

At the end of course, the student will

1. Identify and describe the philosophy and principles of mental health nursing
2. Describe the historical development of mental health and psychiatric nursing
3. Classify mental disorders
4. Develop skill in history taking and performing mental status examination.
5. Describe etiological factors, psycho-pathology, clinical features, diagnostic criteria and treatment methods used for mental disorders.
6. Manage the patients with various mental disorders.
7. Communicate therapeutically with patients and their families.
8. Identify role of the nurse in preventive psychiatry.
9. Identify the legal aspects in practice of mental health and psychiatric nursing.

| UNIT NO | HOURS | Learning Objective | COURSE CONTENT | TEACHING LEARNING ACTIVITIES | ASSESSMENT |
|---------|-------|--|--|---|---|
| I | 5 | Discuss the historical development of psychiatry and psychiatric development | Introduction and historical development * History of psychiatry * Historical development of mental health nursing * Philosophy, principles of mental health and psychiatric nursing * Concept of normal and abnormal behaviour * Role and qualities of mental health and psychiatric nursing * Mental health team and functions of team members * Legal aspects in psychiatry and mental health services | • Chalkboard • Transparency • Power Point • Charts | ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |

| | | | | | |
|-----|----|---|--|---|---|
| II | 5 | Discuss history taking. Describe mental status examination | Classification and assessment of mental disorders * Terminologies used in psychiatry * Classification of mental disorders * Etiological factors and psychopathology of mental disorders * History taking and assessment methods for mental disorders. | Chalkboard • Transparency • Power Point • Charts | > Assignments > Unit tests, > Essay type > Short Answers > Objectives > Type |
| III | 4 | Enlist various types of therapeutic techniques. Explain the elements of nurse patient contract. | Therapeutic communication * Communication process * Interview skills, therapeutic communication techniques. Nurse patient Relationship, therapeutic impasse and its management process recording. | Chalkboard • Transparency • Power Point • Charts | > Assignments > Unit tests, > Essay type > Short Answers > Objectives > Type |
| IV | 20 | Write the management of patient with Schizophrenia. Discuss the management of patient with mood disorders. | Management of mental disorders. * Etiological factors, psychopathology, types, clinical features, diagnostic criteria, treatment and nursing management of patient with following disorders: * Neurotic Disorders: Anxiety Neurosis, Depressive Neurosis, Obsessive compulsive Neurosis, phobic Neurosis and Hypochondriacal Neurosis, Stress related and somatoform disorders. * Psychotic Disorders: Schizophrenic form, affective and organic psychosis. * Organic Brain syndromes | Chalkboard • Transparency • Power Point • Charts | > Assignments > Unit tests, > Essay type > Short Answers > Objectives > Type |



| | | | | | |
|-----|---|---|--|---|---|
| | | Explain the management of patient with neurotic disorder. | * Psychosomatic disorders * Personality disorders * Disorders of childhood and adolescence. | | |
| V | 3 | Discuss the management of patient with substance use disorder. | Management of patients with substance use disorders * Substance use and misuse. * Dependence, intoxication and withdrawal * Classification of psychoactive substances * Etiological and contributory factors * Psychopathology * Clinical features * Diagnostic criteria * Treatment and nursing management of patient with substance use disorders. * Preventive and rehabilitative aspects in substance abuse. | <ul style="list-style-type: none"> • Chalkboard • Transparency • Power Point • Charts | <ul style="list-style-type: none"> ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |
| VI | 2 | Discuss the nursing management of patient with mental deficiency. | Management of mental sub-normality * Classification of mental sub-normality * Etiological factors, psychopathology, psychometric assessment, diagnostic criteria and management of sub-normality. | <ul style="list-style-type: none"> • Chalkboard • Transparency • Power Point • Charts | <ul style="list-style-type: none"> ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |
| VII | 4 | Enlist the psychiatric emergencies. Discuss crisis intervention. | Psychiatric Emergencies * Types of emergencies, psychopathology, clinical features, assessment and diagnosis, treatment and nursing management of patient with psychiatric emergencies. * Crisis intervention therapy. | <ul style="list-style-type: none"> • Chalkboard • Transparency • Power Point • Charts | <ul style="list-style-type: none"> ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objective ➤ Type |

| | | | | | |
|------|----|---|--|---|---|
| VIII | 12 | Discuss Psychopharmacology in mental disorders. Explore psychological therapies used in mental disorder. | Therapeutic Modalities Principles, indication, contraindications and role of nurse in various treatment methods: * Therapeutic community and Milieu therapy * Occupational therapy * Psychotherapy * Behaviour therapy * Group therapy * Family therapy * Pharmacotherapy * Electro convulsive therapy * Other miscellaneous therapies. | <ul style="list-style-type: none"> • Chalkboard • Transparency • Power Point • Charts | <ul style="list-style-type: none"> ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |
| IX | 5 | Discuss the levels of prevention in psychiatry. Explain national mental health programme | Preventive Psychiatry * Model of prevention * Role of nurse in preventive psychiatry * Psychiatric social work * Community mental health nursing * Community mental health agencies * National mental health programmes | <ul style="list-style-type: none"> • Chalkboard • Transparency • Power Point • Charts | <ul style="list-style-type: none"> ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |

PRACTICUM

The student will be provided opportunity to:

- Observe, record and report the behavior of their selected patients.
- Record the process of interaction
- Assess the nursing needs of their selected patients, plan and implement the nursing intervention.
- Counsel the attendant and family members of patient.
- Participate in the activities of psychiatric team
- Write observation report after a field visit to the following places:
- Child guidance clinic,
- School/Special Schools (For Mentally subnormal)
- Mental Hospital
- Community mental health centres,
- De-addiction centre.



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References:

1. Gail Wiscars Stuart, Michele T. Laraia. "Principles and practice of psychiatric nursing", 8th edition, Elsevier, India Pvt. Ltd. New Delhi. 2005.
2. Michael Gelder, Richard Mayou, Philip Cowen, Shorter oxford text book of psychiatry, Oxford medical publication, 4th ed. 2001.
3. M.S. Bhatia, A concise text Book of Psychiatric Nursing, CBS publishers and distributors, Delhi 2nd ed. 1999.
4. M.S. Bhatia, Essentials of Psychiatry, CBS publishers and distributors, Delhi
5. Mary C Townsend. "Psychiatric Mental Health Nursing". Concept of care, 4th edition, F.A. Davis Co. Philadelphia 2003.
6. Bimla Kapoor, Psychiatric nursing, Vol. I & II Kumar publishing house Delhi, 2001
7. Niraj Ahuja, A short textbook of psychiatry, Jaypee brothers, New Delhi, 2002.
8. The ICD10, Classification of mental and behavioural disorders, WHO, A.I.T.B.S. publishers, Delhi, 2002
9. De Souza Alan, De Souza Dhanlaxmi, De Souza A, "National series - Child psychiatry" 1st ed, Mumbai, The National Book Depot, 2004
10. Patricia, Kennedy, Ballard, "Psychiatric Nursing Integration of Theory and Practice", USA, McGraw Hill 1999.
11. Katherine M. Fort in ash, Psychiatric Nursing Care plans, Mosby Year book. Toronto
12. Sheila M. Sparks, Cynthia M. Jalor, Nursing Diagnosis reference manual 5th edition, , Spring house, Corporation Pennsylvania's
- R. Sreevani, A guide to mental health & psychiatric nursing, Jaypee brothers, Medical Publishers P(Ltd), New Delhi 1st edition.
14. R. Baby, Psychiatric Nursing N.R. Brothers, Indore, 1st edition 2001.
15. Varghese Mary, Essential of psychiatric & mental health nursing,
16. Foundations Journals of mental health nursing



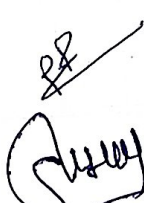
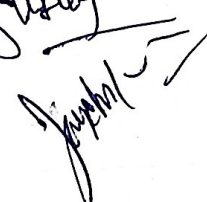


**DISTRIBUTION OF TYPE OF QUESTION AND MARKS FOR THE SUBJECT
MENTAL HEALTH NURSING**

| Question No. | Question description | Division of marks | Total marks |
|--------------|---|-------------------|-------------|
| 1. | Total MCQs:- 15 | 15 x 1 | 15 |
| 2. | Long Answer Questions (LAQ) (Any 2 out of 3) | 2 x 10 | 20 |
| 3. | Short Notes (8 out of 10) a) b) c) d) e) f) g) h) i) j) | 8x5 | 40 |

Note :

1. MCQ : Each MCQ carries 1 mark.
2. Long Answer Questions : 3 questions will be given out of which , 2 have to be answered.
3. Short Notes : 10 questions will be given out of which, 8 have to be answered.



INTRODUCTION TO NURSING EDUCATION

Placement : Second year Time

Allotted: Theory -60 hrs

Practical -75 hrs

COURSE DESCRIPTION

This course introduced the students to principles and concepts of education, curriculum development and methods and media of teaching. It also describes the steps in curriculum development and implementation of educational programmes in nursing.

OBJECTIVES

At the end of the course, the students will

1. Describe the philosophy and principles of education.
2. Explain the teaching – learning process
3. Develop the ability to teach, using various methods and media.
4. Describe the process of assessment.
5. Describe the administrative aspects of school of nursing
6. Participate in planning and organizing an in-service education programme.
7. Develop basic skill of counseling and guidance.

| UNIT NO | HOURS | Learning Objective | COURSE CONTENT | TEACHING LEARNING ACTIVITIES | ASSESSMENT |
|---------|-------|--|---|--|--|
| I | 2 | Discuss the Meaning of education, aims, function and principles. Philosophy of education | Introduction to education Meaning of education, aims, function and principles. Philosophy of education | <ul style="list-style-type: none">• Chalkboard• Transparency• Power Point• Charts | <ul style="list-style-type: none">➤ Assignments➤ Unit tests,➤ Essay type➤ Short Answers➤ Objectives➤ Type |

| | | | | | |
|-----|----|---|---|--|---|
| II | 4 | Discuss Teaching learning process | Teaching learning process * Nature and characteristics of learning * Principles and maxims of teaching * Formulating objectives * Lesson planning. | Chalkboard • Transparency • Power Point • Charts | > Assignments > Unit tests, > Essay type > Short Answers > Objectives > Type |
| III | 10 | Enlist various types of Methods of teaching | Methods of teaching * Teaching methods * Lecture * Discussion * Demonstration * Group discussion * Project * Role play * Panel discussion * Symposium * Seminar * Field trip * Workshop * Exhibition * Programmed instruction * Computer assisted learning * Clinical teaching methods: * Case methods * Case presentation * Nursing rounds and reports * Bedside clinic * Conference(individual and group) * Recording of interaction process | • Chalkboard • Transparency • Power Point • Charts | > Assignments > Unit tests, > Essay type > Short Answers > Objectives > Type |



| | | | | | |
|----|----|-----------------------------------|---|---|---|
| IV | 10 | Explain the Educational media | Educational media * The communication process: factors affecting communication * Purposes and types of audio-visual aids * Graphics aid: Chalk-board, charts, graphs, posters, flash cards, flannel graph/khadigraph, bulletin, cartoon. * Three dimensional aids: Objects, specimen, models, puppets. * Printed aids: pamphlets and leaflets * Projected aids: slides, films and televisions, VCR, VCP, Overhead projector, camera, microscope. * Audio – Aids: Tape-recorder, public address system, computer | <ul style="list-style-type: none"> • Chalkboard • Transparency • Power Point • Charts | <ul style="list-style-type: none"> ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |
| V | 10 | Discuss the Methods of assessment | Methods of assessment * Purpose and scope of evaluation and assessment * Criteria for selection of assessment techniques and methods * Assessment of knowledge: essay type Question, SAQ(Short Answer Questions) * MCQ(multiple choice Questions) * Assessment of skills: Observation, check list. Practical examination, Viva, objective structured clinical examination. * Assessment of attitude: Attitude scale. | <ul style="list-style-type: none"> • Chalkboard • Transparency • Power Point • Charts | <ul style="list-style-type: none"> ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |

| | | | | | |
|------|----|---|---|---|---|
| VI | 10 | Discuss the Management of school of Nursing | Management of school of Nursing * Planning of school of nursing, organization * Recruitment of teaching staff, budget, facilities for the school, student selection and admission procedure, administrative planning for students, welfare services for students, maintenance of school records, preparation of annual reports. INC guidelines for school of nursing | <ul style="list-style-type: none"> • Chalkboard • Transparency • Power Point • Charts | <ul style="list-style-type: none"> ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |
| VII | 8 | Discuss Guidance and counseling. | Guidance and counseling definition * Basic principles of guidance and counseling * Organisation of guidance and counseling services * Counselling process * Managing disciplinary problems * Management of crisis | <ul style="list-style-type: none"> • Chalkboard • Transparency • Power Point • Charts | <ul style="list-style-type: none"> ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |
| VIII | 6 | Discuss In-service education. | In-service education * Introduction to nature scope of in-service education programme * Principles of adult learning * Planning for in- service programme * Techniques, and methods of staff education programme * Evaluation of in-service programme. | <ul style="list-style-type: none"> • Chalkboard • Transparency • Power Point • Charts | <ul style="list-style-type: none"> ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |



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PRACTICUM

Each student should:

- Conduct five planned teaching using different methods and media
- Prepare different types of teaching aids
- Plan, organize and conduct inservice education programme.
- Conduct at least one counseling session
- Prepare rotation plans.

References :

1. Bhatia, Kamala & Bhatia B.D.: The Principles and Methods of Teaching: Delhi, Doaba House, 1977.
2. Neeraja, Nursing Education, New Delhi, Jaypee Brother, 2004.
3. Safaya, Raghunath & Shaيدا, B.D. Educational Theory & Practice, Delhi, Dhanpat Row & Sons, 1974.
4. Bhatia, Hans Raj Elements of Educational Psychology, Bombay, QnentConpman, 5th ed. 1973.

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**DISTRIBUTION OF TYPE OF QUESTION AND MARKS
FOR THE SUBJECT INTRODUCTION TO NURSING EDUCATION**

| Question No. | Question description | Division of marks | Total marks |
|--------------|--|-------------------|-------------|
| 1. | Total MCQs:- 15 | 15 x 1 | 15 |
| 2. | Long Answer Questions (LAQ) (Any 2 out of 3) | 2 x 10 | 20 |
| 3. | Short Notes (8 out of 10) a) b) c) d) e) f) g) h) i) j) | 8x5 | 40 |

Note :

1. MCQ : Each MCQ carries 1 mark.
2. Long Answer Questions : 3 questions will be given out of it 2 have to be answered.
3. Short Notes : 10 questions will be given out of it 8 have to be answered.










INTRODUCTION TO NURSING SERVICE ADMINISTRATION

Placement : Second year Time

Allotted: Theory -60 hrs

Practical -180 hrs

COURSE CONTENTS

This course is designed to give an opportunity to the student to gain an understanding of the principles of administration and its application to nursing service. It is also intended to assist the students to develop an understanding of professional leadership need.

OBJECTIVES

At the end of the course, the student will

1. Identify the principles of administration
2. Describe the principles and techniques of supervision
3. Explain the principles and methods of personnel management
4. Explain the principles of budgeting
5. Organise and manage a nursing unit effectively
6. Identify dynamics of organizational behaviour, styles and functions of effective leadership.

| UNIT NO | HOURS | Learning Objective | COURSE CONTENT | TEACHING LEARNING ACTIVITIES | ASSESSMENT |
|---------|-------|--|--|--|--|
| I | 2 | Discuss the Meaning of education, aims, function and principles. Philosophy of education | Principles and practice of Administration * Significance, elements and principles of administration, * Organization of hospital – Definition, Aims, functions and classifications, health team. * Policies of hospital, different departments with special emphasis to department of | <ul style="list-style-type: none">• Chalkboard• Transparency• Power Point• Charts | <ul style="list-style-type: none">➤ Assignments➤ Unit tests,➤ Essay type➤ Short Answers➤ Objectives➤ Type |

| | | | | | |
|-----|----|---|---|---|---|
| | | | nursing and office management. * Responsibilities of the nursing personnel specially of ward sister, medico legal aspects, concept of cost effectiveness. | | |
| II | 4 | Discuss Teaching learning process | Nursing unit Management * Physical layout of a nursing unit and necessary facilities * Factors affecting the quality of nursing care * Maintenance of a therapeutic environment * Administration of the unit-management of patient care * Maintenance of physical environment * Assignment of duties and time plan. * Patient assignment, safety measures, prevention of accidents and infections, * Maintenance of patients records and reports, legal responsibilities. * Maintenance of quality nursing care, nursing audit. | Chalkboard • Transparency • Power Point • Charts | ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |
| III | 10 | Enlist various types of Methods of teaching | Personnel management * Staff recruitment and selection, appointment, promotions, personnel policies and job descriptions. * Job analysis. * Staffing the unit, staffing norms, rotation plan, leave planning, performance appraisal, staff welfare and management of disciplinary problems. | • Chalkboard • Transparency • Power Point • Charts | ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |



| | | | | | |
|-----|----|---|---|---|---|
| IV | 10 | Explain the Educational media | Supervision * Principles of supervision, nature and objectives * Tools and techniques of supervision * Evaluation * Nursing audit * Staff development – orientation program * Skill training * Leadership development * Problem solving process. | • Chalkboard • Transparency • Power Point • Charts | ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |
| V | 10 | Discuss the Methods of assessment | Material management * Principles of material management * Quality control * Inventory, care of equipment, safekeeping * Role of nursing personnel in material management. | • Chalkboard • Transparency • Power Point • Charts | ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |
| VI | 10 | Discuss the Management of school of Nursing | Financial Management * Budgeting – Principles of budgeting, audit. | • Chalkboard • Transparency • Power Point • Charts | ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |
| VII | 8 | Discuss Guidance and counseling. | Organizational behaviour * Group dynamic and human relation, organizational communication (hospital information system) * Public relations, leadership styles and functions * Methods of reporting * Maintaining records and reports | • Chalkboard • Transparency • Power Point • Charts | ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |

PRACTICUM

Observe the functioning of nursing administration at various level i.e. institution, department, unit.

Each student will practice ward management under supervision.

Student will prepare rotation plan of the staff, write reports, give verbal report of the ward and assist in maintaining the inventory of the nursing unit.

Visit to private and government hospital and write observation reports.

References :

1. TNAI. Nursing Administration and Management, 1st edn, Academic Press: New Delhi, 2000.
2. Shakharkar, B M. Principles of Hospital Administration and Planning, Jaypee Brothers: Bangalore, 1998.
3. Pai, Pragna. Effective Hospital Management, 1st edn, The National Book Depot: Mumbai, 2002.
4. Srinivasan, A V. Managing a Modern Hospital, 1st edn, Sage Publications: New Delhi, 2002.
5. Basavanthappa, B T. Nursing Administration, 1st edn, J P Brothers Medical Publishers: New Delhi, 2000.
6. Goel, s & Kumar, R. Hospital Administration and Management, 1st edn, Deep and Deep Publications: New Delhi, 2000.
7. Park K. Park's Textbook of Preventive and Social Medicine, 17th edn, M/S BanarsidasBhanot Publishers: Jabalpur, 2003.
8. Russels, C S. Management & Leadership for Nurse Managers, 3rd edn, Jones Bartlett Publishers: London, 2002.



Handwritten signatures and initials are present below the references, including a signature that appears to be 'Shriyan Rathod' and several other initials and signatures.

**DISTRIBUTION OF TYPE OF QUESTION AND MARKS
FOR THE SUBJECT
INTRODUCTION TO NURSING ADMINISTRATION**

| Question No. | Question description | Division of marks | Total marks |
|--------------|--|-------------------|-------------|
| 1. | Total MCQs:- 15 | 15 x 1 | 15 |
| 2. | Long Answer Questions (LAQ) (Any 2 out of 3) | 2 x 10 | 20 |
| 3. | Short Notes (8 out of 10) a) b) c) d) e) f) g) h) i) j) | 8x5 | 40 |

Note :

1. MCQ : Each MCQ carries 1 mark.
2. Long Answer Questions : 3 questions will be given out of which , 2 have to be answered.
3. Short Notes : 10 questions will be given out of which, 8 have to be answered.

PR
(Surya)



PR *PR*

Prashant

PR
PR

INTRODUCTION TO NURSING RESEARCH AND STATISTICS

Placement :Second Year Time

Allotted: Theory -45 hrs

Practical -120 hrs

COURSE DESCRIPTION

The course is designed to assist the students to develop an understanding of basic concepts of research and statistics, use the findings of nursing research in nursing practice, apply the knowledge in conducting projects(s) and solve problems related to nursing using scientific method.

OBJECTIVES

At the end of the course, the students will:-

1. Define the terms and concepts of nursing research
2. Identify needs and scope of nursing research
3. Identify and define a research problem
4. Locate and list sources of literature for a specific study
5. Describe different research approaches, methods of data collection and sampling techniques with a special reference to survey method.
6. Develop tool for data collection
7. Enumerate steps of data analysis and present data summary in tabular form.
8. Use descriptive and co-relational statistics in data analysis
9. Conduct a group research project.

| UNIT NO | HOURS | Learning Objective | COURSE CONTENT | TEACHING LEARNING ACTIVITIES | ASSESSMENT |
|---------|-------|---------------------------------|--|--|---|
| I | 4 | Defines the research definition | A.INTRODUCTION TO RESEARCH METHODOLOGY * Steps of scientific methods. * Definition of research * Need for nursing research * Characteristics of good research. Research process. | <ul style="list-style-type: none">• Chalkboard• Transparen cy | <ul style="list-style-type: none">➤ Assignments➤ Unit tests,➤ Objectives➤ Type |

| | | | | | |
|-----|---|--|--|--|---|
| II | 4 | Discuss the Definition or research terms and Review of literature. | Statement of research problem * Statement of purpose and objectives * Definition or research terms * Review of literature. | <ul style="list-style-type: none"> • Chalkboard • Transparency • Power Point | <ul style="list-style-type: none"> ➤ Assignments ➤ Short Answers ➤ Objectives ➤ Type |
| III | 4 | Discuss Research approaches | Research approaches:- historical, survey and experimental | <ul style="list-style-type: none"> • Chalkboard • Transparency • Power Point | <ul style="list-style-type: none"> ➤ Essay type ➤ Short Answers ➤ Objectives ➤ Type |
| IV | 4 | Enlist various Sampling techniques and methods of data collection | Sampling techniques and methods of data collection. * Sampling * Instruments-Questionnaire. Interview * Observation schedule, records, measurements * Reliability and validity or instruments. | <ul style="list-style-type: none"> • Chalkboard • Transparency | <ul style="list-style-type: none"> ➤ Assignments ➤ Objectives ➤ Type |
| V | 4 | Explain the Analysis of Data | Analysis of Data: Tabulation * Classification and summarization * Presentation * Interpretation of data | <ul style="list-style-type: none"> • Chalkboard • Transparency • Power Point Charts | <ul style="list-style-type: none"> ➤ Assignments ➤ Unit tests, ➤ Essay type ➤ Short Answers |
| VI | 4 | Discuss the Communication of research findings | Communication of research findings * Writing Report: * Organizing materials for writing * Format of the report * Use of computers | <ul style="list-style-type: none"> • Chalkboard • Transparency | <ul style="list-style-type: none"> ➤ Assignments ➤ Unit tests, ➤ Objectives Type |
| VII | 8 | Discuss the Measures of central tendency | B.INTRODUCTION TO STATISTICS * Descriptive Statistics. * Frequency Distribution –Types of measure – frequencies, class | <ul style="list-style-type: none"> • Chalkboard • Transparency | <ul style="list-style-type: none"> ➤ Assignments ➤ Unit tests ➤ Essay type |

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|------|---|--|---|---|--|
| | | | interval, graphic methods of describing frequency. * Measures of central tendency – Mode, Median and mean. * Measures of variability : Range, standard deviation * Introduction to normal probability. | <ul style="list-style-type: none"> • Power Point Charts | <ul style="list-style-type: none"> ➤ Short Answers ➤ Objectives ➤ Type |
| VIII | 4 | Discuss Correlation | Correlation * Computation by rank difference methods * Uses of correlation co-efficient | <ul style="list-style-type: none"> • Chalkboard • Transparency | <ul style="list-style-type: none"> ➤ Assignments ➤ Objectives Type |
| IX | 4 | Discuss Biostatistics | Biostatistics: Crude rates and standardized rates, ratio and estimation of the trends. | <ul style="list-style-type: none"> • Chalkboard • Transparency • Power Point | <ul style="list-style-type: none"> ➤ Assignments ➤ Unit tests, ➤ Essay type |
| X | 6 | Explain the Introduction to computers in nursing | Introduction to computers in nursing * Introduction to computers and disk-operating system. * Introduction to word processing * Introduction to data base * Windows applications, word, excel, power point, multimedia. * Use of statistical packages. * Introduction to internet & use of electronic mail * Computer aided teaching and testing. | <ul style="list-style-type: none"> • Chalkboard • Transparency • Power Point | <ul style="list-style-type: none"> ➤ Assignments ➤ Unit tests, ➤ Essay type |

PRACTICUM

Students will conduct research project in small groups in selected areas of nursing and submit a report (Group studies may include studying of existing health practices, improved practices of nursing (procedures) health records, patient records and survey on nursing literature)

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References:

1. Polit, D.F. & Beck CT, Nursing Research, Principles and Methods, 7th ed. Lippincott Williams & Wilkins, Philadelphia, 2003.
2. Polit Dennis and Hunglar B P, Nursing research principles and methods, 6th edition Lippincott, Philadelphia, 1999.
3. Laura A. Talbot, Principles and practice of nursing research, Mosby St. Louis 1993.
4. Dorothy Y B & Marie TH, Fundamentals of research in Nursing, 3rd ed. Jones & Bartlett Publishers, Boston, 2003.
5. Rao TB, Methods in Medical Research, 1st ed, Radha Rani Publishers, Guntur AP, 2002.
6. Smith, P Research Mindedness for Practice. An interactive approach for nursing and health care, Churchill Livingstone, New York, 1997
7. American Psychological Association publication manual. 2001.
8. Mahajan Methods in Bio statistics.
9. Treece E.W. & Treece JW: Elements of Research in Nursing, 3rd ed The CV Mosby Company St. Louis 1986.

DISTRIBUTION OF TYPE OF QUESTION AND MARKS FOR THE SUBJECT INTRODUCTION TO NURSING RESEARCH AND STATISTICS

| Question No. | Question description | Division of marks | Total marks |
|--------------|---|-------------------|-------------|
| 1. | Total MCQs:- 10 | 10 x 1 | 10 |
| 2. | Long Answer Questions (LAQ) (Any 2 out of 3) | 2 x 10 | 20 |
| 3. | Short Notes (4 out of 6) a) b) c) d) e) f) | 4x5 | 20 |

Note :

1. MCQ : Each MCQ carries 1 mark.
2. Long Answer Questions : 3 questions will be given out of which , 2 have to be answered in Nursing Research.
3. Short Notes : 6 questions will be given out of which, 4 have to be answered.

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[Circular stamp: Institute of Nursing, Bhojan Rathod, Gandhinagar]

Subject name – Surgery

Subject code- HomUG -Sur -I

Index


Principal



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1. Preamble

Surgery involves addressing acute or chronic injuries, deformities, or diseases through physical intervention such as removal, repair, or reconstruction of a specific part or organ. Specialized fields like ENT, Ophthalmology, Dentistry, and Orthopedics, as well as super specialties like cardiac, neuro, and oncosurgery, have gained prominence.

Homoeopathy has proven to play a significant role in preventing several surgical interventions, provided that the physician can diagnose the condition early and administer the appropriate treatment while also considering supplementary measures. Therefore, a homoeopathic physician should possess a solid understanding of surgery. A student of homoeopathy should be able to diagnose clinical conditions to effectively address the scope and limitations of homoeopathy in surgical cases. It is essential for students to learn the Hahnemannian concept of surgical diseases, chronic diseases, and susceptibility for the effective management of surgical conditions.

The management of surgical cases according to both modern medicine and Organon is a crucial part of the education and training of homoeopathic students. A comprehensive understanding and application of Homoeopathic principles, along with the correct knowledge of Homoeopathic medicines, can extend the use of Homoeopathy to a range of acute and chronic surgical conditions that were previously considered beyond its scope. Understanding surgical conditions enables students to provide continuity of care, particularly when patients transition between surgical interventions and homeopathic management. Equipping homeopathic students with knowledge of surgical conditions allows them to make informed decisions and recommend suitable treatment options, whether surgical or non-surgical. By studying surgical conditions, homeopathic students can offer comprehensive and integrated healthcare to their patients, leading to improved health outcomes and patient satisfaction.

2. Course outcomes

At the end of BHMS course, the student shall be able to-

- i) Diagnose common surgical conditions.
- ii) Understand the role of Homoeopathic treatment in pseudo-surgical and true surgical diseases.
- iii) Record the surgical case history that is complete and relevant to disease identification, help to find the correct Homoeopathic medicine that can be used for treating the condition.

- iv) Understand the fundamentals of examination of a patient with surgical problems.
- v) Demonstrate the ability to perform the bedside clinical procedures and the physical examination that is relevant for diagnosis and management of the disease.
- vi) Demonstrate ability to advise appropriate diagnostic tests (including radio-diagnosis) and interpretation of the test in the individual surgical case.
- vii) Perform basic management procedures of general surgery like wound dressing, ABC management, suturing, transport of the injured and fluid therapy etc.
- viii) Discuss causation, manifestations, management and prognosis of surgical conditions.
- ix) Understand the miasmatic background of surgical disorders, wherever applicable.
- x) Apply Materia medica (therapeutics) and posology in common surgical conditions.
- xi) Understand the use of repertory in Homoeopathic prescriptions for surgical conditions.

3. Learning objectives (to be edited according to the II BHMS content)

At the end of II BHMS course, the learner shall be able to-

- i. Understand surgical case taking.
- ii. Understand common surgical symptomatology and its differential approach.
- iii. Demonstrate the basic management procedures of general surgery. Eg. dressing, ABC management and fluid therapy
- iv. Describe the concepts required to diagnose surgical clinical conditions taught in II BHMS.
- v. Understand the role of examination and investigation in diagnosing surgical disorders.
- vi. Identify referral criteria for medical emergencies and surgical conditions.
- vii. Classify symptoms and integration with repertory.
- viii. Understand applied Materia Medica and posology in common surgical conditions (taught in II BHMS) which can be managed with Homoeopathy.

4. Course content and its term-wise distribution

| Sl. No. | Topic |
|----------------|--|
| Term I | |
| 1. | Introduction to surgery, Scope and limitations of Homoeopathy in surgical conditions, Surgical diseases explained in relation to organon of medicine |
| 2. | Trauma/Injury; different types of injuries- head injury; road traffic accident; injury to chest and abdomen |
| 3. | Wound and wound healing; scars and keloids |
| 4. | Haemorrhage and blood transfusion |
| 5. | Shock; various types of shock |
| 6. | Fluid, electrolyte and acid- base balance |
| 7. | Burns and Skin grafting |
| 8. | Nutrition |
| 9. | Common surgical infections |
| Term II | |
| 10. | Special infections |
| 11. | Tumours and Cysts (Swellings) |
| 12. | Hernia |
| 13. | Ulcers |
| 14. | Sinus and fistula |

5. Teaching hours

5.1. Gross division of teaching hours

| Surgery | | |
|---------|--------------------------|------------------------------|
| Year | Teaching hours- Lectures | Teaching hours- Non-lectures |
| II BHMS | 92 | 24 |

5.2. Teaching hours theory

| Sl. No. | Topic | Teaching hours |
|---------|---|----------------|
| 1. | Introduction to surgery, Scope and limitations of Homoeopathy in surgical conditions | 3 |
| 2. | Injury – types Head injury; Road traffic accident; injury to chest, abdomen | 10 |
| 3. | Wound & wound healing; Scar, keloid | 5 |
| 4. | Haemorrhage Blood transfusion | 4 |
| 5. | Shock | 6 |
| 6. | Fluid, electrolytes and acid-base balance | 6 |
| 7. | Burn, skin grafting | 7 |
| 8. | Nutrition – consequents of malnutrition in surgical patients, nutritional requirement in surgical patients and methods of providing nutritional support | 3 |
| 9. | Common surgical infections- Boil, Carbuncle, Abscess, Cellulitis, and erysipelas, Hidradenitis suppurativa, septicaemia, pyaemia | 8 |
| 10. | Special infections- | 8 |

| | | |
|--------------|---|-----------|
| | Tuberculosis, syphilis, acquired immunodeficiency syndrome, actinomycosis, leprosy, tetanus, infective gangrene | |
| 11. | Concept of swellings- Tumours: Benign-Lipoma, fibroma, adenoma, neuroma, Neurilemmoma, Neurofibroma, Haemangioma Malignant-Carcinoma, sarcoma, fibrosarcoma; naevus, melanoma Cysts – Classification | 12 |
| 12. | Hernia - Aetiology, General Classification, Abdominal hernias- Basic anatomy, Types, clinical features, management | 10 |
| 13. | Ulcers | 8 |
| 14. | Sinus and fistula | 2 |
| Total | | 92 |

5.3. Teaching hours Non-lecture

| Sl No | Clinical | Hours |
|-------|---|-------|
| 1 | Case taking of surgical case | 2 |
| 2 | Examination of Trauma case, Transport of the injured | 2 |
| 3 | Examination of head injury case | 2 |
| 4 | Examination of wound, suture technique | 1 |
| 5 | Examination of haemorrhagic case | 1 |
| 6 | Examination of shock | 1 |
| 7 | Fluid, electrolytes and acid base balance - Clinical Examination and evaluation | 1 |
| 8 | Burns - Clinical Examination | 1 |
| 9 | Common surgical infections - Clinical Examination | 2 |
| 10 | Special infections - Clinical examination | 2 |
| 11 | Examination of swelling- cysts and tumours | 2 |
| 12 | Examination of hernia | 2 |

| | | |
|----|---|-----------|
| 13 | Examination of ulcer | 2 |
| 14 | Examination of sinus, fistula | 1 |
| 15 | ABC management, wound dressing, fluid therapy | 2 |
| | Total | 24 |

6. Content mapping (competencies tables)

6.1. Introduction to Surgery, scope and limitations of Homoeopathy in surgical conditions and surgical case taking -

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/Guilbert | Priority | TL MM | Assessment | | Integration |
|------------------|----------------------|--------|---|---|----------------|-----------|-----------------------------------|------------|------------|-------------|
| | | | | | | | | F | S | |
| Hom UG-Sur-I 1.1 | HO | KH | Introduction to surgery | Describe surgical disease according to Hahnemann. Explain the importance of knowledge of surgical diseases for Homoeopathic practice | C/2 | Must know | Lecture Small group discussion | Viva | MCQ SAQ | Organon |
| Hom UG-Sur-I 1.2 | HO | KH | Scope and limitations of Homoeopathy in surgical conditions | Explain scope and limitations of Homoeopathy in surgical conditions | C/2 | Must know | Lecture Small group discussion | Viva | SAQ | Organon |

| | | | | | | | | | | |
|----------------------------|----|----|--|--|-----|-----------|---|------|-----|--|
| Hom UG- Sur-I 1.3 | HO | KH | Homoeopathic perspective of surgical diseases | Classification of Disease Hahnemannian: Surgical disease | C/2 | Must know | Lecture | Viva | LAQ | Organon |
| Hom UG- Sur-I 1.4 | HO | KH | Homoeopathic perspective of surgical diseases | Explain the nature and significance of surgical disease on the basis of organon of medicine | C/2 | Must know | Lecture | Viva | LAQ | Organon |
| Hom UG- Sur-I 1.5 | KS | KH | Case taking of surgical cases | Discuss the steps of case taking in surgical conditions | C/2 | Must know | Lecture, small group discussion | Viva | -- | Organon Repertory and case taking |
| Hom UG- Sur-I 1.6 | PC | SH | Case taking of surgical case | Observe surgical case taking in clinical set up | P/1 | Must know | Observation Small group discussion | DOPS | | -- |

6.2. Trauma/ Injury and examination of trauma case-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|------------------|----------------------|--------|---|--|-----------------|-----------|------------------------------------|--------------|------------|----------------|
| | | | | | | | | F | S | |
| Hom UG-Sur-I 2.1 | KS | KH | Types of injury | Classify different types of injury/ trauma according to causation and be effects | C/2 | Must know | Lecture Audiovisual mode | Viva | MCQ SAQ | FMT |
| Hom UG-Sur-I 2.2 | HO | KH | Homoeopathic therapeutics of injury | List homeopathic remedies that are commonly used for specific types of injuries | C/1 | Must know | Lecture Small group discussion | Viva | SAQ | Materia Medica |
| Hom UG-Sur-I 2.3 | KS | KH | Principles in the management of road traffic accident | Describe the components of primary survey in victims of road traffic accidents | C/2 | Must know | Lecture/ small group discussion | Viva OSCE | SAQ LAQ | -- |

| | | | | | | | | | | |
|------------------|-----|----|-------------------------------|--|-----|-----------|--|-----------|-------------------|-----|
| | | | | Describe the components of Secondary survey in victims of road traffic accidents | C/2 | Must know | Lecture/ small group discussion | | | |
| Hom UG-Sur-I 2.4 | PBL | SH | Resuscitation in trauma cases | Demonstrate the steps of Basic life support - Initiation of resuscitation Opening of airway Defibrillation High quality CPR Ventilation-compression ratio Vascular access Termination of CPR | P/2 | Must know | Skill lab training Audio visual aids DOPS | DOPS Viva | DOP S | --- |
| Hom UG-Sur-I 2.5 | KS | KH | Resuscitation of trauma case | Discuss the principles of ATLS – advance trauma care management | C/2 | Must know | Skill lab training Audio visual aids Small group discussion DOPS | Viva DOPS | MCQ SAQ LAQ DOP S | -- |

| | | | | | | | | | | |
|----------------------------|-----|----|--|---|-----|----------------------|--|----------------------------------|-------------------|-----|
| Hom UG- Sur-I 2.6 | KS | KH | Management of trauma case | Discuss the principles of pre-hospital care and causality management of a trauma victim including principles of triage | C/2 | Must know | Skill lab training Audio visual aids Small group discussion Small project | Viva OSCE | MCQ SAQ LAQ | -- |
| Hom UG- Sur-I 2.7 | PBL | SH | Resuscitation in trauma cases | Demonstrate the steps of Basic life support | P/2 | Must know | Skill lab training Audiovisual aid DOPS | Viva OSCE Small project | OSC E | --- |
| Hom UG- Sur-I 2.8 | PBL | SH | Management of trauma – Transport of injured | Demonstrate the transport of the injured in simulated setting | P/2 | Desirable to know | Skill lab training Audiovisual aid | OSCE | OSC E | |

6.3. Head injury; Examination of head injury case-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/Guilbert | Priority | TL MM | Assessment | | Integration |
|------------------|----------------------|--------|---------------------------------------|---|----------------|----------------------------|---|-----------------------------|-------------------|-------------|
| | | | | | | | | F | S | |
| Hom UG-Sur-I 3.1 | KS | K | Head injury and intracranial pressure | State the Monro Kellie doctrine about intracranial pressure | C/1 | Nice to know | Lecture | Viva | SAQ | -- |
| | | | | Enumerate the causes of raised intracranial pressure | C/2 | Must know | Lecture | | SAQ | |
| Hom UG-Sur-I 3.2 | KS | KH | Head injury pathophysiology, types | Describe Pathophysiology of head injuries Explain different types of head injuries like concussion, skull fracture, intracranial haemorrhage and diffuse axonal injuries | C/2 C/2 | Must know Must know | Lecture Audiovisual aid Small group discussion Case based discussion | Viva Clinical simulation | MCQ SAQ | |
| Hom UG-Sur-I 3.3 | KS | KH | Assessment of head injury | Describe Glasgow coma scale | C/1 | Must know | Lecture/ small group discussion | Viva OSCE Mini-CEX | MCQ SAQ LAQ | |

| | | | | | | | | | | |
|----------------------------|----|----|--|--|-----|-----------|--|--------------------------|-----|----------------|
| | | | | Discuss the neurological assessment of a patient with head injuries | C/2 | Must know | Audiovisual mode Clinical simulation | | | |
| Hom UG- Sur-I 3.4 | KS | KH | Investigations and management of head injury | Enumerate the appropriate investigations to be done in case of head injury | C/2 | Must know | Lecture/ small group discussion Audio visual aid | Viva Audiovisual aids | LAQ | Radiology |
| | HO | KH | Homoeopathic therapeutics for head injury | Discuss the Homoeopathic therapeutics for head injuries | C/1 | Must know | | | SAQ | Materia Medica |

6.4. Injury to chest and abdomen; Examination of chest and abdominal injury -

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/Guilbert | Priority | TL MM | Assessment | | Integration |
|------------------|----------------------|--------|--|--|----------------|-------------------|--|--------------|------------|-------------|
| | | | | | | | | F | S | |
| Hom UG-Sur-I 4.1 | KS | KH | Clinical features, investigations and management of chest injuries | Describe the clinical features of chest injuries | C/2 | Must know | Lecture Audiovisual aid Case based studies | Viva OSCE | SAQ LAQ | |
| | | | | List the appropriate investigations required in a case of chest injury | C/2 | Must know | | | | |
| | | | | Discuss the management of chest injury | C/2 | Desirable to know | | | | |
| Hom UG-Sur-I 4.2 | KS | KH | Chest injuries - flail chest and stove-in chest | Define flail chest | C/1 | Must know | Lecture Audiovisual aid | Viva | MCQ SAQ | |
| | | | | Explain the clinical features of flail chest | C/2 | Must know | | | | |
| | | | | Discuss the management of flail chest | C/2 | Desirable to know | | | | |
| | | | | Explain stove-in chest | C/2 | Nice to know | | | | |

| | | | | | | | | | | |
|----------------------------|----|----|--|--|---|---|---|--------------|-------------------|--|
| Hom UG- Sur-I 4.3 | KS | KH | Chest injuries -tension pneumothorax | <p>Define tension pneumothorax</p> <p>Enumerate the cause of tension pneumothorax</p> <p>Discuss the clinical features of tension pneumothorax</p> <p>Discuss the management of tension pneumothorax</p> | <p>C/1</p> <p>C/2</p> <p>C/2</p> <p>C/2</p> | <p>Must know</p> <p>Must know</p> <p>Must know</p> <p>Must know</p> | <p>Lecture</p> <p>Small group discussion</p> <p>Audiovisual aid</p> <p>Skill lab simulation</p> | Viva OSCE | SAQ LAQ MCQ | |
| Hom UG- Sur-I 4.4 | KS | KH | Chest injury - Thoracotomy | <p>Enumerate the indications for Emergency thoracotomy</p> | C/2 | Desirable to know | Lecture | Viva | SAQ | |
| Hom UG- Sur-I 4.5 | KS | KH | Abdominal injury - Clinical features, investigations and management of abdominal injuries | <p>Explain the clinical presentations of blunt abdominal trauma</p> <p>Enumerate the relevant investigations to be advised in a case of blunt abdominal trauma</p> | <p>C/2</p> <p>C/2</p> | <p>Must know</p> <p>Must know</p> | <p>Lecture</p> <p>Audiovisual aid</p> <p>Small group discussion</p> | Viva OSCE | MCQ SAQ LAQ | |

| | | | | | | | | | | |
|------------------|----|----|---|--|-----|-------------------|---|--------------|-------------------|--|
| | | | | Discuss the surgical management of blunt abdominal trauma | C/2 | Desirable to know | | | | |
| Hom UG-Sur-I 4.6 | KS | KH | Abdominal injuries-splenic trauma | Describe the clinical presentation of splenic trauma | C/2 | Must know | Lecture Audio visual aid Small group discussion | Viva OSCE | MCQ SAQ LAQ | |
| | | | | Discuss the diagnosis of splenic trauma | C/2 | Must know | | | | |
| | | | | Discuss the management of splenic trauma | C/2 | Desirable to know | | | | |
| Hom UG-Sur-I 4.7 | KS | KH | Abdominal injuries-Hepatic trauma | Describe the clinical presentation of Hepatic trauma | C/2 | Must know | Lecture Audiovisual aid Small group discussion | Viva | MCQ SAQ LAQ | |
| | | | | Discuss the diagnosis of Hepatic trauma | C/2 | Must know | | | | |
| | | | | Discuss the management of Hepatic trauma | C/2 | Desirable to know | | | | |
| Hom UG-Sur-I 4.8 | KS | KH | Abdominal injuries-pancreaticoduodenal trauma | Describe the clinical presentation of pancreaticoduodenal trauma | C/2 | Must know | Lecture Audiovisual aid | Viva | MCQ SAQ LAQ | |

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| | | | | Discuss the diagnosis of pancreaticoduodenal trauma | C/2 | Desirable to know | Small group discussion | | | |
| | | | | Discuss the management of pancreaticoduodenal trauma | C/2 | Nice to know | | | | |
| Hom UG- Sur-I 4.9 | KS | KH | Abdominal injuries- Renal trauma | Explain the clinical presentations of renal trauma | C/2 | Must know | Lecture Audiovisual aid Small group discussion | Viva | MCQ SAQ LAQ | |
| | | | | Discuss the diagnosis of renal trauma | C/2 | Desirable to know | | | | |
| | | | | Discuss the management of renal trauma | C/2 | Nice to know | | | | |

6.5. Wounds and wound healing; Scar and keloid; Examination of wounds-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| Hom UG-Sur-I 5.1 | KS | K | Types of wounds | Discuss various types of closed wounds Discuss various types of open wounds | C/1 | Must know Must know | Lecture Small group discussion | Viva | MCQ SAQ | FMT |
| Hom UG-Sur-I 5.2 | KS | KH | Wound healing process and its types | Discuss the various stages of wound healing Discuss the factors affecting the wound healing Discuss the types of wound healing | C/1 C/2 C/2 | Must know Desirable to know Must know | Lecture Audiovisual aid Small project | Viva | SAQ MCQ | Pathology |
| Hom UG-Sur-I 5.3 | PBL | SH | Examination of wound | Demonstrate the evaluation and assessment of wound | P/2 | Must know | Audiovisual aid Case based discussion DOPS | Viva Clinical performance OSCE | | |

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| Hom UG- Sur-I 5.4 | KS PBL | KH SH | Wound manageme nt | Describe the principles acute wound management Demonstrate cleaning and dressing of wound | C/2 P/2 | Must know | Lecture Audio-video mode Skill lab simulation Clinical Demonstration Wound dressing Audiovisual aid Small group discussion DOPS Small project | Viva Clinical performanc e OSCE | SAQ | -- |
| Hom UG- Sur-I 5.5 | KS | K KH KH | Surgical site infections | Classify surgical site infections. Enumerate the risk factors of surgical site infections Discuss the clinical presentation of surgical site infections | C/1 C/2 C/ 2 | Must know Must know Must know | Lecture Audiovisual aid Small group | Viva | MCQ SAQ LAQ | Pathology |

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| | HO | KH | Homeopathic management of surgical site infections | Discuss the scope of Homoeopathy in surgical site infections. Discuss the Homeopathic therapeutics for surgical site infections | C/1 C/1 | Must know Must know | | | | |
| Hom UG-Sur-I 5.6 | HO | KH | Wound management | Discuss the homoeopathic therapeutics for various types of injuries | C/2 | Must know | Lecture | Viva | SAQ | Materia Medica Repertory |
| Hom UG-Sur-I 5.7 | PBL | K SH KH | Wound management | Enumerate different types of Suture materials Demonstrate different types of Suture / knotting techniques Discuss the Principles of anastomosis | C/2 P/2 C/2 | Desirable to know Nice to know Nice to know | Tutorial Small project Skill lab simulation Audiovisual aid DOAP Tutorial Audiovisual aid | Viva | SAQ | |

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| Hom UG- Sur-I 5.8 | KS | KH | Scars and keloid | Describe hypertrophic scar and keloid | C/2 | Must know | Lecture | Viva | SAQ | |
| | HO | | | Discuss the management of Scars and Keloid along with Homoeopathic Therapeutics | C/2 | Must know | Lecture | Viva | SAQ | Materia Medica |

6.6. Haemorrhage, blood transfusion; Examination of a haemorrhagic case -

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbe rt | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| Hom UG- Sur-I 6.1 | KS | K | Types of haemorrha ge | Enumerate types of haemorrhage | C/2 | Must know | Lecture | Viva | MCQ SAQ | |
| Hom UG- Sur-I 6.2 | KS | KH | Manageme nt of haemorrha ge | Explain the basic concepts of hemostasis and mechanism of Haemostasis | C/1 | Nice to know | Lecture Audiovisual aid | Viva | SAQ LAQ | Physiology |
| Hom UG- Sur-I 6.3 | HO | KH | Management of haemorrhage with homoeopathy | Discuss homoeopathic therapeutics for haemorrhage | C/2 | Must know | Lecture | Viva | SAQ | Materia Medica Repertory |

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| Hom UG- Sur-I 6.4 | KS | KH | Blood transfusion and blood products | Enumerate the Indications for blood transfusion | C/1 | Must know | Lecture Small group discussion OSCE Small project | Viva | SAQ | Pathology |
| | | | | Explain the complications of blood transfusion | C/2 | Must know | | Viva | MCQ SAQ | |
| | | | | Describe various blood products and appropriate indications for their use | C/2 | Desirable to know | | | | |
| Hom UG- Sur-I 6.5 | KS | KH | Examination of haemorrhagic case | Discuss the assessment of patient with haemorrhage | C/1 | Must know | Audiovisual aid Clinical demonstration Small group discussion DOPS | Viva OSCE | SAQ | |
| | PBL | SH | | Demonstrate examination of a haemorrhagic case | P/2 | | | | | |
| Hom UG- Sur-I 6.6 | PBL | S | Blood transfusion procedure | Observe blood transfusion procedure | P/1 | Nice to know | Observing blood transfusion procedure | Logbook | -- | -- |

6.7. Shock; Examination of shock -

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| Hom UG-Sur-I 7.1 | KS | KH | Shock types, pathophysiology | Define shock | C/1 | Must know | Lecture | Viva | MCQ SAQ LAQ | Pathology Physiology |
| | | | | Enumerate the various types of shock | C/2 | Must know | Lecture | | | |
| | | | | Explain the pathophysiology of shock | C/2 | Desirable to know | Lecture Audiovisual aid | | | |
| Hom UG-Sur-I 7.2 | KS | KH | Clinical features, investigations and management of shock | Explain the clinical features of shock | C/2 | Must know | Lecture Audiovisual aid Small group discussion | Viva OSCE | MCQ SAQ LAQ | Pathology Practice of Medicine |
| | | | | Discuss the diagnosis of various types of shock | C/2 | Must know | | | | |
| | | | | Explain the complications of shock. | C/2 | Must know | | | | |

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| | | | | Discuss the management of shock | C/2 | Must know | | | | |
| Hom UG-Sur-I 7.3 | HO | KH | Homeopathic therapeutics for shock | Discuss the homoeopathic therapeutics for shock | C/1 | Must know | Lecture Small group discussion | Viva | SAQ | Materia Medica |

6.8. Fluid, electrolyte and acid base balance; Clinical examination and evaluation-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/Guilbert | Priority | TL MM | Assessment | | Integration |
|------------------|----------------------|--------|--|---|----------------|-------------------|--|--------------|------------|-------------------------|
| | | | | | | | | F | S | |
| Hom UG-Sur-I 8.1 | KH | K | Fluid, electrolyte and acid base balance | Describe the fluid compartments of the body | C/1 | Desirable to know | Tutorial | Viva | MCQ SAQ | Pathology Physiology |
| Hom UG-Sur-I 8.2 | KH | KH | Fluid, electrolyte and acid base balance | Identify the indications of fluid replacement | C/2 | Must know | Lecture Small group discussion Small project | Viva OSCE | SAQ | Biochemistry |
| | | | | Discuss the methods of estimation and replacement the Fluid and electrolyte in the surgical patient | C/2 | Desirable to know | | | | |

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| Hom UG- Sur-I 8.3 | KH | KH | Acid base balance | Enumerate the causes of metabolic acidosis | C/2 | Must know | Lecture Small group discussion | Viva | MCQ SAQ | Biochemistry Pathology |
| | | | | Describe the clinical features and laboratory findings of metabolic acidosis | C/2 | Must know | | | | |
| | | | | Discuss the management of metabolic acidosis | C/2 | Must know | | | | |
| Hom UG- Sur-I 8.4 | KH | KH | Acid base balance | Enumerate the causes of metabolic alkalosis | C/2 | Must know | Lecture Small group discussion | Viva | MCQ SAQ | Biochemistry Pathology |
| | | | | Describe the clinical features and laboratory findings of metabolic alkalosis | C/2 | Must know | | | | |
| | | | | Discuss the management of metabolic alkalosis | C/2 | Must know | | | | |

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| Hom UG- Sur-I 8.5 | KS | KH | Acid base balance | Enumerate the causes of respiratory acidosis | C/2 | Must know | Lecture Small group discussion | Viva | MCQ SAQ | Biochemistry Pathology |
| | | | | Describe the clinical features and laboratory findings of respiratory acidosis | C/2 | Must know | | | | |
| | | | | Discuss the management of respiratory acidosis | C/2 | Must know | | | | |
| Hom UG- Sur-I 8.6 | KS | KH | Acid base balance | Enumerate the causes of respiratory alkalosis | C/2 | Must know | Lecture Audiovisual aid | Viva | MCQ SAQ | Biochemistry Pathology |
| | | | | Describe the clinical features and laboratory findings of respiratory alkalosis | C/2 | Must know | | | | |
| | | | | Discuss the management of respiratory alkalosis | C/2 | Must know | | | | |

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| Hom UG- Sur-I 8.7 | KS | KH | Electrolyte balance – Potassium | Enumerate causes of Hyperkalemia Describe the clinical features and diagnosis of hyperkalemia Discuss the management of Hyperkalemia | C/2 C/2 C/2 | Must know Must know Must know | Lecture Small group discussion | Viva | SAQ | Biochemistry Practice of Medicine |
| Hom UG- Sur-I 8.8 | KS | KH | Electrolyte balance – Potassium | Enumerate causes of Hypokalemia Describe the clinical features and diagnosis of hypokalemia Discuss the management of Hypokalemia | C/2 C/2 C/2 | Must know Must know Must know | Lecture Small group discussion | Viva | SAQ | Biochemistry Practice of Medicine |
| Hom UG- Sur-I | KS | KH | Electrolyte balance – Sodium | Enumerate causes of Hypernatremia | C/2 | Must know | Lecture | Viva | SAQ | Biochemistry Practice of Medicine |

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| 8.9 | | | | Describe the clinical features and diagnosis of hypernatremia | C/2 | Must know | Small group discussion | | | |
| | | | | Discuss the management of Hyponatremia | C/2 | Must know | | | | |
| Hom UG-Sur-I 8.10 | KS | KH | Electrolyte balance – Sodium | Enumerate causes of Hyponatremia | C/2 | Must know | Lecture Small group discussion | Viva | SAQ | Biochemistry Practice of Medicine |
| | | | | Describe the clinical features and diagnosis of hyponatremia | C/2 | Must know | | | | |
| | | | | Discuss the management of Hyponatremia | C/2 | Must know | | | | |
| Hom UG-Sur-I 8.11 | KS | K | Electrolyte balance – Calcium | Enumerate causes of Hypercalcemia | C/2 | Must know | Lecture Small group discussion | Viva | SAQ | Biochemistry Practice of Medicine |
| | | | | Describe the clinical features and | C/2 | Desirable to know | | | | |

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| | | | | diagnosis of hypercalcemia Discuss the management of Hypercalcemia | C/2 | Nice to know | | | | |
| Hom UG- Sur-I 8.12 | KS | K | Electrolyte balance – Calcium | Enumerate causes of Hypocalcemia Describe the clinical features and diagnosis of hypocalcemia Discuss the management of Hypocalcemia | C/2 C/2 C/2 | Must know Desirable to know Nice to know | Lecture | Viva | SAQ | Biochemistry Practice of Medicine |

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| Hom UG- Sur-I 8.13 | PBL | KH | Fluid, electrolyte and acid base balance | Describe the assessment of fluid, electrolyte and acid base balance in a surgical case | P/2 | Must know | Case demonstrat ion | Clinical performanc e Case based discussion Assignment s | ---- --- | |
| | | SH | | Fluid replacement therapy | P/2 | | Skill lab, Simulation Clinical bedside training DOPS | | | |

6.9. Burns, skin grafting; Clinical examination-

| SL No | Competency | Miller | Content | SLO | Bloom/ Guilbe rt | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| Hom UG- Sur-I 9.1 | KS | K KH | Burns and skin grafting | Describe the pathophysiolo gy of burns Discuss the assessment of burn wound. Assessing size and depth of burns | C/2 C/2 | Must know Must know | Lecture Audiovisual aid Skill lab simulation | Viva OSCE | MCQ SAQ LAQ | Physiology |

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| | | | | Explain the principles of fluid resuscitation in burns cases | C/2 | Desirable to know | | | | |
| | | | | Discuss the management of burn wound | C/2 | Must know | | | | |
| Hom UG-Sur-I 9.2 | HO | KH | Burns and skin grafting | Discuss the scope of Homoeopathy in the management of burns Discuss the homoeopathic therapeutics for burns | C/2 | Must know | Lecture small group discussion | Viva | SAQ | Materia Medica Repertory |
| Hom UG-Sur-I 9.3 | PBL | SH | Burns and skin grafting | Examination of case of burns Assessment of burn wound | P/2 | Desirable to know | Simulation and skill lab training DOPS | Logbook OSCE | -- | -- |

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| Hom UG- Sur-I 9.4 | KS | K | Burns and skin grafting | Enumerate the indications for skin grafting Describe the various types of skin grafting | C/2 | Desirable to know | Lecture Audiovisual aid | Viva | SAQ | |
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6.10. Nutrition-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| Hom UG- Sur-I 10.1 | KS | KH | Nutrition | Enumerate the causes of malnutrition in surgical patients | C/1 | Must know | Lecture Small group discussion | Viva | SAQ | Physiology |
| | | | | Discuss the consequences of malnutrition in surgical patient. | C/2 | Desirable to know | | Viva | SAQ | |
| Hom UG- Sur-I 10.2 | KS | KH | Nutrition | Discuss the nutritional requirements of surgical patients | C/2 | Must know | Lecture Audiovisual aid | Viva | SAQ | Physiology |

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| | | | | Explain the methods of providing nutritional support. | | | Skill lab simulation | | | |
| Hom UG-Sur-I 10.3 | PBL | SH | Nutrition | Demonstrate various types artificial nutritional support in surgical patients | P/2 | Desirable to know | Simulation skill lab Small project DOPS | Viva OSCE DOPS | | |

6.11. Common surgical infections; Examination of common surgical infections-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| Hom UG-Sur-I 11.1 | KS | K | Boil | Define boil | C/1 | Must know | Lecture | Viva | MCQ SAQ | Pathology |
| | | KH | | Discuss clinical features complications of boil | C/2 | | | | | |
| Hom UG-Sur-I 11.2 | KS | KH | Carbuncle | Define carbuncle | C/1 | Must know | Lecture Audiovisual mode | Viva | MCQ SAQ | Pathology |
| | | | | Describe the pathology of carbuncle | C/2 | Must know | | | | |
| | | | | Discuss the clinical features complications of carbuncle | C/2 | Must know | | | | |

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| Hom UG- Sur-I 11.3 | KS | KH | Abscess | Define abscess | C/1 | Must know | Lecture Audiovisual aid | Viva | MCQ SAQ | Pathology |
| | | | | Enumerate the various types of abscesses | C/2 | | | | | |
| | | | | Explain clinical features of abscess | C/2 | | | | | |
| | | | | Discuss the management of abscess | C/2 | | | | | |
| Hom UG- Sur-I 11.4 | KS | KH | Cellulitis and erysipelas | Define cellulitis | C/1 | Must know | Lecture Audiovisual aid | Viva | SAQ MCQ | Pathology |
| | | | | Explain clinical features of cellulitis | C/2 | Must know | | | | |
| | | | | Define erysipelas | C/1 | Must know | | | | |
| | | | | Explain the clinical features of erysipelas | C/2 | Must know | | | | |

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| | | | | Discuss the difference between cellulitis and erysipelas | C/2 | Must know | | | | |
| Hom UG-Sur-I 11.5 | KS | KH | Hidradenitis suppurativa | Discuss the pathology of Hidradenitis suppurativa Explain the clinical features of Hidradenitis suppurativa | C/2 C/2 | Must know Must know | Lecture | Viva | SAQ MCQ | Pathology |
| Hom UG-Sur-I 11.6 | KS | K | Septicaemia and pyaemia | Define septicaemia. Enumerate the causes of septicemia discuss the clinical features of septicaemia | C/1 C/2 | Must know Must know | Lecture Small group discussion | Viva | LAQ SAQ MCQ | Pathology |
| Hom UG-Sur-I 11.7 | KS | K | Systemic inflammatory response syndrome | Define systemic inflammatory response syndrome (SIRS) | C/1 | Must know | Lecture Audiovisual aid | Viva | LAQ SAQ MCQ | Pathology |

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| | | KH | | Discuss the pathophysiology of SIRS | C/2 | Desirable to know | | | | |
| Hom UG-Sur-I 11.8 | PBL | SH | Common surgical infections | Demonstrate the examination of a case of common surgical infections like boil, carbuncle, cellulitis, erysipelas, hydradenitis suppurativa etc | P/2 | Must know | Small group discussion Clinical demonstration DOPS | Viva OSCE DOPS | Case based discussion Log book | |
| Hom UG-Sur-I 11.9 | HO | K | Common surgical infections | Discuss the therapeutics with specific indications for common surgical infections like boil, carbuncle, cellulitis, erysipelas and hidradenitis suppurativa | C/2 | Must know | Lecture | Viva | SAQ MCQ | Materia Medica Repertory |

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| Hom UG- Sur-I 11.10 | HO | KH | Common surgical infections Septicaemia and pyaemia | Discuss the role of Homoeopathy in septicaemia and pyaemia Discuss the homoeopathic therapeutics for septicaemia and pyaemia | C/2 | Must know | Lecture Small group discussion | Viva | SAQ | Materia Medica Repertory |
|------------------------------|----|----|---|---|-----|-----------|--------------------------------------|------|-----|--------------------------------|

6.12. Special infections; Clinical examination-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/ Gilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| Hom UG- Sur-I 12.1 | KS | KH | Tuberculosis | Describe the pathology of tuberculosis | C/1 | Desirable to know | Lecture Audiovisual aid Small group discussion | Viva | LAQ SAQ MCQ | Pathology Practice of Medicine |
| | | | | Explain the clinical features of tuberculosis | C/2 | Must know | | | | |
| | | | | | C/2 | Must know | | | | |

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| | | | | Discuss the diagnosis of tuberculosis | | | | | | |
| Hom UG-Sur-I 12.2 | KS | KH | Syphilis | Describe the pathology of syphilis Explain the types and clinical features of Syphilis | C/1 C/2 | Desirable to know Must know | Lecture Audiovisual aid | Viva | LAQ SAQ MCQ | Pathology Practice of Medicine |
| Hom UG-Sur-I 12.3 | KS | KH | AIDS | Discuss the pathogenesis of AIDS Explain the clinical features of AIDS | C/1 C/2 | Desirable to know Must know | Lecture | Viva | LAQ SAQ MCQ | Pathology Practice of Medicine |
| Hom UG-Sur-I 12.4 | KS | KH | Actinomycosis | Discuss the pathogenesis of Actinomycosis Describe the clinical features of Actinomycosis | C/2 C/2 | Desirable to know Must know | Lecture | Viva | LAQ SAQ MCQ | Pathology Practice of Medicine |
| Hom UG-Sur-I 12.5 | KS | KH | Leprosy | Discuss the pathogenesis of leprosy | C/1 | Desirable to know | Lecture | Viva | LAQ SAQ MCQ | Pathology Practice of Medicine |

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| | | | | Explain the types and clinical features of leprosy | C/2 | Must know | | | | |
| Hom UG-Sur-I 12.6 | KS | KH | Tetanus | Discuss the pathogenesis of Tetanus | C/1 | Desirable to know | Lecture | Viva | LAQ SAQ MCQ | Pathology Practice of Medicine |
| | | | | Explain the clinical features of Tetanus | C/2 | Must know | | | | |
| Hom UG-Sur-I 12.7 | KS | KH | Infective gangrene | Define gangrene. | C/1 | Must know | Lecture Audiovisual aid Small group discussion Case based discussion | Viva | LAQ SAQ MCQ | Pathology Practice of Medicine |
| | | | | Enumerate the causes of gangrene | C/2 | Must know | | | | |
| | | | | Discuss the clinical types of gangrene. | C/2 | Must know | | | | |
| | | | | Describe the clinical features | C/2 | Must know | | | | |
| | | | | Discuss the management of gangrene | C/2 | Must know | | | | |

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| Hom UG- Sur-I 12.8 | HO | K | Special infections | Discuss the homoeopathic therapeutics for special infections like Tuberculosis, Syphilis, AIDS, Actinomycosis, Leprosy and tetanus | C/2 | Must know | Lecture/ small group discussion | Viva | SAQ MCQ | Materia Medica Repertory |
| Hom UG- Sur-I 12.9 | HO | KH | Special infections – gangrene | Discuss the Homoeopathi c therapeutics for Gangrene | C/1 | Must know | Lecture/ small group discussion | Viva | SAQ MCQ | Materia Medica Repertory |
| Hom UG- Sur-I 12.1 0 | PBL | SH | Special infections – gangrene | Demonstrate the Examination of case of gangrene | P/2 | Must know | Clinical demonstration Audiovisual aid Skill lab training | Case based discussio n OCSE | OSCE | |

6.13. Concept of swelling- Tumours and Cysts; Clinical examination of swelling-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| Hom UG- Sur-I 13.1 | KS | K | Swelling concept | Define Tumour | C/1 | Must Know | Lecture | Viva | MCQ | Pathology |

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| Hom UG- Sur-I 13.2 | KS | KH | Tumours | Discuss the differences between benign and malignant tumours Differentiate different tumours like sarcoma, Fibrosarcoma, Naevus, Melanoma etc | C/2 | Must Know | Lecture Audiovisual aid | Viva | SAQ LAQ | Pathology |
| Hom UG- Sur-I 13.3 | HO | K | Tumours | Discuss Homoeopathic Therapeutics of Tumour | C/2 | Must Know | Lecture | Viva | MCQ SAQ | Pathology Organon: Miasm Materia Medica |
| Hom UG- Sur-I 13.4 | KS | K | Cyst | Define Cyst | C/1 | Must Know | Lecture | Viva | MCQ | Pathology |
| Hom UG- Sur-I 13.5 | KS | KH | Cyst | Explain Types of Cyst | C/2 | Must Know | Lecture Audiovisual aid | Viva | SAQ LAQ | Pathology |

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| Hom UG- Sur-I 13.6 | HO | K | Cyst | Discuss the homoeopathic therapeutics for Cyst | C/2 | Must Know | Lecture | Viva | MCQ SAQ | Pathology Organon: Miasm Materia Medica |
| Hom UG- Sur-I 13.7 | KS | KH | Lipoma, Fibroma, Adenoma, Neuroma, Neurofibro ma, Haemangio ma | Explain Lipoma, Fibroma, Adenoma, Neuroma, Neurofibroma, Haemangioma | C/2 | Must Know | Lecture Audiovi sual aid | Viva | SAQ LAQ MCQ | Pathology |
| Hom UG- Sur-I 13.8 | HO | KH | of Lipoma, Fibroma, Adenoma, Neuroma, Neurofibr oma, Haemangi oma | Discuss the Homoeopathic therapeutics of Lipoma, Fibroma, Adenoma, Neuroma, Neurofibroma, Haemangioma | C/2 | Must Know | Lecture Small group discussi on | Viva | MCQ SAQ LAQ | Pathology Organon: Miasm Materia Medica |
| Hom UG- Sur-I 13.9 | PBL | SH | Tumour & Swelling | Demonstrate examination of Tumour and swelling of different types | P/2 | Must Know | Clinical demonstra tion DOPS Small group discussion | OSCE | Mini- cex OSCE | |

6.14. Hernia - Abdominal hernias, Basic Anatomy, Types causes, Clinical features Complications, Management; Examination of hernia case-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/Guilbert | Priority | TL MM | Assessment | | Integration |
|-------------------|----------------------|-------------|-----------------|---|---|--|---|------------|---------------------------|---------------------------|
| | | | | | | | | F | S | |
| Hom UG-Sur-I 14.1 | KS | K KH | Hernia | Define Hernia Enumerate the causes of hernia Discuss the clinical classification of hernias Discuss the principles of management of hernias Discuss the operative approaches to hernias | C/1 C/2 C/2 C/2 C/2 | Must Know Must know Must know Desirable to know Nice to know | Lecture Audiovisual aids Small group discussion | Viva | MCQ SAQ LAQ | Anatomy , Pathology |
| Hom UG-Sur-I 14.2 | KS | KH | Inguinal hernia | Describe the basic anatomy of inguinal canal | C/1 | Must know | Lecture Audiovisual aid Small group discussion | Viva | MCQ SAQ LAQ | Anatomy |

| | | | | | | | | | | |
|-------------------|----|----|------------------|---|---------------------------|--|---|------|-------------------|---------|
| | | | | Discuss the types, clinical presentation and diagnosis of inguinal hernia | C/2 | Must know | | | | |
| | | | | Discuss the surgical management of inguinal hernia | C/2 | Nice to know | | | | |
| Hom UG-Sur-I 14.3 | KS | KH | Femoral hernia | Describe the basic anatomy of femoral canal Discuss the clinical features and diagnosis of femoral hernia Discuss the surgical management of Femoral hernia | C/1 C/2 C/2 | Must know Must know Nice to know | Lecture Audiovisual aids Small group discussion | Viva | MCQ SAQ LAQ | Anatomy |
| Hom UG-Sur-I 14.4 | KS | KH | Umbilical hernia | Describe the various types of umbilical hernia Discuss the clinical features and diagnosis of Umbilical hernia | C/2 C/2 | Must know Must know | Lecture Audiovisual aids | Viva | MCQ SAQ LAQ | |

| | | | | | | | | | | |
|-----------------------------|----|----|----------------------|--|---------------------------|---|---------------------------------|------|---------------------------|--|
| Hom UG- Sur-I 14.5 | KS | KH | Epigastric hernia | Explain the pathology of epigastric hernia Describe the clinical features of epigastric hernia | C/2 C/2 | Must know Must know | Lecture Audiovisual aids | Viva | MCQ SAQ LAQ | |
| Hom UG- Sur-I 14.6 | KS | KH | Incisional hernia | Describe etiology of incisional hernia Discuss the clinical features of incisional hernia Discuss the management of incisional hernia | C/2 C/2 C/2 | Must know Must know Nice to know | Lecture Audiovisual aids | Viva | MCQ SAQ LAQ | |
| Hom UG- Sur-I 14.7 | KS | KH | Spigelian hernia | Explain spigelian hernia | C/2 | Desirable to know | Lecture Audiovisual aids | Viva | MCQ SAQ | |
| Hom UG- Sur-I 14.8 | KS | KH | Lumbar hernia | Explain lumbar hernia | C/2 | Desirable to know | Lecture Audiovisual aids | Viva | MCQ SAQ | |

| | | | | | | | | | | |
|------------------------------|-----|----|------------------|--|-----|-------------------|--|------------------|---------------------|--|
| Hom UG- Sur-I 14.9 | KS | KH | Traumatic hernia | Explain traumatic hernia | C/2 | Desirable to know | Lecture Audiovisual aids | Viva | MCQ SAQ | |
| Hom UG- Sur-I 14.10 | KS | KH | Obturator hernia | Explain obturator hernia | C/2 | Desirable to know | Lecture Audiovisual aids | Viva | MCQ SAQ | |
| Hom UG- Sur-I 14.11 | HO | KH | Hernia | Discuss the Homoeopathic Therapeutics for Hernia | C/2 | Must Know | Lecture Small group discussion | Viva | MCQ/ SAQ/ LAQ | Pathology Organon: Miasm Materia Medica |
| Hom UG- Sur-I 14.12 | PBL | SH | Hernia | Demonstrate examination of hernia | P/2 | Must Know | Clinical demonstration DOPS Small group discussion | OSCE Mini-cex | Mini-cex | |

6.15. Ulcers; Clinical examination of ulcer-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/Guilbert | Priority | TL MM | Assessment | | Integration |
|-------------------|----------------------|--------|---------|--|----------------|-----------|--|------------------|-------------------|--|
| | | | | | | | | F | S | |
| Hom UG-Sur-I 15.1 | KS | K | Ulcer | Define Ulcer | C/1 | Must Know | Lecture | Viva | MCQ | Pathology Organon: Miasm Materia Medica |
| Hom UG-Sur-I 15.2 | KS | KH | Ulcer | Describe different classification of Ulcer | C/2 | Must Know | lecture | Viva | MCQ SAQ LAQ | Pathology |
| Hom UG-Sur-I 15.3 | HO | KH | Ulcer | Explain therapeutics of ulcer | C/1 | Must Know | Lecture/ Small group discussion | Viva | MCQ/SAQ/LAQ | Pathology Organon: Miasm Materia Medica |
| Hom UG-Sur-I 15.4 | PBL | SH | Ulcer | Demonstrate examination of ulcer | P/2 | Must Know | Clinical demonstration DOPS OSCE Small group discussion | OSCE Mini-cex | OSCE Mini-cex | |

6.16. Sinus and Fistula; Clinical examination of Sinus and Fistula-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/Guilbert | Priority | TL MM | Assessment | | Integration |
|-------------------|----------------------|--------|-------------------|--|----------------|-----------|--|------------|-------------------|--|
| | | | | | | | | F | S | |
| Hom UG-Sur-I 16.1 | KS | K | Sinus and Fistula | Define sinus and fistula | C/1 | Must Know | Lecture | Viva | MCQ | Pathology |
| Hom UG-Sur-I 16.2 | KS | KH | Sinus and Fistula | Explain sinus and fistula | C/2 | Must Know | Lecture | Viva | MCQ SAQ LAQ | Pathology Organon: Miasm Materia Medica |
| Hom UG-Sur-I 16.3 | PBL | SH | Sinus and Fistula | Demonstrate examination of sinus and fistula | P/2 | Must Know | Clinical demonstration DOPS Small group discussion | OSCE | OSCE | |
| Hom UG-Sur-I 16.4 | HO | K | Sinus and Fistula | Explain therapeutics of sinus and fistula | C/1 | Must Know | Lecture Small group discussion | Viva | MCQ SAQ LAQ | Organon: Miasm Materia Medica |

7. Teaching learning methods

| Lectures (Theory) | Non-lectures (Practical/Demonstrative) |
|------------------------|--|
| Lectures | Clinical demonstration |
| Small group discussion | Problem based discussion |
| Integrated lectures | Case based learning |
| | Assignments |
| | Library reference |
| | Self-learning |

8. Details of assessment

Note- The assessment in II BHMS shall be done only as Internal Assessment (IA) in terms of Periodical Assessments (PA) and Term Tests (TT) as detailed below. There shall not be any Final University Examination (FUE) at this level. The marks obtained in IA during II BHMS will be added to the marks of IA in the III BHMS University Examination.

Overall Scheme of Internal Assessment (IA)*

| Professional Course/ Subject | Term I (1-6 Months) | | Term II (7-12 Months) | |
|---------------------------------|------------------------|------------------------|-------------------------|--------------------------|
| II BHMS/ | PA I (end of 3 months) | TT I (end of 6 months) | PA II (end of 9 months) | TT II (end of 12 months) |

| | | | | |
|---------|----------------------------|---|-------------------------|---|
| Surgery | 20 Marks Viva- A | 100 Marks Clinical/Practical and Viva - E i) Viva voce -50 marks ii) Clinical/practical- 50 Surgical Case taking - 25marks (Mandatory); Examination of wound/Cleaning and dressing of wound/Demonstration of Steps of Basic life support/Transport of the injured /Demonstration of suturing technique. (<i>Demonstration of any one of the procedures mentioned</i>) – 25 marks | 20 Marks Viva- B | 100 Marks Clinical/Practical and Viva - F i) Viva voce -50 marks ii) Clinical/practical- 50 Surgical case taking and Examination of surgical case – 15+15=30 marks; Surgical case file (5 cases)-20 marks |
|---------|----------------------------|---|-------------------------|---|

***Method of Calculation of Internal Assessment Marks in II BHMS for Final University Examination to be held in III BHMS:**

| Marks of PA I | Marks of PA II | Periodical Assessment Average PA I+ PA II /2 | Marks of TT I | Marks of TT II | Terminal Test Average TT I + TT II / 200 x 20 | Final Internal Assessment Marks |
|---------------|----------------|--|---------------|----------------|--|---------------------------------------|
| A | B | D | E | F | G | D+G/2 |

9. List of recommended text/reference books

- Williams, N., O'Connell, P. R., & McCaskie, A. (2018).
- *Bailey and Love's Short Practice of Surgery, 27th Edition: the Collector's Edition*. Chapman and Hall/CRC.
- Sriram Bhat. (2019). *SRB's manual of surgery*. Jaypee Brothers.
- A concise text book of surgery, 11th edition – S Das
- Das, S. (2024). *A Manual on Clinical Surgery*. Jaypee Brothers Medical Publishers Pvt Limited.
- Sriram, B. M. (2019). *SRB's clinical methods in surgery*. Jaypee Brothers Medical Publishers.
- Kulkarni, S. (2002). *Surgery Therapeutics*. B. Jain Publishers.
- Lilienthal, S. *Homoeopathic Therapeutics*.
- Willis Alonzo Dewey. (2018). *Practical Homeopathic Therapeutics*. B. Jain Publishers.

10. List of Contributors:

- I. Dr. Thankaraj B
Professor & HOD Department of Surgery
Nehru Homoeopathic Medical College & Hospital
New Delhi

- II. Dr. Jigar Shah
Professor in Department of Surgery
Smt. Malini Kishore Sanghvi Homoeopathic Medical College & Hospital
Karjan, Dist: Vadodara, Gujarat

Subject: Homoeopathic Materia Medica

Subject code: HomUG-HMM-II

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1. Preamble

Homoeopathic Materia Medica is the study of the action of drugs on healthy human being as a whole taking into consideration individual susceptibility and its reaction to various circumstances and time. A good prescription by a Homoeopath mainly depends upon the case receiving, processing and a sound knowledge of Homoeopathic Materia Medica.

Each drug in Materia Medica not only has its own personality with its mental and physical constitution but also has its own affinity to an area, direction, spread, tissue, organ; system. Study of a drug in context of altered sensation, function and structure covers the Pathology caused by it, which is also expressed in the pathogenesis of the drugs. Materia Medica also has symptoms from Toxicological and Clinical proving. All this knowledge is of utmost importance in order to apply the remedies in various clinical conditions. This can be achieved only by integrating the study of Materia Medica with other parallel subjects taught during the course.

Apart from the source books of Materia Medica there are different types of Materia Medica constructed on different philosophical backgrounds by different authors. Materia Medica also forms the platform of various repertories. Therefore, it becomes very important for a student of Homoeopathy to learn the plan and construction of all the basic Materia Medica in order to understand their practical utility in practice.

It is also important to keep in mind that the end point of the teaching of HMM is not to burden the student with information of a greater number of remedies but to equip with an approach which will help to develop the vision towards self-guided study and apply the knowledge in practice.

This self-directed learning can ultimately lead to a critical approach of studying Materia Medica hence empowering evidence-based practice and initiate the process of lifelong learning. Exploring Materia Medica is an endless journey as newer illnesses will keep on emerging and newer drugs or undiscovered facets of existing drugs will be needed to explore for managing these situations.

2. Course outcomes

- i. To grasp the basic concept and philosophy of Homeopathic Materia Medica based on Hahnemannian directions
- ii. To understand the different sources and types of Materia Medica
- iii. To mould Homoeopathic students by equipping them to readily grasp the symptoms of the sick individual corresponding to the symptoms of the drug.
- iv. To understand the drug with its pharmacological data, adaptability, sphere of action, along with characteristic sensations and functions both at level of mind and body along with doctrine of signatures.
- v. To construct the portrait of the drug with its predisposition, disposition both mental and physical, diathesis and disease expression with Miasmatic correlation and its susceptibility expression at various times taking in to consideration of the environment around him/ her.
- vi. To understand the drug from its therapeutic application in various pathological conditions and allied clinical subjects like practice of medicine, surgery, obstetrics and gynaecology.
- vii. To understand the group characteristics of the drugs and the individualizing symptoms of the individual remedies of the group.
- viii. To differentiate medicines arising from the reportorial process and to arrive at an appropriate similimum.
- ix. To grasp the concept of remedy relationship and its application in practice
- x. To understand the Miasmatic expressions and evolution in a given drug
- xi. To understand and apply the bio-chemic system of medicine in practice
- xii. To understand and apply the utility of mother tinctures in practice

3. Learning objectives

At the end of BHMS II course, the students should be able to-

- i. Discuss the different approaches for studying Homoeopathic Materia Medica.
- ii. Understand the drug picture of medicines in the syllabus of II BHMS in context of its pharmacological data, constitution, temperament, sphere of action, pathogenesis, ailments from, modalities, mentals, physical generals and particulars, miasm and relationship with other remedies including the doctrine of Signature.
- iii. Integrate the knowledge of Anatomy, Physiology, Pharmacy, Psychology, Organon of Medicine, Pathology and Toxicology for the understanding of a particular drug.
- iv. Compare and contrast symptoms of similar remedies of I and II BHMS syllabus.
- v. Demonstrate the steps of case taking as per guidelines given in Organon of medicine.
- vi. Demonstrate basic physical examination skills.
- vii. Recognise the importance of interpretation of basic investigations in a given case.
- viii. Analyse the symptoms of a case to categorize them as Mentals, Physical Generals and Particulars.
- ix. Recognise the PQRS of a drug in the case taken.

4. Course content and its term-wise distribution(theory)

4.1 Introductory lectures

- 4.1.1** Assessment of Entry Behaviour for I BHMS syllabus
- 4.1.2** Different approaches for studying Homoeopathic Materia Medica
- 4.1.3** Integrating the knowledge of Pathology, Toxicology, Practice of Medicine, Surgery and Gynaecology-Obstetrics in a better understanding of Homoeopathic Materia Medica

4.2 Homoeopathic medicines:

| | | |
|---------------------------|----------------------------|------------------------|
| 1. Acetic Acid | 17.Cactus Grandiflorus | 33. Helleborus Niger |
| 2. ActeaRacemosa | 18. Calcarea Arsenicosa | 34. Hyoscyamus Niger |
| 3. Aesculus Hippocastanum | 19.Calcarea Iodata | 35. Kali Bichromicum |
| 4. AgaricusMuscarius | 20. Camphora | 36. Kali Bromatum |
| 5. Agnus Castus | 21. Cannabis Indica | 37. KaliCarbonicum |
| 6. Alumina | 22. Cannabis Sativa | 38.Natrum Carbonicum |
| 7. Ambra Grisea | 23. Cantharis | 39. Nux Moschata |
| 8. AnacardiumOrientalis | 24. Cardus Marianus | 40. Opium |
| 9. Antimonium Arsenicosum | 25. Causticum | 41. Petroleum |
| 10. ApocynumCannabinum | 26. Ceanothus Americanus | 42. Phosphorus |
| 11. Arsenicum Iodatum | 27. Chelidonium Majus | 43. Secale Cornutum |
| 12. Argentum Nitricum | 28. Chininum Arsenicosum | 44. Sepia |
| 13. BaptisiaTinctoria | 29. Digitalis Purpurea | 45. Stramonium |
| 14. Berberis Vulgaris | 30. Echinacea Angustifolia | 46. Thuja Occidentalis |
| 15. Bellis Perennis | 31. Equisatum Hyemale | 47. Urtica Urens |
| 16. Bromium | 32. Ferrum Metallicum | 48. Veratrum Album |

4.3 Content for Term I

4.3.1 Introductory Lectures:

4.3.1.1 Assessment of Entry Behavior for I BHMS syllabus

4.3.1.1.1 Different approaches for studying Homoeopathic Materia Medica

4.3.1.2 Integrating the knowledge of Pathology, Toxicology, Practice of Medicine, Surgery and Gynaecology-Obstetrics in better understanding of Homoeopathic Materia Medica

4.3.2 Homoeopathic medicines:

| | | |
|---------------------------|---------------------------|------------------------|
| 1. Acetic Acid | 9. Cardus Marianus | 17. Kali Bromatum |
| 2. Aesculus Hippocastanum | 10. Causticum | 18. Kali Carbonicum |
| 3. Agaricus Muscarius | 11. Ceanothus Americanus | 19. Natrum Carbonicum |
| 4. Alumina | 12. Chelidonium Majus | 20. Opium |
| 5. Anacardium Orientalis | 13. Chininum Arsenicosum | 21. Thuja Occidentalis |
| 6. Apocynum Cannabinum | 14. EchinaceaAngustifolia | 22. Urtica Urens |
| 7. Baptisia Tinctoria | 15. Helleborus Niger | |
| 8. Bellis Perrenis | 16. Kali Bichromicum | |

4.4 Contents for Term II:

Homoeopathic medicines:

| | | |
|-------------------------|-----------------------|----------------------|
| 1. Actea Racemosa | 11. Calcarea Iodatum | 21. Petroleum |
| 2. Agnus Castus | 12. Camphora | 22. Phosphorus |
| 3. Ambra Grisea | 13. Cannabis Indica | 23. Secale Cornuatum |
| 4. AntimoniumArsenicum | 14. Cannabis Sativa | 24. Sepia |
| 5. Argentum Nitricum | 15. Cantheris | 25. Stramonium |
| 6. Arsenicum Iodatum | 16. DigitalisPurpurea | 26. Veratrum Album |
| 7. Berbers Vulgaris | 17. EquisatumHyemale | |
| 8. Bromium | 18. Ferrum Metallicum | |
| 9. Cactus Grandiflora | 19. Hyoscyamus Niger | |
| 10. Calcarea Aarsenicum | 20. Nux Moschata | |

Non-lectures shall be equally distributed to both term I and II, as per the feasibility of individual institution

5. Teaching hours

5.1. Gross division of teaching hours

| Homoeopathic Materia Medica | | |
|-----------------------------|--------------------------|------------------------------|
| Year | Teaching hours- Lectures | Teaching hours- Non-lectures |
| II BHMS | 150 | 100 |

5.2. Teaching hours theory

| S. No. | List of Topics | Hours |
|--------|--|------------|
| 1. | Assessment of Entry Behavior of I BHMS syllabus | 2 |
| 2. | Different approaches for studying Homoeopathic Materia Medica | 4 |
| 3. | Integrating the knowledge of Pathology and Toxicology, Practice of Medicine, Surgery and Gynaecology-Obstetrics in better understanding of Homoeopathic Materia Medica | 2 |
| 4. | Study of Drug pictures (Term I) | 70 |
| 5. | Study of Drug pictures (Term II) | 72 |
| | Total | 150 |

5.3. Teaching hours Non-lecture

| Sr. No | Non-Lecture Teaching Learning methods | Term | Time Allotted per Activity (Hours) |
|--------|--|--------|---------------------------------------|
| 1 | Clinical(to be integrated with topics under Pathology, Practice of Medicine, Surgery and ObGy) | I & II | 75 |
| 2 | Demonstrattion | I & II | 25 (Distribution as mentioned below) |
| 2(a) | Seminar / Tutorials | | 10 |
| 2(b) | Problem based learning/ Case Based Learning | | 10 |
| 2(c) | Assignment/ Symposium / Group discussion | | 5 |
| | Total | | 100 |

6. Content mapping (competencies table)

6.1 Competencies table theory

| Sl. No. | Competency | Millers Level: | Content | SLO/ Outcome | Blooms Domain / Guilbert's Level | Priority | T-L Methods/ media | Assessment | | Integration |
|-------------------------|-------------------|----------------|---|--|----------------------------------|----------|--|---|-------------------|--|
| | | | | | | | | Formative | Summative | |
| HomUG-HMM-II-1. | K & S PC HO | KH K | Assessment of Entry Behaviour of I BHMS syllabus | Recall the knowledge of I BHMS syllabus for Materia Medica | C1 | MK | Group Discussion | MCQ, viva | MCQ SAQ LAQ | Spiral integration with Homoeopathic Materia Medica Vertical integration with Anatomy, Physiology, Pharmacy, Psychology, Organon) |
| HomUG-HMM-II-2.1 | | | Different approaches for studying Homoeopathic Materia medica | Enumerate the different approaches for studying Homoeopathic Materia medica | C2 | MK | Lecture PPT Library references | MCQ Assignm ent Project viva | SAQ | Horizontal integration with subjects of Pathology , Toxicology , Physiology Organon , Anatomy , Psychology and Homoeopathic pharmacy |
| HomUG-HMM-II-2.2 | | | | Explore the scope and limitation of each approaches for studying Homoeopathic Materia Medica | | | | | | |

| Sl. No. | Competency | Millers Level: | Content | SLO/ Outcome | Blooms Domain / Guilbert's Level | Priority | T-L Methods/ media | Assessment | | Integration |
|------------------|-------------------|----------------|---|---|----------------------------------|----------|----------------------------|---|-------------------|---|
| | | | | | | | | Formative | Summative | |
| HomUG-HMM-II-3. | | | Integrating the knowledge of Pathology, Toxicology, Practice of Medicine, Surgery and Gynaecology-Obstetrics in better understanding of Homoeopathic Materia medica | Integrate the knowledge of Pathology, toxicology, Practice of Medicine, Surgery and Gynaecology-Obstetrics in understanding the evolution of symptoms of remedies | C2 | MK | Lecture Team teaching | MCQ Assignm ent Project viva | SAQ | Horizontal integration with subjects of Pathology Toxicology , and Organon |
| HomUG-HMM-II-4.1 | K & S PC HO | KH K | Individual Homoeopathic medicines | Mention the common name, source/ family/kingdom and the prover | C1 | NK | Lecture/ Specimen | MCQ Viva | MCQ | Vertical integration with Pharmacy |
| HomUG-HMM-II-4.2 | | | | Correlate with doctrine of signature | C2 | NK | Lecture/ Specimen | MCQ Viva | MCQ | Vertical integration with Pharmacy and Physiology |
| HomUG-HMM-II-4.3 | | | | List the sphere of action | C1 | MK | Lecture Self – learning | Assignm ent Project | LAQ SAQ MCQ | Horizontal |

| Sl. No. | Competency | Millers Level: | Content | SLO/ Outcome | Blooms Domain / Guilbert's Level | Priority | T-L Methods/ media | Assessment | | Integration |
|--------------------------|------------|----------------|---------|---|----------------------------------|----------|------------------------|------------|-----------|--|
| | | | | | | | | Formative | Summative | |
| | | | | | | | | MCQ | Viva | Integration with Pathology, Toxicology, |
| HomUG-HMM-II-4.4 | | | | Narrate the 'ailments from' | C1 | | Small Group Discussion | Viva | | ObGy, PM, Surgery and Organon |
| HomUG-HMM-II-4.5 | | | | Describe the constitution and temperament | C1 | | Black Board | | | Vertical integration with Anatomy Pharmacy, Psychology and Physiology |
| HomUG-HMM-II-4.6 | | | | Explain the mental symptoms | C1 | | PPT | | | |
| HomUG-HMM-II-4.7 | | | | Explain the physical generals | C1 | | Handouts Role play | | | |
| HomUG-HMM-II-4.8 | | | | Outline the general modalities | C1 | | PBL | | | |
| HomUG-HMM-II-4.9 | | | | Describe the particular symptoms and modalities | C2 | | | | | |
| HomUG-HMM-II-4.10 | | | | Correlate pathogenesis with knowledge of Toxicology, Pathology, Practice of Medicine, Surgery and | C2 | | | | | |

| Sl. No. | Competency | Millers Level: | Content | SLO/ Outcome | Blooms Domain / Guilbert's Level | Priority | T-L Methods/ media | Assessment | | Integration |
|--------------------------|------------|----------------|---------|--|----------------------------------|----------|--------------------|------------|-----------|-------------|
| | | | | | | | | Formative | Summative | |
| | | | | Gynaecology-Obstetrics and miasm | | | | | | |
| HomUG-HMM-II-4.11 | | | | Mention the Relationships of medicines | C2 | | | | | |
| HomUG-HMM-II-4.12 | | | | Compare and contrast from the related remedies of First and Second BHMS Syllabus | C2 | | | | | |

6.2 Competencies table practical/clinical

| S. No. | Domain of Competency | Millers Level: | Content | SLO/ Outcome | Blooms Domain / Guilbert's Level | Priority | T-L Methods/media | Assessment | | Integration |
|-------------------------|-------------------------|----------------|---------------------------------|--|----------------------------------|----------|----------------------------|----------------------|----------------------|---|
| | | | | | | | | Formative | Summative | |
| HomUG-HMM-II-5.1 | K & S PC HO CS | SH KH | Case taking | Demonstrate the steps of case taking as per guidelines given in Organon of medicine. | P/A2 | MK | Demonstration Checklist | CBD Small project | Clinical performance | Horizontal Integration with Pathology, ObGy, Surgery, Practice of Medicine and Organon |
| HomUG-HMM-II-5.2 | PBLI Prf | | Clinical examination | Demonstrate the basic clinical examination skills | P/A2 | | | | | |
| HomUG-HMM-II-5.3 | | | Interpretation of investigation | Recognise the importance of interpretation of basic investigations. | C2 | | | | | |
| HomUG-HMM-II-5.4 | | | Case analysis | Analyse the symptoms to segregate the characteristic Mentals, Physical General and Particulars | C2 | | | | | |

7. Teaching learning methods

| Lectures (Theory) | Non-lectures (Practical/Demonstrative) |
|------------------------|--|
| Lectures | Clinical demonstration |
| Small group discussion | Problem based discussion |
| Integrated lectures | Case based learning |
| | Tutorials |
| | Seminars |
| | Symposium |
| | Assignments |
| | Library reference |
| | Self-learning |

8. Details of assessment

8.1 Overall Scheme of Assessment (Summative)

| Sr. No | Professional Course | Term I (1-6 Months) | | Term II (7-12 Months) | | |
|--------|--------------------------|------------------------|--|-------------------------|------------------------|--|
| 1 | Second Professional BHMS | PA I (end of 3 months) | TT I (end of 6 months) | PA II (end of 9 months) | FUE (end of 12 months) | |
| | | 10 Marks Viva | 50 Marks Practical/ Viva i) Viva voce -25 marks ii) Clinical performance – 25 marks (Case Taking and analysis of symptoms) | 10 Marks Viva | 100 marks theory | 100 marks (Clinical/practical+ Viva+ IA) |

PA: Periodical Assessment; TT: Term Test; FUE: Final University Examinations; IA: Internal Assessment

8.2 Number of papers and marks distribution for Final University Examination (FUE)

| Sr. No. | Course Code | Papers | Theory | Practical/ Clinical | Viva Voce | Internal Assessment** | Grand Total |
|---------|--------------|--------|------------|--|-----------|--|-------------|
| 1 | HomUG-HMM-II | 01 | 100 marks* | 50 marks i) Journal -10 marks (Five acute and 5 chronic cases) ii) Case taking and analysis of symptoms --- 40 marks | 40 marks | 10 marks (Marks of PA I + TT I + PA II) | 200marks |

***30 % of questions shall be from I BHMS syllabus and 70 % of questions shall be from II BHMS syllabus.**

****Method of calculation of Internal Assessment marks for Final University Examination:**

Marks of IA- (Marks of PA-1 + Marks of TT + Marks of PA-2) / 70 X 10

8.3 Paper Layout

Summative assessment (FUE): Theory- 100 marks

| | |
|------------|-----------------|
| MCQ | 10 marks |
| SAQ | 40 marks |
| LAQ | 50 marks |

8.4 Distribution of questions for theory exam

| Sr. No | Paper | | | D Type of Questions | | |
|--------|--|-------------------|-----------------------------|------------------------|------------------|-------------------|
| | | | | MCQ (1 Mark) | SAQ (5 Marks) | LAQ (10 Marks) |
| | A List of Topics | B Term | C Marks | | | |
| 1 | BHMS I Syllabus | - | Refer to table 8.5 below | 05 | 03 | 01 |
| 2 | Different approaches for studying Homoeopathic Materia Medica | I | | 0 | 01 | 0 |
| 3 | Integrating the knowledge of Pathology and Toxicology in better understanding of Homoeopathic Materia Medica | I | | 0 | 0 | 0 |
| 4 | Homoeopathic Medicines of II BHMS (48) | I&II | | 05 | 04 | 04 |

8.5 Theme-wise distribution:

| Theme | Topics | Term | Marks | MCQ's | SAQ's | LAQ's |
|-------|---|------|-------|-------|-------|-------|
| A-D | BHMS I Syllabus | - | 30 | 5 | 3 | 1 |
| E | Different approaches for studying Homoeopathic Materia Medica | I | 5 | 0 | 1 | 0 |
| F | Homoeopathic Medicines of II BHMS (48) | I&II | 65 | 5 | 4 | 4 |

8.6 Question paper blueprint

| A Question Serial Number | B Type of Question | Question Paper Format (Refer table 8.5 for themes) |
|-----------------------------|--|---|
| Q1 | Multiple Choice Questions(MCQ) 10 Questions 1 mark each All compulsory Must know part: 7 MCQ Desirable to know: 2 MCQ. Nice to know: 1 MCQ | 1. Theme A-D 2. Theme A-D 3. Theme A-D 4. Theme A-D 5. Theme A-D 6. Theme F 7. Theme F 8. Theme F 9. Theme F 10. Theme F |

| | | |
|----|---|--|
| Q2 | <p>Short answer Questions (SAQ)</p> <p>Eight Questions</p> <p>5 Marks Each</p> <p>All compulsory</p> <p>Must Know part: 6 SAQ</p> <p>Desirable to Know: 2 SAQ</p> | <ol style="list-style-type: none"> 1. Theme A-D 2. Theme A-D 3. Theme A-D 4. Theme E 5. Theme F 6. Theme F 7. Theme F 8. Theme F |
| Q3 | <p>Long answer Questions (LAQ)</p> <p>Five Questions</p> <p>10 marks each</p> <p>All compulsory</p> <p>All questions on Must Know</p> <p>No Questions on Nice to Know and Desirable to Know</p> | <ol style="list-style-type: none"> 1. Theme A-D 2. Theme F 3. Theme F 4. Theme F 5. Theme F |

9. List of recommended text/reference books

- Allen H.C. (2005). Keynotes Rearranged and Classified with Leading Remedies of the Materia Medica and Bowel Nosodes, (Reprint edition), B.Jain Publishers, New Delhi
- Choudhuri N.M. (2006). A Study On Materia Medica Enriched with real case studies, (Reprint revised edition). B.Jain Publishers, New Delhi.
- Kent J.T. (2015). Lectures on Homoeopathic Materia Medica (Reprint edition,) B.Jain Publishers, New Delhi.
- Burt W. (2009). Physiological Materia Medica, (Third edition) B.Jain Publishers, New Delhi.
- Nash E.B. (2007). Leaders in Homeopathic Therapeutics with Grouping and Classification, (Sixth edn.) B Jain Publishers, New Delhi.
- Tyler M.L. (2007). Homoeopathic Drug Picture. (First edition), B Jain Publishers, New Delhi.
- Farrington E.A. (2007) Lectures on Clinical Materia Medica in family order (Fourth edition.) B Jain Publishers Pvt Ltd, New Delhi.
- Farrington E.A. (2005), Comparative Materia Medica. (Reprint edition.) B.Jain Publishers, New Delhi.
- Boericke W, Dewey W, 2016, The Twelve Tissue Remedies by Schussler, Reprint edition, B.Jain Publishers, New Delhi
- All source books.

10. List of contributors

I. Dr. Swati Bhagwat

MD (Hom)

Professor & HOD Department of HMM, PG and Ph.D guide

Dr G.D. Pol foundation YMT Homoeopathic medical college and PG institute, Kharghar, Navi Mumbai

II. Dr Vijaykrishna V

MD (Hom), (Ph.D)

Professor and PG guide Department of HMM

Government Homoeopathic Medical College, Bangalore, RGUHS Karnataka.

III. Dr. Prastuti Jaiswal

Lecturer, Community Medicine

Pt. Jawahar Lal Nehru State Homoeopathic Medical College and Hospital, Lakhanpur, Khyora, Kanp

Subject Name: Organon of Medicine and Homeopathic Philosophy

Subject Code: HomUG-OM-II

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1. Preamble

Organon of Medicine with Homoeopathic Philosophy is a central fulcrum around which education and training of a homoeopathic physician revolves. It lays down the foundations of homoeopathic practice, education, training and research. It not only elaborates on the fundamental laws but also how to apply them in practice. It defines the qualities of a healer, guides the homoeopathic physician in inculcating values and attitude and develop skills.

Nature nurtures us. It is well depicted in our science. Therefore, Homoeopathy is in synchronization with nature. The need to keep life force within us well balanced with nature is well established in the Organon of Medicine by Dr Hahnemann. Dr Hahnemann as an ecologist was well ahead of his time. Philosophically, it connects man and his actions to the dynamic forces available in nature, thus bringing to fore the holistic approach. Lateralization of these concepts helps the student to develop insight into various facets of Life & Living. Homoeopathic philosophy orients the students to homoeopathy as an Art & Science. It's comprehensive understanding needs a core competency in logic and the concepts of generalization and individualization. Its treatment of disease process and relating to the concept of miasm makes it a study of the process of scientific investigation.

The biggest challenge in teaching-learning of homoeopathic philosophy is to first understand the fundamentals according to the Master's writing and then demonstrate them in practice. Quality and real time integration with other subjects helps a student to conceive the holistic perceiving of Man and Materia Medica. The concepts and knowledge required by the Physician with operational knowledge of management of patients and their diseases will need horizontal and vertical integration with Homoeopathic subjects and clinical subjects. First BHMS will need horizontal integration with Anatomy, physiology, pharmacy and HMM. Homoeopathic philosophy will have spiral integration with itself and vertical integration with clinical subjects. Second year will need integration with pathology, community medicine, forensic medicine, along with other homoeopathic subjects. Third and fourth year establishes links with clinical subjects, research methodology and pharmacology.

Science is never static. Since the time of Dr.Hahnemann, medical science has advanced by leaps and bounds. Since Homoeopathy is based on principles rooted in nature, they would stand the test of time. However, their application in the changing times and circumstances would find newer avenues to heal. This is an opportunity for a homoeopath to connect the current advances while relating with the fundamental laws. Mastering all this will make him a master healer and will move him towards higher purpose of existence.

2. Course outcomes

At the end of the BHMS program, a student will be able to-

- i. Understand Mission of a Physician & Higher Purpose of Existence as per the Master's thoughts and words
- ii. Understand Hahnemannian concept of man and integrating it with the concept from the bio-psycho-social perspective.
- iii. Know homoeopathy as a Holistic & Individualistic medical science
- iv. Understand the concept of dynamism and vital force to get insight in health, disease, diathesis and disease.
- v. Relate concepts of Prevention, Promotion & Cure with the Hahnemannian approach
- vi. Know the Healer within the Homoeopathic Physician and work towards bringing forth the qualities of healing.
- vii. Understand Philosophy of Life & Health by applying basic fundamental laws of Homoeopathy.
- viii. Understand homoeopathic philosophy in the context of research

3. Learning outcomes

- i. Understanding the evolution of chronic disease in view of pathogenesis
- ii. Knowing Hahnemannian classification of diseases and its importance
- iii. Correlation of Microbiology and Homeopathy with miasms.
- iv. Correlation of laboratory investigation with the evolution of pathology and miasm
- v. Learning the concept of prevention of disease
- vi. Understanding the concept of causation and relating to homoeopathy
- vii. Classification and analysis of symptoms and correlation with repertory.
- viii. Developing a portrait of disease by integrating the Hahnemannian concept

4. Course content and its term-wise distribution

| Sl. No. | Topic |
|----------------|---|
| Term I | |
| 1. | Natural Disease vs Artificial Disease (Aphorisms 28-33)* |
| 2. | The Correctness of Homoeopathic Therapeutic Law of Nature (Aphorisms 34-51)* |
| 3. | Classification of Diseases (Hahnemannian Classification of Disease) with Introduction to Miasm (Aphorisms 71-82)* |
| 4. | Case Taking (Aphorisms 83-103)* |
| 5. | Homoeopathic Philosophy: |
| 5.1 | Symptomatology: Details regarding Symptomatology are to be comprehended by referring to the relevant aphorisms of Organon of medicine and chapters of the books on homoeopathic philosophy. |
| 5.2 | Case taking: The purpose of homoeopathic case-taking is not merely the collection of disease symptoms from the patient but comprehending the patient as a whole, with the correct appreciation of the factors responsible for the genesis and maintenance of illness. Hahnemann's concept and method of case-taking, as stated in Organon is to be stressed. Case receiving-perceiving techniques and symptoms-grading needs to be introduced and discussed. The prerequisite of the physical environment & of the physician also needs to be outlined. |
| 5.3 | Case processing: This includes- |
| 5.3.1 | Analysis of Symptoms |
| 5.3.2 | Evaluation of Symptoms |
| 5.3.3 | Totality of symptoms |
| 5.3.4 | Susceptibility |
| Term II | |
| 6. | Record Keeping (Aphorism 104)* |
| 7. | Various Systems of Medicine (Aphorisms 52-70)* |
| 8. | Causation: Thorough comprehension of the evolution of disease, taking into account pre-disposing, fundamental, exciting and maintaining causes. |
| 9. | Individuality- individualization- its process |
| 10. | Anamnesis- evolution of disease |
| 11. | Disease-its progress- complex disease relation with miasm |
| 12. | Introduction to the concept of suppression |

5. Teaching hours

5.1. Gross division of teaching hours

| Organon of Medicine and Homoeopathic Philosophy | | |
|---|--------------------------|------------------------------|
| Year | Teaching hours- Lectures | Teaching hours- Non-lectures |
| II BHMS | 150 | 100 |

5.2 Teaching hours theory

| Sl. No | List of Topics | Hours |
|--------|---|-------|
| 1. | Natural Disease vs Artificial Disease | 05 |
| 2 | The Correctness of Homoeopathic Therapeutic Law of Nature | 20 |
| 3 | Classification of Diseases with introduction to Miasm | 20 |
| 4 | Case Taking (Aphorisms 83-103) | 20 |
| 5 | Symptomatology | 07 |
| 6 | Case taking (Homoeopathic Philosophy) | 12 |
| 7 | Case processing | 15 |
| 8 | Various systems of Medicine | 15 |
| 9 | Record Keeping | 02 |
| 10 | Causation | 15 |

| | | |
|----|--|------------|
| 11 | Anamnesis-evolution of disease, Disease its progress-complex disease, Individualization-its process, Susceptibility- types and factors modifying it | 16 |
| 12 | Introduction to the concept of suppression | 3 |
| | Total | 150 |

5.3. Teaching hours Non-lecture

| Sr. No | Non-Lecture Activity | Term | Time Allotted per Activity (Hours) |
|--------|--|--------|---------------------------------------|
| 1 | Clinical(to be integrated with topics under Pathology, Practice of Medicine, Surgery and ObGy) | I & II | 75 |
| 2 | Demonstrative | I & II | 25 |
| 2(a) | Seminar / Tutorials | | 10 |
| 2(b) | Problem based learning/ Case Based Learning | | 10 |
| 2(c) | Assignment/ Symposium / Group discussion | | 5 |
| | Total | | 100 |

6. Competencies tables

6.1 Natural disease vs artificial disease (Aphorism 28-33)

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|--|--|---|-----------|-----------------------------------|------------|------------------|-----------------|
| | | | | | | | | F | S | |
| HomUG-OM-II 1.1 | K& S HO | K | Aphorism 28-33 Artificial disease is stronger than Natural disease | Define modus opernadi of homoeopathic cure | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ SAQ | MCQ SAQ, Viva | Spiral Pharmacy |
| HomUG-OM-II 1.2 | | | | Define and differentiate between Natural and Artificial Disease | | | | | | |
| HomUG-OM-II 1.3 | | | | Identify factors differentiating Natural & Artificial Disease | | | | | | |
| HomUG-OM-II 1.4 | | | | Compare the strength of Natural Disease vis-à-vis Artificial Disease | | | | | | |
| HomUG-OM-II 1.5 | | | | Justify the superiority of Artificial Disease | | | | | | |

6.2 The correctness of Homeopathic therapeutic law of nature(Aphorisms 34-51)

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|---|---|---|-----------|--------------------------------------|------------|---------------------|-------------|
| | | | | | | | | F | S | |
| HomUG-OM-II 2.1 | K & S HO | K | Aphorism 34-35 Therapeutic Law of Nature | Describe the factors needed to cure a disease | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ SAQ | MCQ SAQ, Viva | |
| HomUG-OM-II 2.2 | | K | Aphorism 36-42 Discuss what happens when two dissimilar diseases meet in nature | Compare the different scenarios viz. Natural diseases meet, Natural and Artificial Disease meet | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ SAQ | MCQ SAQ, Viva | |
| HomUG-OM-II 2.3 | | K | Aphorism 43-45 Discuss what happens when two Similar diseases meet in nature | Compare the scenarios viz. Natural diseases meet, Natural and Artificial | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ SAQ | MCQ SAQ, Viva | |

| | | | | | | | | | | |
|--------------------|-------------|---|---|---|--|-----------|-----------------------------------|----------|----------------|--|
| HomUG-OM-II 2.4 | K & S HO | K | Aphorism 45-46 Examples of Homeopathic Cure | List the examples of cure in nature | Cognitive Recall Level II | Must Know | Lecture Small Group Discussion | SAQ | MCQ, SAQ, Viva | |
| HomUG-OM-II 2.5 | | K | Aphorism 47-49 Learning from Nature | Discuss the learning from the nature's examples of cure | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ, SAQ | SAQ, LAQ, Viva | |
| HomUG-OM-II 2.6 | | K | Aphorism 50 Hazardous Homoeopathic Remedy | Discuss the effect of Natural diseases used for treating similar Natural Diseases | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ, SAQ | SAQ, LAQ, Viva | |
| HomUG-OM-II 2.7 | | K | Aphorism 51 Advantage of Homoeopathic medicines | Discuss artificial morbid agents and their advantage over natural diseases | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ, SAQ | SAQ, LAQ, Viva | Pharmacy (V) Materia Medica (V) |

6.3 Classification of disease (Hahnemannian classification of disease) with introduction of miasm (Aphorisms 71-82)

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|------------------------|----------------------|--------|--|---|---|-----------|---|--------------------|---------------------------|--|
| | | | | | | | | F | S | |
| HomUG -OM-II 3.1 | K & S HO | K | Aphorism 71 Homeopathic System of Medicine | List the points necessary in the operation of curing | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ SAQ | MCQ SAQ Viva | Organon (Spiral) Aphorism 3 |
| HomUG -OM-II 3.2 | | | | Discuss Hahnemann's classification of disease | | | | | | |
| HomUG -OM-II 3.3 | K & S HO P C | K H | Aphorism 72 General Survey of Diseases | Define Acute disease Define Chronic disease Illustrate with examples | Cognitive Understand and interpret Level II | Must Know | Caselet Lecture Small Group Discussion | MCQ SAQ | MCQ SAQ Viva | Organon (Spiral) Vital force |
| HomUG -OM-II 3.4 | | K | Aphorism 73 Acute Diseases | List the types of acute diseases Illustrate with examples of each | Cognitive Understand and interpret Level II | Must Know | Caselet Lecture Small Group Discussion | MCQ SAQ Quiz | MCQ SAQ LAQ Viva | Practice of Medicine (H/V) |
| HomUG -OM-II 3.5 | | K | Aphorism 74-76 Chronic Diseases | List examples of Chronic diseases Define Iatrogenic Disease with examples Management of Iatrogenic Diseases | Cognitive Understand and interpret Level II | Must Know | Caselet Lecture Small Group Discussion | MCQ SAQ | MCQ SAQ LAQ Viva | Modern Pharmacology (H) |

| | | | | | | | | | | |
|------------------------|--------------------|---|--|--|---|--------------|--|------------|---------------------------|--------------------------|
| HomUG -OM-II 3.6 | | K | Aphorism 77 Pseudo- chronic Diseases | Define Inappropriately named chronic diseases List the causes of the same Examples | Cognitive Understand and interpret Level II | Must Know | Caselet Lecture Small Group Discussion | MCQ SAQ | MCQ SAQ LAQ Viva | |
| HomUG -OM-II 3.7 | K & S HO P C | K | Aphorism 78 True Chronic Diseases | Define and discuss true natural Disease | Cognitive Understand and interpret Level II | Must Know | Caselet Lecture Small Group Discussion | SAQ | MCQ SAQ LAQ Viva | |
| HomUG -OM-II 3.8 | | K | Aphorism 79 Syphilis & Sycosis | Define Miasm Recognise the miasms Identify the primary presentation of miasm | Cognitive Understand and interpret Level II | Must Know | Caselet Lecture Small Group Discussion | SAQ | MCQ SAQ LAQ Viva | Pathology (H) |
| HomUG -OM-II 3.9 | | K | Aphorism 80-81 Psora | Identify the primary presentation of Psora List the types of presentations of Psora Summarise footnote 77 List the causes that influence transformation of Psora | Cognitive Understand and interpret Level II | Must Know | Caselet Lecture Small Group Discussion | SAQ | MCQ SAQ LAQ Viva | Pathology (H) |

| | | | | | | | | | | |
|-------------------------|--|---|---|--|---|-----------|--|-----|----------|--|
| HomUG -OM-II 3.10 | | K | Aphorism 82 Managem ent of Chronic Diseases | Discuss the management of Chronic diseases | Cognitive Understand and interpret Level II | Must Know | Caselet Lecture Small Group Discussion | SAQ | SAQ Viva | |
|-------------------------|--|---|---|--|---|-----------|--|-----|----------|--|

6.4 Case taking (Aphorisms 83-103)

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|------------------------|------------------------------------|-----------------|---|--|--|-----------|---|--------------------------|--------------------|-------------------------------------|
| | | | | | | | | F | S | |
| HomUG -OM-II 4.1 | K & S HO P C | K H | Aphorism 83 Prerequisites for case taking | List the prerequisites for case taking Discuss techniques to develop and improve on these | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion Case simulation | MCQ SAQ Viva | MCQ SAQ Viva | |
| HomUG -OM-II 4.2 | K & S HO P C P B L C S | K K H S H | Aphorism 84-89 History taking | Explain the steps of case taking Discuss the dos and don'ts of case taking | Cognitive Understand and interpret Problem solving Level II& III | Must Know | Lecture Case simulation Case discussion OPD/IPD in small groups | MCQ SAQ | MCQ SAQ Viva | |
| HomUG -OM-II 4.3 | K & S HO P B L | K H S H D | Aphorism 90 Physician's observation | List the various headings to observe in a patient | Cognitive Understand and | Must Know | Lecture Movies /clips | MCQ SAQ Check-list | MCQ SAQ Viva | Anatomy/ Physiology (Spiral) |

| | | | | | | | | | | |
|------------------|------------------------------------|----------|--|---|---|-----------|---|------------|--------------------|---|
| | | | | Discuss the importance of these observations Co-relate with Materia Medica and Repertory | interpret Level II Psychomot or Level I & II | | Case simulation | | | Practice of Medicine (Horizontal) Materia Medica (H & S) Repertory (H & S) |
| HomUG -OM-II 4.4 | K & S HO P B L | K K H | Aphorism 91 Original Unmodified Picture | Discuss the importance of noting the original form of disease | Cognitive Understand and interpret Level II | Must Know | Lecture Caselet | MCQ SAQ | MCQ SAQ Viva | |
| HomUG -OM-II 4.5 | K & S P C | K | Aphorism 92 Case taking in acute disease | Discuss the importance of case taking in acute cases | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion Caselet | MCQ SAQ | MCQ SAQ Viva | |
| HomUG -OM-II 4.6 | K & S HO P C P B L C S | K K H | Aphorism 93 Obvious cause of the Disease | Discriminate between various causes of sensitive nature Ask relevant questions | Affective Level I | Must Know | Lecture Small Group Discussion Role play | MCQ SAQ | MCQ SAQ Viva | Fundamentals of Psychology (S) |
| HomUG -OM-II 4.7 | K & S HO P C C S | K H | Aphorism 94 General cause of the Disease | Plan the case taking to ascertain the maintaining cause if any | Cognitive Decision /Problem Solving Level III | Must Know | Lecture Small Group Discussion Case simulation OPD/IPD | MCQ SAQ | MCQ SAQ Viva | Aphorism 5 Organon (S) |

| | | | | | | | | | | |
|-------------------------|-----------------------------|-----|--|---|---|--------------|--|------------|---------------------------|---|
| HomUG -OM-II 4.8 | K & S HO P C | K H | Aphorism 95 Case taking in chronic disease | Design the case taking in chronic disease Evaluate the importance of accessory symptoms | Cognitive Decision /Problem Solving Level III | Must Know | Lecture Small Group Discussion Case simulation OPD/IPD | MCQ SAQ | MCQ SAQ LAQ Viva | |
| HomUG -OM-II 4.9 | K & S HO C S | K | Aphorism 96-97 Disposition s of patients in case taking | Differentiate the dispositions of patients while answering Differentiate between Hypochondriac s and Feigners (malingering) Analyse the reasons behind the disposition | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion Case simulation OPD/IPD | MCQ SAQ | MCQ SAQ Viva | Fundamentals of Psychology (S) Symptomatology Organon |
| HomUG -OM-II 4.10 | K & S HO P B L C S | K | Aphorism 98 Demands of Case taking | Analyse the answers given by the friends and attendants Compare that with the patient's answer Listen to the patients' answers | Cognitive Understand and interpret Level II Affective Level I | Must Know | Lecture Small Group Discussion Case simulation OPD/IPD | MCQ SAQ | MCQ SAQ Viva | Psychology (S) |
| HomUG -OM-II 4.11 | K & S HO | K | Aphorism 99 | Discuss the advantages of case taking in | Cognitive Understand and | Must Know | Lecture | MCQ SAQ | MCQ SAQ Viva | |

| | | | | | | | | | | |
|------------------|--|---|---|---|---|-----------|-----------------------------------|------------|--------------------|--------------------|
| | | | Case taking in acute disease | acute diseases vis-à-vis chronic case | interpret Level II | | Small Group Discussion | | | |
| HomUG-OM-II 4.12 | K & S HO P C Community Health | K | Aphorism 100-103 Case taking in epidemic and sporadic disease | Discuss the salient points of case taking in an epidemic or sporadic disease Differentiate between common and characteristic symptom in above cases Discuss the concept of Genus epidemicus | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ SAQ | MCQ SAQ Viva | Organon (S) |

6.5 Symptomatology

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/Guilbert | Priority | TL MM | Assessment | | Integration |
|-----------------|----------------------|--------|--------------------------------------|--|---|-----------|---|------------|----------|--|
| | | | | | | | | F | S | |
| HomUG-OM-II 5.1 | K & S | K | Define Symptoms and their importance | Define Objective and subjective symptoms | Cognitive Understand and interpret Level II | Must Know | Class room lecture , Group discussions | MCQ SAQ | LAQ | Horizontal with Pathology Vertical with POM, OBG, Surgery |
| HomUG-OM-II 5.2 | | | | Enumerate different types of symptoms | | | | | | |
| HomUG-OM-II 5.3 | | K | | Explain symptoms according to Hahnemann's view | | | | | | |
| HomUG-OM-II 5.4 | K & S | K | | Define Totality of symptoms | Cognitive/ Understand & Interpret level II | Must Know | Class room lecture , Group discussions Caselets | MCQ | LAQ VIVA | |
| HomUG-OM-II 5.5 | | | | Explain types of modalities | | | | | | |

| | | | | | | | | | | | |
|------------------------|-------|---|--|--|---|--------------|----------------|-----|------------|-----------------------|------|
| HomUG -OM-II 5.6 | K & S | K | Define Symptomatology in relevance with Dr. KENT | Understanding the method of forming the TOS for prescribing Identify the nature and value of symptoms | Psychomotor / Problem Solving Level I | Must Know | Cases P B L | SAQ | LAQ SAQ | Vertical Repertory | with |
| HomUG -OM-II 5.7 | | | | Analysis of the case Explain the grade of symptoms of disease | | | | | | | |
| HomUG -OM-II 5.8 | | | | Explain the grade of symptoms of drug | | | | | | | |

6.6 Case taking (Homoeopathic Philosophy)

| SI No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|-----------------------------------|--|-------------------------|-----------|----------------------|------------|---------------------------|--------------------------------------|
| | | | | | | | | F | S | |
| HomUG-OM-II 6.1 | K & S HO P C | K | Roberts Ch 8 Case Taking | Discuss the essentials needed to be recorded in taking the case | Cognitive/ Level III | Must know | Lecture Tutorials | MCQ SAQ | MCQ SAQ LAQ Viva | Record keeping Organon (S) |
| HomUG-OM-II 6.2 | | S H | | List the dos and don'ts of case taking | | | | | | |
| HomUG-OM-II 6.3 | | | | Difference between acute and chronic case taking | | | | | | |
| HomUG-OM-II 6.4 | | K | Case taking Views of stalwarts | Explain View of Dr. J T Kent on Case Taking Explain View of Dr. Stuart Close on Case Taking | | | | | | |

6.7 Case processing

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|-------------------------------|-----------------|---|---|---|--------------|--|-------------------------|-------------------|--|
| | | | | | | | | F | S | |
| HomUG-OM-II 7.1 | K & S P C P B L | K H S H D | Analysis | Define Analysis Identify different groups to analyse the symptoms Justify the analysis | Cognitive Level III | Must Know | Lecture Small Group Discussion Case simulation OPD/IPD | MCQ SAQ Checklist | MCQ SAQ LAQ | |
| HomUG-OM-II 7.2 | | | Evaluation | Define Evaluation Justify and defend the evaluated symptoms | Cognitive Level III | | | | | |
| HomUG-OM-II 7.3 | | | Investigation | Discuss the investigation Plan the case | Cognitive Level III | | | | | Pathology (H) |
| HomUG-OM-II 7.4 | | | Diagnosis | Examine the case | Cognitive Level III Psychomotor Level I & II | | | | | Practice of Medicine(H) |
| HomUG-OM-II 7.5 | K & S | K | Develop Portrait of Disease by integrating Hahnemannian concept | Define Disease portrait (Kent -Ch- 30), (Roberts- Ch- 9),(Close- Ch- 11, 12) | Cognitive/ Understand & Interpret level II | Must Know | Caselets / Classroom discussion/ DOPS | MCQ SAQ | LAQ | Horizontal with Pathology, Materia Medica, Repertory |

6.8 Totality of symptoms

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|------------------|----------------------|--------|---|---|--|-----------|---------------------------------------|------------|-----|--|
| | | | | | | | | F | S | |
| HomUG-OM-II 8 | K & S | K | Develop Portrait of Disease by integrating Hahnemannian concept | Define Disease portrait (Kent -Ch-30), (Roberts-Ch-9),(Close-Ch- 11, 12) | Cognitive/ Understand & Interpret level II | Must Know | Caselets / Classroom discussion/ DOPS | MCQ SAQ | LAQ | Horizontal with Pathology, Materia Medica, Repertory |

6.9 Susceptibility

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|-------------------------------------|--------|----------------|--|---------------------|-----------|---|------------|---|--------------------|
| | | | | | | | | F | S | |
| HomUG-OM-II 9.1 | K & S HO P C C B L | K | Susceptibility | Define Susceptibility | Cognitive Level II | Must Know | Lecture | MCQ SAQ | | Organon (S) |
| HomUG-OM-II 9.2 | | | | Discuss the factors modifying susceptibility | Cognitive Level II | | Small Group Discussion Case based Learning Seminar/ Symposium | | | |
| HomUG-OM-II 9.3 | | | | Predict the susceptibility of the patient to the drug prescribed | Cognitive Level III | | | | | |

6.10 Record keeping

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|-------------------------|--------|---------------------------------------|---|---|---------------------|--|------------|---------------------------|----------------|
| | | | | | | | | F | S | |
| HomUG-OM-II 10.1 | K & S HO P C D | K H | Aphorism 104 Record keeping | Discuss the importance of Record keeping Legality of case record | Cognitive Decision /Problem Solving Level III | Must Know | Lecture OPD/ IPD Case simulation Project work | MCQ SAQ | MCQ SAQ LAQ Viva | FMT (H) |
| HomUG-OM-II 10.2 | K & S | K | Define Record Keeping | Define Record Keeping Explain Case Records | Cognitive / Recall | Desire-able to know | Caselets DOPS | MCQ | SAQ | With Repertory |

6.11 Various systems of medicine

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|---|--|---|-----------|--|--------------------|------------------------------|-------------------------|
| | | | | | | | | F | S | |
| HomUG-OM-II 11.1 | K & S HO | K | Aphorism 52 Chief Methods of Cure | List and Discuss different methods of Cure | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion Seminars | MCQ SAQ Quiz | MCQ SAQ, Viva | Spiral Pharmacy |
| HomUG-OM-II 11.2 | | K | Aphorism 53 Homeopathic Method | Discuss the Fundamental Laws | Cognitive Understand and interpret Level II | MustKnow | Lecture Small Group Discussion Seminars | MCQ SAQ Quiz | MCQ, SAQ, LAQ, Viva | ORGANON (Spiral) |

| | | | | | | | | | | |
|------------------|----------|---|---|---|---|-----------|---|--------------|---------------------|---|
| | | | Application of Law of Cure | | | | | | | |
| HomUG-OM-II 11.3 | | K | Aphorism 54 Different forms / System of Medicines Allopathic Method | Compare the outcomes of Various theories | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion Seminars | MCQ SAQ Quiz | MCQ, SAQ, LAQ, Viva | ORGANON (Spiral) |
| HomUG-OM-II 11.4 | K & S HO | K | Aphorism 55-56 Palliation in Allopathy | Discuss the awareness of public effect of palliative treatment | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion Seminars | MCQ, SAQ | MCQ, SAQ, LAQ, Viva | Modern Pharmacology (V) Medicine (V) |
| HomUG-OM-II 11.5 | | K | Aphorism 57-58 Symptomatic Treatment by Contraria | Explain the symptomatic treatment in contraria | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion Seminars | MCQ, SAQ | MCQ, SAQ, LAQ, Viva | Modern Pharmacology (V) Medicine (V) |
| HomUG-OM-II 11.6 | | K | Aphorism 59 Injurious effects of antipathic Line of Treatment | Analyse the examples of effects of Antipathic line of treatment | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion Seminars | MCQ, SAQ | MCQ, SAQ, LAQ, Viva | Modern Pharmacology (V) Medicine (V) |

| | | | | | | | | | | |
|----------------------|----------------------|-----|---|--|---|-----------|--------------------------------|----------|--------------------|--|
| HomUG-OM-II 11.7 | K & S HO | K | Aphorism 60 Palliation in Allopathy | Discuss the Hazard of increasing doses in palliative treatment | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ, SAQ | MCQ, SAQ Viva | Modern Pharmacology (V), Medicine (V), Gynaec (H), Surgery(H) |
| HomUG-OM-II 11.8 | | K | Aphorism 61 Utility of Homoeopathic treatment | Compare the utility of Homoeopathic & Allopathic treatment | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ, SAQ | MCQ, SAQ Viva | Modern Pharmacology (V) Medicine (V), Gynaec (H), Surgery(H) |
| HomUG-OM-II 11.9 | K&S HO P C | K | Aphorism 62-63 Reason for injurious nature of the palliative and sole efficacy of homoeopathic medicine | Define Primary and Secondary Action | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ, SAQ | MCQ, SAQ, Viva | |
| HomUG-OM-II 11.10 | | K H | Aphorism 64 Explanation of Primary and Secondary Action | Differentiate between Primary and Secondary Action | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ, SAQ | MCQ, SAQ, Viva | |
| HomUG-OM-II 11.11 | | K | Aphorism 65 Examples of Primary and | Illustrate with examples of Primary and | Cognitive Understand and | Must Know | Lecture Small Group Discussion | MCQ, SAQ | MCQ, SAQ, LAQ Viva | Modern Pharmacology (V) Medicine (V) |

| | | | | | | | | | | |
|-------------------|----------|----|---|---|---|-----------|--------------------------------|----------|---------------|---|
| | | | Secondary Action | Secondary Actions | interpret Level II | | | | | |
| HomUG-OM-II 11.12 | K & S HO | K | Aphorism 66 Secondary Curative Action | Analyse the effect of smallest homoeopathic doses in secondary action | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ, SAQ | MCQ, SAQ, LAQ | |
| HomUG-OM-II 11.13 | | K | Aphorism 67 Define and explain Suspended Animation | Discuss the use of antipathic line of treatment in specific cases | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ, SAQ | MCQ, SAQ, LAQ | |
| HomUG-OM-II 11.14 | | KH | Aphorism 68 Analyse the efficacy of Minuteness of Homeopathic medicines in cure | Application of Law of Minimum | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ, SAQ | MCQ, SAQ, LAQ | Organon (S) |
| HomUG-OM-II 11.15 | K & S HO | K | Aphorism 69 Hurtfulness of Antipathic Treatment | Evaluate the effect of Antipathic line of treatment | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ, SAQ | MCQ, SAQ, LAQ | Modern Pharmacology (H) Medicine (V) |
| HomUG-OM-II 11.16 | K & S HO | K | Aphorism 70 Summary of Homeopathic system of Medicine | List the inferences derived from the Aphorisms 1-70 | Cognitive Understand and interpret Level II | Must Know | Lecture Small Group Discussion | MCQ, SAQ | MCQ, SAQ, LAQ | |

6.10 Causation

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|-----------------------|--------|---|--|---|-------------------|--|------------|---------------------------|--|
| | | | | | | | | F | S | |
| HomUG-OM-II 12.1 | K & S | K | Etiology Concept of Disease | Recall the various concept of disease | Cognitive Level II Understand and Interpret | Must know | Lectures Small group Discussion | MCQ SAQ | MCQ SAQ LAQ Viva | Organon (S) |
| HomUG-OM-II 12.2 | K & S | | Biological Concept of disease | Discuss the biological concept of disease | | Desirable to know | | | | Pathology (H) |
| HomUG-OM-II 12.3 | C S | | Environmental and Constitutional Factors | Discuss the concept of stress/ strain / Conflict | | Must know | | | | Psychology (S) Personality Adaptation |
| HomUG-OM-II 12.4 | P C | | Importance of diagnosis in Homeopathy | List the importance of diagnosis in daily practice | | Must know | | | | Practice of Medicine (H & V) |
| HomUG-OM-II 12.5 | | | Concept of causation & relating it with homoeopathy | Define fundamental(miasm), exciting & maintaining cause | Cognitive Level II Understand and Interpret | Must know | Lectures Small group Discussion | MCQ SAQ | MCQ SAQ LAQ Viva | Horizontal with Pathology, Materia Medica, Repertory |
| HomUG-OM-II 12.6 | K & S and Scholarship | K | Classification of Disease | Classification of disease as per Hahnemann and other stalwarts like Sarkar | Cognitive/ Understand & Interpret level II | Must Know | Classroom discussion Case Based Learning | MCQ SAQ | LAQ | |

6.11 Introduction to the evolutionary concept of miasm

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integrati on |
|------------------|----------------------|--------|--|---|--|--------------------|---|------------|---------------------------|---------------------------|
| | | | | | | | | F | S | |
| HomUG-OM-II 13.1 | K & S | K | Discovery of Miasm Definition of Miasm Primary basic features of Miasm | Relate to Hahnemann’s journey to discover the concept of miasm in chronic diseases | Cognitiv e Level II Understa nd and Interpret | Desirabl e to know | Lecture Small group discussion | MCQSA Q | MCQ SAQ LAQ Viva | Organon (S) |
| HomUG-OM-II 13.2 | K & S | K | Hahnemann classification of disease | Define Hahnemann’s concept of miasm | Cognitive / Understand & Interpret Level II | Must Know | Class room lecture / Small group Discussions / Caselets | MCQ SAQ | LAQ | Horizontal with Pathology |
| HomUG-OM-II 13.3 | | | | Explain pathological consideration and general survey of disease Hahnemann’s theory of Chronic Disease & bacteriology Acute miasm | | | | | | |
| HomUG-OM-II 13.4 | K & S | K | Miasm | Explain characteristic of Psora | Cognitive / Understand & Interpret level II | Desirable to know | Classroom discussion/ group discussions | MCQ SAQ | LAQ | |
| HomUG-OM-II 13.5 | | | | Explain characteristic of Sycosis | | | | | | |

| | | | | | | | | | | |
|---------------------|-------|---|---|--|---|-------------------|----------------------------------|------------|-----|---------------------------|
| HomUG-OM-II 13.6 | | | | Explain characteristic of Syphilis Foot note: 74, 76, 77, 78, 79, 80 | | | | | | |
| HomUG-OM-II 13.7 | K & S | K | Understanding chronic disease in view of pathogenesis | Co- relate laboratory investigation with evolution of pathology and miasm | Cognitive / Understand & Interpret level II | Desirable to know | Caselets / Classroom discussion/ | MCQ SAQ | LAQ | Horizontal with Pathology |
| HomUG-OM-II 13.8 | | | | Co- microbiology & homoeopathy with miasm | | | | | | |
| HomUG-OM-II 13.9 | K & S | K | Miasm & Pathology | Correlation of homoeopathy to pathology with reference to Dr. Kent, Close, Roberts | Cognitive / Understand & Interpret level II | Nice to know | Classroom discussion/ | MCQ SAQ | LAQ | |

6.12 Individuality

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|------------------------|--|---|-----------|--------------------------------|------------|---------------------------|--|
| | | | | | | | | F | S | |
| HomUG-OM-II 14.1 | K & S | K | Life, Health & Disease | Define Individuality | Cognitive Level II Understand and Interpret | Must know | Lecture | MCQ SAQ | MCQ SAQ LAQ Viva | Pathology Practice of Medicine Materia Medica |
| HomUG-OM-II 14.2 | | | | Describe factors contributing to individualise a patient | | | Small Group Discussion | | | |
| HomUG-OM-II 14.3 | | | | Discuss with examples | | | Case based Learning Seminar | | | |

6.13 Anamnesis- evolution of disease

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|--------------------------------------|--|---|-----------|--|------------|---------------------------|--|
| | | | | | | | | F | S | |
| HomUG-OM-II 15.1 | K & S | K | History of Disease and its evolution | Define Anamnesis | Cognitive Level II Understand and Interpret | Must know | Lecture | MCQ SAQ | MCQ SAQ LAQ Viva | Pathology Practice of Medicine Materia Medica |
| HomUG-OM-II 15.2 | | | | Define evolution of disease process and prognosis of disease | | | Small Group Discussion Case based Learning Seminar | | | |

6.14 Disease-its progress- complex disease relation with miasm

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|------------------------|--|---|-----------|------------------------------------|------------|---------------------|----------------|
| | | | | | | | | F | S | |
| HomUG-OM-II 16.1 | K & S | K | Progression of disease | Define Complex disease | Cognitive Level II Understand and Interpret | Must know | Lecture | SAQ | MCQ, SAQ, LAQ, VIVA | Organon |
| HomUG-OM-II 16.2 | | | | Discuss progression of disease in relation with – | | | Small Group Discussion | | | |
| | | | | Psora (Functional Changes) - Sycosis (Infiltration) - Syphilis (Destruction) | | | Case based Learning Seminar | | | |

6.15 Introduction to the concept of suppression

| Sl. No | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|------------------|------------------------|--------|---|---|---|--------------|----------------------|------------|-----|---------------|
| | | | | | | | | F | S | |
| HomUG-OM-II 17.1 | K & S HO P C | K | Suppression Causes Effects and Management | Define Suppression | Cognitive Level II Understand and Interpret | Nice to Know | Lecture Caselet | MCQ SAQ | SAQ | Pathology (H) |
| HomUG-OM-II 17.2 | | | | Enumerate the types and causes of Suppression | | | Case based Lerarning | | | |
| HomUG-OM-II 17.3 | | | | Discuss the effects of Suppression | | | | | | |
| HomUG-OM-II 17.4 | | | | Explain the management | | | | | | |

7. Teaching learning methods

| Lectures (Theory) | Non-lectures (Practical) |
|------------------------|--------------------------------|
| Lectures | Clinical demonstration |
| Small group discussion | Problem based group discussion |
| Integrated lectures | Case based learning |
| Assignments | Tutorials |
| Library reference | Seminars |
| | Symposium |
| | Assignments |
| | Self-learning |

There have to be classroom lectures, small group discussions, case discussions where case-based learning (CBL) and problem-based learning (PBL) are especially helpful.

Audiovisual (AV) methods for classroom teaching may be an innovative aid in order to demonstrate the related graphics and animations etc.

In the case of clinical demonstration – DOAP (Demonstration – Observation – Assistance – Performance) is very well applicable.

8. Details of assessment

8.1 Overall Scheme of Assessment (Summative)

| Sr. No | Professional Course | Term I (1-6 Months) | | Term II (7-12 Months) | | |
|--------|-----------------------------|------------------------|--|-------------------------|------------------------|---|
| 1 | Second Professional BHMS | PA I (end of 3 months) | TT I (end of 6 months) | PA II (end of 9 months) | FUE (end of 12 months) | |
| | | 10 Marks Viva | 50 Marks Practical/ Viva i) Viva voce -25 marks | 10 Marks Viva | 100 marks theory | 100 marks (Clinical/practical+ Viva+ IA) |

| | | | | | | |
|--|--|--|--|--|--|--|
| | | | ii) Clinical performance – 25 marks Case taking and analysis and evaluation | | | |
|--|--|--|--|--|--|--|

8.2 Number of papers and marks distribution for Final University Examination (FUE)

| Sr. No. | Course Code | Papers | Theory | Practical/ Clinical | Viva Voce | Internal Assessment** | Grand Total |
|---------|-------------|--------|-----------|--|-----------|--|-------------|
| 1 | HomUG-OM-II | 01 | 100 marks | 50 marks i) Case taking- 10 marks ii) Case processing-25 marks iii) Case presentation- 5 marks iv) Journal*-10 marks | 40 marks | 10 marks (Marks of PA I + TT I + PA II) | 200marks |

*Journal with 10 cases needs to be maintained by the students which should include

Case Taking, Case Processing -Analysis & Evaluation, Investigations, Probable Diagnosis, Classification of disease in that case, Susceptibility

****Method of Calculation of Internal Assessment Marks for Final University Examination:**

Marks of IA- (Marks of PA-1 + Marks of TT + Marks of PA-2) / 70 X 10

8.3 Paper Layout

Summative assessment (FUE):

Theory- 100 marks

| | |
|------------|-----------------|
| MCQ | 10 marks |
| SAQ | 40 marks |
| LAQ | 50 marks |

8.4 Distribution of questions for theory exam

| Sr. No | Paper | | | D | | |
|---------------|--|-------------|--------------------------|--------------------------|-----------------|-------------------|
| | | | | Type of Questions | | |
| | A | B | C | MCQ | SAQ | LAQ |
| | List of Topics | Term | Marks | (1 Mark) | (5Marks) | (10 Marks) |
| 1 | Aphorism 28- 70 and 83-104 | I & II | Refer to table 8.5 below | 4 | 2 | 2 |
| 2 | Case taking -receiving-perceiving techniques prerequisites of physician, Symptomatology, Analysis, Evaluation, Totality of Symptoms | I & II | | 2 | 2 | 1 |

| | | | | | | |
|---|--|----|--|---|---|---|
| 3 | Classification of disease with introduction to miasm (Aphorism 71-82); Its correlation with pathogenesis and Homoeopathic management | I | | 2 | 1 | 1 |
| 4 | Anamnesis-evolution of disease, Disease its progress-complex disease, Individualization-its process, Susceptibility: types and factors modifying it | II | | | 2 | |
| 5 | Causation; Introduction to the concept of suppression | II | | | 1 | 1 |

8.5 Theme-wise distribution

| No | Chapter/ Topic | Term | Theme | Marks | LAQ | SAQ | MCQ |
|----|---|--------|-------|-------|-----|-----|-----|
| 1 | Aphorism 28-104 | I & II | A | 34 | 20 | 10 | 4 |
| 2 | Case taking -receiving-perceiving techniques prerequisites of physician, Symptomatology, Analysis, Evaluation, Totality of Symptoms | I&II | B | 22 | 10 | 10 | 2 |
| 3 | Classification of Disease with respect to Pathogenesis, miasm and correlation with homeopathic management | I | C | 17 | 10 | 5 | 2 |
| 4 | Anamnesis-evolution of disease, Disease its progress-complex disease, Individualization-its process, Susceptibility: types and factors modifying it | II | D | 12 | | 10 | 2 |
| 5 | Causation; Introduction to the concept of suppression | II | E | 15 | 10 | 5 | |

8.6 Question paper blueprint

| A Question Serial Number | B Type of Question | Question Paper Format (Refer Table 8.5 for themes) |
|---|--|---|
| Q.1 | Multiple choice Questions (MCQ) 10 Questions 1mark each All compulsory Must know part: 7 Desirable to know :3 Nice to know: Nil | <ol style="list-style-type: none"> 1. Theme A 2. Theme A 3. Theme A 4. Theme A 5. Theme B 6. Theme B 7. Theme C 8. Theme C 9. Theme D 10. Theme D |
| Q.2. | Short answer Questions (SAQ) 8 Questions 5 marks each All Compulsory Must know part:5 Desirable to Know: 2 Nice to know:1 | <ol style="list-style-type: none"> 1. Theme A 2. Theme A 3. Theme B 4. Theme B 5. Theme C 6. Theme D 7. Theme D 8. Theme E |
| Q.3 | Long answer Questions (LAQ) 5 Questions 10 marks each All Compulsory Must know part:3 Desirable to Know: 2 Nice to know:Nil | <ol style="list-style-type: none"> 1. Theme A 2. Theme A 3. Theme B 4. Theme C 5. Theme E |

9. List of recommended text/reference books

- Hahnemann Samuel, Organon of Medicine 6th edition translated By W. Boericke
- Hahnemann Samuel, Organon of Medicine 5th & 6th combined edition translated By R. E. Dudgeon
- Kent J.T. Lectures on Homoeopathic Philosophy
- Roberts H. A. The Principle and Art of Cure By Homoeopathy
- Close Stuart, The Genius of Homoeopathy Lectures and Essay on Homoeopathic Philosophy
- Sarkar B. K., Commentary on Organon
- Das A. K., *A Treatise on Organon of Medicine*
- Schmidt Pierre, *The Art of Case Taking and Interrogation*
- Goel Sumit, *A study on Organon of Medicine and Homoeopathic Philosophy*

10. List of Contributors

- I. Dr. Prabhakar Devadiga, MD (Hom), Professor and HOD Smt. Chandaben Mohanbhai Patel Homeopathic Medical College, Mumbai, Maharashtra 400056
- II. Dr. S. M. Sharma, MD (Hom) Professor, Department of Organon and Principal, Dr. Madan Pratap Khunteta Homeopathic Medical College, Jaipur, Rajasthan
- III. Dr. Neeraj Gupta, MD (Hom) Officiating Principal and HOD Dr. B. R. Sur Homeopathic Medical College Hospital Research Centre, Nankpura, Moti Baug, New Delhi 110021

Subject name: - Forensic Medicine and Toxicology

Subject code: HomUG-FMT

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1. Preamble

Forensic Medicine and Toxicology encompass a multifaceted understanding of the medical, legal, and medico-legal obligations incumbent upon physicians, alongside a profound comprehension of medical ethics, decorum, and the toxicological ramifications of poisons. This field intersects with the elucidation of symptoms associated with homeopathic remedies. It is imperative for every registered Homoeopathic medical practitioner, whether practicing privately or within governmental institutions, to undertake medico-legal examinations as mandated by statute. In the current landscape characterized by burgeoning consumerism in medical services, familiarity with laws pertinent to medical practice, doctrines of medical negligence, and ethical codes assumes paramount importance. Practitioners must be cognizant of their medico-legal responsibilities, adept at making astute observations, drawing logical inferences, and arriving at significant conclusions during investigations into criminal matters and associated medico-legal intricacies.

Furthermore, proficiency in identifying, diagnosing, and studying the management protocols of both acute and chronic poisonings is indispensable. Decisions regarding treatment and referral should be judiciously made, considering the prevailing circumstances and severity of the condition, thereby ensuring timely intervention. Moreover, an understanding of the medico-legal dimensions of poison-related incidents is crucial.

Additionally, recognizing that the toxicological manifestations of poisons may bear resemblance to either the proving or clinical symptoms of certain Homoeopathic remedies underscoring the importance of integration between these disciplines. Such integration not only sheds light on the evolving drug profiles but also enhances comprehension of toxicological and therapeutic principles.

2. Course outcomes

At the end of BHMS II course in Forensic Medicine and Toxicology, the student shall -

- i. Identify, examine and prepare reports / certificates in medico-legal cases/situations in accordance with the law of land.
- ii. Demonstrate awareness of legal/court procedures applicable to medico legal/medical practice
- iii. Acquire knowledge in Forensic medicine and recognize its scope and limitations in Homoeopathic practice
- iv. Be conversant with the code of ethics, etiquette, duties and rights of medical practitioners' profession towards patients, profession, society, state and humanity at large; infamous conduct, medical negligence, and punishment on violation of the code of ethics.
- v. Be able to identify poisons/poisoning, and management of poisoning within the scope of homoeopathy.

- vi. Develop knowledge of Materia Medica by application of knowledge gained by the study of Toxicology
- vii. Develop skills in medical documentation
- viii. Be aware of the principles of environmental, occupational and preventive aspects of general Toxicology

3. Course content and its term-wise distribution

| Sl. No. | List of Topics | Term |
|---------|---|------|
| | Forensic Medicine | |
| 1. | Introduction to Forensic Medicine | I |
| 2. | Medical ethics | I |
| 3. | Legal procedures | I |
| 4. | Personal Identification | I |
| 5. | Death and its medico-legal importance | I |
| | Toxicology | |
| 1. | General Toxicology | I |
| 2. | Clinical toxicology | I |
| 3. | Injury and its medico-legal importance | II |
| 4. | Forensic psychiatry | II |
| 5. | Post-mortem examination (ML autopsy) | II |
| 6. | Impotence and sterility | II |
| 7. | Virginity, defloration; pregnancy and delivery.(Integration with OBG) | II |
| 8. | Abortion and infanticide (Integration with OBG) | II |
| 9. | Sexual Offences | II |
| 10. | Clinical Toxicology | II |
| | Legislation relating to medical profession (relevant areas) | |
| 1. | Legislation relating to medical profession | II |

4. Teaching hours

4.1 Gross division of teaching hours

| Forensic Medicine and Toxicology | | |
|----------------------------------|--------------------------|------------------------------|
| Year | Teaching hours- Lectures | Teaching hours- Non-lectures |
| II BHMS | 120 | 50 |

4.2 Teaching hours theory

| S. no. | List of Topics | Hours |
|--------|---------------------------------------|-------|
| 1 | Introduction to Forensic Medicine | 02 |
| 2 | Medical Ethics | 03 |
| 3 | Legal Procedures | 04 |
| 4 | Personal Identification | 07 |
| 5 | Death and its medicolegal importance | 13 |
| 6 | General Toxicology | 07 |
| 7 | Clinical Toxicology: Part-I | 20 |
| 8 | Injury and its medicolegal importance | 10 |
| 9 | Forensic Psychiatry | 04 |
| 10 | Postmortem Examination (ML Autopsy) | 04 |
| 11 | Impotence and Sterility | 03 |

| | | |
|----|---|------------|
| 12 | Virginity, Defloration, Pregnancy and Delivery (Integration with OBG) | 03 |
| 13 | Abortion and Infanticide (Integration with OBG) | 04 |
| 14 | Sexual Offences | 06 |
| 15 | Clinical Toxicology: Part-II | 25 |
| 16 | Legislation relating to Homoeopathic Medical Profession | 05 |
| | Total | 120 |

4.3 Teaching hours: Non-lecture

| Sr. No | Non-Lecture Activity | Term | Time Allotted per Activity (Hours) |
|--------|--|--------|------------------------------------|
| 1 | Practical | I & II | 35 |
| 1(a) | Demonstration a) Weapons b) Toxicology - corrosives, irritants, systemic and miscellaneous poisons, gastric lavage c) Charts, diagrams, photographs, models, bones, x-ray films of medico-legal importance | | 10 |
| 1(b) | Certificate Writing a) Various certificates like sickness certificate, physical fitness certificate, death certificate, consent form, birth certificate. | | 3 |

| | | | |
|------|--|--------|-----------|
| | b) Knowledge of injury certificate, examination of rape victim and assailant, drunkenness, post-mortem examination report, age certification | | |
| 1(c) | Consent- Medical consent, implied consent, patient confidentiality, autonomy, role of care giver, audio-video recording of cases, safety and custody of medical records | | 2 |
| 1(d) | Demonstration of at least ten medico-legal autopsies. | | 20 |
| 2 | Demonstrative | I & II | 15 |
| 2(a) | Court Procedures (Moot Court) | | 05 |
| 2(b) | Field Visits | | 10 |
| | Total | | 50 |

5 Content mapping (competencies tables)

5.1. Topic: Introduction to Forensic Medicine-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom /Guilbert | Priority | TL MM | Assessment | | Integration |
|----------------|------------------------|--------|---|--|-----------------|----------|---------------------|-----------------|-------------------------|-------------|
| | | | | | | | | F | S | |
| Hom UG-FMT-1.1 | KS CS PBL PRF | K | Definition of forensic medicine, medical | 1.Define forensic medicine | C-I | MK | Interactive lecture | MCQ, Viva Voce | Viva voce | None |
| Hom UG-FMT-1.2 | | K | jurisprudence, History of Forensic medicine in India. | 2. Define Medical Jurisprudence. | C-I | MK | Interactive lecture | MCQ, Viva Voce | Viva voce | |
| Hom UG-FMT-1.3 | | K | | 2. Describe the history of Forensic medicine in India. | C-I | DK | Interactive lecture | SAQ, Assignment | Theory - SAQ, Viva voce | |

5.2. Topic: Medical ethics-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom /Guilbert | Priority | TL MM | Assessment | | Integration |
|----------------|------------------------------------|--------|--|--|-----------------|----------|---|------------------------------|----------------------------------|-------------|
| | | | | | | | | F | S | |
| Hom UG-FMT-2.1 | KS PC HO CS PBL PRF | K | Medical Ethics and etiquette – Code of ethics, Infamous conduct, medical negligence, professional secrecy, privileged communication, Rights and duties of doctors and patients etc | Define medical ethics | C-I | MK | Interactive lecture, Small Group Discussions , Written Case Scenario, Moot court. | MCQ, Assignment | Viva voce | None |
| Hom UG-FMT-2.2 | | | National Commission for Homoeopathy and | Discuss professional misconduct with 2 examples. | C-II | MK | Interactive lectures, Written Case Scenario, Moot court. | SAQ LAQ, Tutorial Assignment | Theory - SAQ and LAQ , Viva voce | |

| | | | | | | | | | | |
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| Hom UG- FMT- 2.3 | | | State Homoeopat hic Medical Councils Structure, functions and legislation Homoeopat hic Practitioner s (Profession al Conduct, Etiquette and Code of Ethics) Regulations ,1982 with amendment s (up to 2014) Duties of Registered Homoeopat hic Medical practitioner | Discuss medical negligence with 2 examples. | C-II | MK | Interactive lectures, Written Case Scenario, Moot court. | SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 2.4 | | | | Discuss privileged communica tion in relation to rights and duties of doctors and patients. | C-II | MK | Interactive lectures, Written Case Scenario, Moot court. | SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | |

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| Hom UG- FMT- 2.5 | | | in medico- legal cases. Consent, types of consent and its importanc e in practice Bioethics - Introducti on and principles | Explain the duties of registered Homoeopat hic medical practitioner in medicolega l cases. | C-II | MK | Interactive Lectures, | LAQ | Theory - LAQ , Viva voce Examination | |
| Hom UG- FMT- 2.6 | | | | Discuss the principles of bioethics. | C-II | DK | Interactive lectures, Problem Based Learning. | Assignme nt | Viva voce Examination | |

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| Hom UG- FMT- 2.7 | | | | Explain about the types of consent and its importance in practice | C-II | MK | Interactive lectures | SAQ, LAQ | Theory - SAQ and LAQ Viva voce examination | |
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5.3. Topic: Legal procedures-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom /Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| Hom UG- FMT- 3.1 | KS CS PBL PRF | K | Understandin g legal terms – CrPC, IPC, IEA, offence, civil and criminal cases Inquest, types of inquest Courts of law in India, jurisdiction, hierarchy and | Define CrPC, IPC | C-I | MK | Interactive lecture | MCQ | Theory - Viva voce | None |
| Hom UG- FMT- 3.2 | | | | Differentiate between civil and criminal cases | C-II | MK | Interactive lecture | SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 3.3 | | | | Define Inquest | C-I | MK | Interactive lecture | MCQ | Theory - Viva voce | |

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| Hom UG- FMT 3.4 | | | power of different courts of law the sentences passed by them (India) | Explain the different types of Inquest. | C-II | MK | Interactive lecture | SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 3.5 | | | legal procedure Medical evidences in courts, dying declaration, dying deposition, including medical certificates and medico- legal reports. | Classify the different courts of Law in India | C-II | MK | Lecture , Field visits. | MCQ, SAQ LAQ | Theory - SAQ and LAQ , Viva voce | |

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| Hom UG- FMT- 3.6 | | | Recording of evidence Witnesses and types Conduct and duties of doctors in witness box | Explain the power of different courts of law in India. | C-II | MK | Lecture , Field visits. | SAQ LAQ | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 3.7 | | | | Differentiate between dying declaration and dying disposition | C-II | MK | Interactive lecture | SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 3.8 | | | | Explain the types of witnesses | C-II | MK | Interactive lecture | MCQ, SAQ | Theory - MCQ, SAQ, Viva voce | |
| Hom UG- FMT- 3.6 | | | | Explain the duties of doctors in witness box | C-II | MK | Interactive lecture, Moot court, Field visit | SAQ LAQ | Theory - SAQ and LAQ , Viva voce | |

5.4. Topic: Personal identification-

| Sl. No. | Competency | Miller | Content | SLO | Bloom /Guilbert | Priority | TL MM | Assessment | | Integration |
|----------------|-------------------------|--------|---|---|-----------------|----------|---|-------------------------------------|----------------------------------|-------------|
| | | | | | | | | F | S | |
| Hom UG-FMT-4.1 | KS CS PBL PRF. | K | Determinati on of age, gender, race, religion in the living and the dead, Dactylogra phy, foot prints. Bones, scars and teeth, tattoo marks, handwriting , anthropome | Explain the procedure for Identification of age, sex, race and religion in living and dead. | C-II | MK | Interactive lecture, , written case scenario. | SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | None |
| Hom UG-FMT-4.2 | | | | Define Dactylography | C-I | MK | Interactive lecture, | Tutorial Assignme nt | Viva voce | |

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| Hom UG- FMT- 4.3 | | | try and other identificatio n data Examinatio n of biological stains and hair. DNA finger printing Medicolega l | Explain the medicolegal importance of dactylography. | C-II | MK | Interactive lecture, written case scenario. Demonstrati on | MCQ, SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 4.4 | | | importance | Discuss the methods of identification of data, with specific reference to anthropometry. | C-II | MK | Interactive lecture, written case scenario. Problem Based Learning, Demonstrati on | MCQ, SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 4.5 | | | | Explain the medicolegal importance of DNA fingerprinting | C-II | MK | Interactive lecture, Demonstrati on | MCQ, SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | |

5.5. Topic: death and its medicolegal importance-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom /Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| Hom UG-FMT-5.1 | KS PRF CS | K | Thanatology, Death and its types, their medico-legal importance | Define Thanatology | C-I | MK | Interactive lecture, lecture | MCQ, Tutorial Assignment | Viva voce | None |
| Hom UG-FMT-5.2 | | | somatic death, molecular death, asphyxia, coma, syncope, | Differentiate between various types of death. | C-II | MK | Interactive lecture, lecture demonstration, written case scenario. Field visits. | MCQ, SAQ, LAQ, Tutorial Assignment | Theory - SAQ and LAQ , Viva voce | |

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| Hom UG- FMT- 5.3 | | | suspended animation Differentiat e cause, manner and mode of death Pathology of asphyxial death, negative autopsy, | Explain the mechanism of drowning with its signs and symptoms and medicolegal importance. | C-II | MK | Interactive lecture, written case scenario, Problem Based Learning | MCQ, SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 5.4 | | | sudden death and causes Organ transplantat ion and the laws governing organ transplantat ion Signs of death (1) | Explain the mechanism of hanging with its signs and symptoms and medicolegal importance. | C-II | MK | Interactive lecture, written case scenario, Problem Based Learning | MCQ, SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | |

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| Hom UG- FMT- 5.5 | | | immediate, (2) early, (3) late and their medico- legal importance, estimation of post- mortem interval Asphyxial deaths | Explain the mechanism of coma. | C-II | MK | Interactive lecture, written case scenario, Problem Based Learning | MCQ, SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 5.6 | | | (mechanica l asphyxia and drowning). Death from starvation, cold and heat etc. | Explain suspended animation | C-II | MK | Interactive lecture, written case scenario, Problem Based Learning | MCQ, SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 5.7 | | | | Discuss medicolegal aspects of Organ Transplantation and laws governing it | C-II | DK | Interactive lecture, written case scenario, Problem Based Learning | MCQ, SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | |

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| Hom UG- FMT- 5.8 | | | | Explain the immediate, early and late signs of death and their medicolegal importance | C-II | MK | Interactive lecture, written case scenario, Problem Based Learning | MCQ, SAQ LAQ, Tutorial Assignment | Theory - SAQ and LAQ , Viva voce | |
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5.6. Topic: Injury and its medicolegal importance-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom /Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| Hom UG- FMT- 6.1 | KS CS PBL PRF | K | Mechanical, thermal, firearm, regional, transportation and traffic injuries; | Differentiate between various types of injuries. | C-II | MK | Interactive lecture, lecture demonstration, written case scenario. Field visits. | MCQ, SAQ LAQ, Tutorial Assignment | Theory - SAQ and LAQ , Viva voce | None |

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|---------------------------|--|--|--|--|------|----|--|---|---|--|
| Hom UG- FMT- 6.2 | | | injuries from radiation, blast, electrocution and lightning and their medicolegal importance | Explain the types of mechanical injuries with medico-legal importance | C-II | MK | Interactive lecture, lecture demonstration, written case scenario. Field visits. | MCQ, SAQ LAQ, Tutorial Assignment | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 6.3 | | | | Explain the types of thermal injuries with medico-legal importance | C-II | MK | Interactive lecture, lecture demonstration, written case scenario. Field visits. | MCQ, SAQ LAQ, Tutorial Assignment | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 6.4 | | | | Explain the types of firearm injuries with medico- legal importance | C-II | MK | Interactive lecture, lecture demonstration, written case scenario. Field visits. | MCQ, SAQ LAQ, Tutorial Assignment | Theory - SAQ and LAQ , Viva voce | |

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| Hom UG- FMT- 6.5 | | | | Explain the types of regional injuries with medico-legal importance | C-II | MK | Interactive lecture, lecture demonstrati on, written case scenario. Field visits. | MCQ, SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 6.6 | | | | Explain injuries from radiation, blast, electrocution and lightning with medico- legal importance | C-II | DK | Interactive lecture, lecture demonstrati on, written case scenario. Field visits. | MCQ, SAQ LAQ, Tutorial Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 6.7 | | | | Define Ballistics | C-I | MK | Interactive lecture | MCQ, SAQ | Theory - MCQ, Viva voce | |

5.7. Topic: Forensic psychiatry-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom /Guilbert | Priority | TL MM | Assessment | | Integration |
|----------------|------------------------|--------|--|-------------------|-----------------|----------|---|------------|-------------------------|-------------|
| | | | | | | | | F | S | |
| Hom UG-FMT-7.1 | KS CS PBL PRF | K | Definitions, delusion, delirium, illusion, hallucination, impulse, obsession, mania, ICD-11 classification | Explain delusion. | C-II | MK | Interactive lecture, lecture demonstration. Field visits. | SAQ | Theory – SAQ, Viva-voce | None |
| Hom UG-FMT-7.2 | | | n of Insanity, mental subnormality. Definition and brief overview of common | Explain delirium. | C-II | MK | Interactive lecture | SAQ | Theory – SAQ, Viva-voce | |

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| Hom UG- FMT- 7.3 | | | mental illnesses. True and feigned mental illness. Civil and criminal responsibilities of a person with mental illness/disability. Development of insanity, diagnosis, admission to mental asylum, care of mentally ill person and discharge. | Explain Illusion. | C-II | MK | Interactive lecture | SAQ | Theory – SAQ, Viva-voce | |
| Hom UG- FMT- 7.4 | | | | Explain hallucination. | C-II | MK | Interactive lecture | SAQ | Theory – SAQ, Viva-voce | |
| Hom UG- FMT- 7.5 | | | | Explain Impulsive obsession disorder. | C-II | MK | Interactive lecture | SAQ | Theory – SAQ, Viva-voce | |
| Hom UG- FMT- 7.6 | | | | Explain mania. | C-II | MK | Interactive lecture | SAQ | Theory – SAQ, Viva-voce | |
| Hom UG- FMT- 7.7 | | | | Explain about the ICD-11 classification of Insanity, mental subnormality | C-II | MK | Interactive lecture | MCQ, SAQ, LAQ, Assignment | Theory And Practical Examination | |

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| Hom UG- FMT- 7.8 | | | | Discuss civil and criminal responsibilities of person with mental illness. | C-II | MK | | MCQ, SAQ LAQ, Assignme nt | Theory And Practical Examination | |
| Hom UG- FMT- 7.9 | | | | Explain Mental Health Act. | C-II | MK | | MCQ, SAQ LAQ, Assignme nt | Theory And Practical Examination | |
| Hom UG- FMT- 7.10 | | | | Discuss about the admission of an insane person to mental asylum, care of mentally ill person and discharge. | C-II | MK | | MCQ, SAQ LAQ, Assignmen t | Theory And Practical Examination | |

5.8. Topic: Postmortem examination (ML autopsy)-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom /Guilbert | Priority | TL MM | Assessment | | Integration |
|----------------|-------------------------|--------|---|--|-----------------|----------|---|---------------------------|---|-------------|
| | | | | | | | | F | S | |
| Hom UG-FMT-8.1 | KS CS PBL PRF. | K | Purpose, procedure, legal bindings; difference between pathological and medico-legal autopsies. External examination, internal examination of adult, foetus and skeletal remains. Artefacts | Define autopsy | C-I | MK | Interactive lecture | MCQ, | Viva voce examination | None |
| Hom UG-FMT-8.2 | | | | Enlist the objectives of conducting a Medico legal Autopsy | C-II | MK | Interactive lecture, lecture demonstration, Field visits. | SAQ LAQ, Assignment | Theory – SAQ, LAQ And Viva voce Examination | |

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| Hom UG- FMT- 8.3 | | | Forensic science Laboratory | Define Artefacts | C-I | MK | Interactive lecture | MCQ, SAQ | Theory And Practical Examination | |
| Hom UG- FMT- 8.4 | | | | Discuss in detail about the Forensic science Laboratory | C-II | DK | Interactive lecture, lecture demonstrati on,Field visits. | Assignme nt | Theory-SAQ And Viva voce Examination | |

5.9. Topic: Impotency and sterility-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom /Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| Hom UG- FMT- 9.1 | KS CS PBL PRF. | K | Impotence, sterility, sterilization , Artificial | Define Impotence and Sterility | C-I | MK | Interactive lecture, | MCQ, Assignme nt | Theory , Viva voce | Integration with OBG |
| Hom UG- FMT- 9.2 | | | Inseminatio n, surrogacy, in-vitro fertilization | Explain the factors leading to impotency and sterility | C-II | MK | Integrated learning | SAQ LAQ, Assignme nt | Theory - SAQ and LAQ , Viva voce | |

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| Hom UG- FMT- 9.3 | | | Legal issues related to impotence, sterility and artificial insemination, surrogacy, in-vitro fertilization legitimacy, sperm donation, sperm banks, ova banks, freezing of gametes, frozen embryos, medicolegal importance | Explain Artificial Insemination | C-II | MK | Interactive lecture | SAQ LAQ, Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 9.4 | | | | Explain surrogacy with its medico-legal importance | C-II | MK | Interactive lecture | SAQ LAQ, Assignme nt | Theory - SAQ and LAQ , Viva voce | |

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| Hom UG- FMT- 9.5 | | | | Explain in- vitro fertilization with its medico-legal importance | C-II | DK | Interactive lecture | SAQ LAQ, Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 9.6 | | | | Explain the functions of sperm and ova banks with its medicolegal importance | C-II | NK | Interactive lecture | SAQ LAQ, Assignme nt | Theory - SAQ and LAQ , Viva voce | |

5.10. Topic: Sexual abuse, exploitation in all genders, defloration; pregnancy and delivery-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom /Guilbert | Priority | TL MM | Assessment | | Integration |
|-----------------|-------------------------|--------|---|---|-----------------|----------|--|---------------------------|----------------------------------|----------------------|
| | | | | | | | | F | S | |
| Hom UG-FMT-10.1 | KS CS PBL PRF. | K | The presumptive, probable and positive signs of pregnancy, | Discuss about the presumptive, probable and positive signs of pregnancy | C-II | MK | Interactive lecture, lecture demonstration | MCQ, SAQ, LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | Integration with OBG |
| Hom UG-FMT-10.2 | | | sexual exploitation , sexual abuse, | Explain the medico Legal aspects of legitimacy | C-II | MK | Interactive lecture, lecture demonstration | MCQ, SAQ, LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |
| Hom UG-FMT-10.3 | | | pregnancy, delivery, posthumous child, pseudocyesis, superfoetation, superfecundation, legitimacy and | Explain superfoetation with its medicolegal importance. | C-II | MK | | MCQ, SAQ, LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |

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| | | | paternity - legal aspects | | | | | | | |
| Hom UG-FMT-10.4 | | | | Explain superfecundation with its medicolegal importance. | C-II | MK | | MCQ, SAQ, LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |

5.11. Topic: Abortion and infanticide-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom /Guilbert | Priority | TL MM | Assessment | | Integration |
|-----------------|-------------------------|--------|--|--|-----------------|----------|---|---------------------------|----------------------------------|----------------------|
| | | | | | | | | F | S | |
| Hom UG-FMT-11.1 | KS CS PBL PRF. | K | Abortion: different methods, complications, | Define abortion. | C-I | MK | Interactive lecture | MCQ, SAQ | Theory - SAQ, Viva voce | Integration with OBG |
| Hom UG-FMT-11.2 | | | accidents following criminal abortion, MTP, medicolegal importance | Explain different methods of abortion with its signs and symptoms and medicolegal importance | C-II | MK | Interactive lecture, , group discussions, Integrated learning | MCQ, SAQ, LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |

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| Hom UG- FMT- 11.3 | | | Abortifacient drugs and methods Infant death, signs of live birth, legal definitions, | Explain various signs of live birth | C-II | MK | Interactive lecture, , group discussions, Integrated learning | MCQ, SAQ LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 11.4 | | | battered baby syndrome, cot death, Munchausen's syndrome | Discuss the regulations of MTP Act 1971 | C-II | MK | Interactive lecture, , group discussions, Integrated learning | MCQ, SAQ LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 11.5 | | | | Explain battered baby syndrome | C-II | MK | Interactive lecture, , group discussions, Integrated learning | MCQ, SAQ Assignment | Theory - SAQ, Viva voce | |
| Hom UG- FMT- 11.6 | | | | Explain cot death. | C-II | MK | Interactive lecture, , group discussions, Integrated learning | MCQ, SAQ Assignment | Theory - SAQ Viva voce | |

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| Hom UG- FMT- 11.7 | | | | Explain Munchausen's syndrome | C-II | MK | Interactive lecture, , group discussion s, Integrated learning | MCQ, SAQ | Theory - SAQ Viva voce | |
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5.12. Topic: Sexual offences-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom /Guilbert | Priority | TL MM | Assessment | | Integration |
|----------------------------|-------------------------|--------|--|---|--------------------|----------|---|---------------------------------------|---|-----------------------------|
| | | | | | | | | F | S | |
| Hom UG- FMT- 12.1 | KS CS PBL PRF. | K | Natural sexual offenses, Unnatural sexual offenses, Sexual | Enlist the various sexual offences | C-I | MK | Interactive lecture, small group discussions Integrated learning | Assignme nt | Theory- SAQ Viva voce | Integration w ith OBG |
| Hom UG- FMT- 12.2 | | | perversions The clinical examination and findings of victim and assailant | Classify the various sexual offences. | C-II | MK | Interactive lecture, small group discussion s, Integrated learning | MCQ, SAQ LAQ, Assignme nt | Theory - SAQ and LAQ , Viva voce | |

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| Hom UG- FMT- 12.3 | | | The medicolega l aspects of sexual offenses and perversions . IPC, CrPC | Explain the natural sexual offences. | C-II | MK | Interactive lecture, small group discussion s, Integrated learning | MCQ, SAQ LAQ, Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 12.4 | | | { Bhartiya Nyay Sanhita Bill 2023 & Bharatiya Sakshya (Second) Bill 2023 } | Explain the unnatural sexual offences. | C-II | MK | Interactive lecture, small group discussion s, Integrated learning | MCQ, SAQ LAQ, Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 12.5 | | | | Explain the different sexual perversions. | C-II | MK | Interactive lecture, small group discussion s, Integrated learning | MCQ, SAQ LAQ, Assignme nt | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 12.6 | | | | Discuss the clinical examination and findings of victim and | C-II | MK | Interactive lecture, small group | SAQ LAQ, Assignme nt | Theory - SAQ and LAQ , Viva voce | |

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| | | | | assailant of a sexual offence | | | discussion s, Integrated learning | | | |
| Hom UG-FMT-12.7 | | | | Explain the medicolegal aspects of sexual offenses and perversions. | C-II | MK | Interactive lecture, small group discussions, Integrated learning | SAQ LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |
| Hom UG-FMT-12.8 | | | | Explain the provisions in the Bhartiya Nyay Sanhita Bill 2023 & Bharatiya Sakshya (Second) Bill 2023} | C-II | MK | Interactive lecture, small group discussions, Integrated learning | LAQ, Assignment | Theory - LAQ , Viva voce | |

5.13. Topic: General toxicology-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom /Guilbert | Priority | TL MM | Assessment | | Integration |
|-----------------|-------------------------------------|--------|---|---|-----------------|----------|--|---------------------------|----------------------------------|-------------|
| | | | | | | | | F | S | |
| Hom UG-FMT-13.1 | KS PC HO CS PBL PRF. | K | Forensic Toxicology and Poisons, Classification of poisons Medico – legal | Classify various types of poisons | C-II | MK | Interactive lecture, lecture demonstration, group discussions, Integrated learning | MCQ, SAQ, LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | None |
| Hom UG-FMT-13.2 | | | aspects of poisons, Antidotes and types, Diagnosis of | Explain the general principles of management of poisoning | C-II | MK | | SAQ, LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |
| Hom UG-FMT-13.3 | | | poisoning in living and dead, General | Explain the types of antidotes And its uses | C-II | MK | | MCQ, SAQ, LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |
| Hom UG-FMT-13.4 | | | principles of management of poisoning, | Explain the diagnosis of poisoning in living and dead subjects, | C-II | MK | | MCQ, SAQ, LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |

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| | | | Duties of Homoeopathic Practitioner | | | | | | | |
| Hom UG-FMT-13.5 | | K | s in cases of poisoning | Describe the duties of a medical practitioner in the suspected case of poisoning | C-II | DK | | MCQ, SAQ, LAQ, Assignment | Theory - SAQ and LAQ, Viva voce | |

5.14. Topic: General toxicology-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom /Guilbert | Priority | TL MM | Assessment | | Integration |
|-----------------|-------------------------------------|--------|---|--|-----------------|----------|---|---------------------------|---------------------------------|---------------------------------|
| | | | | | | | | F | S | |
| Hom UG-FMT-14.1 | KS PC HO CS PBL PRF. | K | i) Corrosives , ii) Irritants iii) Asphyxiants iv) Neurotics v) cardiac | Describe the action, signs and symptoms, fatal dose, fatal period, post mortem findings and circumstances of corrosive poisoning | C-II | MK | Interactive lecture, , group discussions, Integrated learning | MCQ, SAQ, LAQ, Assignment | Theory - SAQ and LAQ, Viva voce | Integration with Materia medica |

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|-----------------------------|--|--|---|---|------|----|--|-----------------------------------|---|--|
| Hom UG- FMT- T14.2 | | | vi) Miscellaneous vii) food Poisoning viii) Drug dependence & drug use. | Describe the action, signs and symptoms, fatal dose, fatal period, post mortem findings and circumstances of asphyxiant poisoning. | C-II | MK | Interactive lecture, , group discussion s, Integrated learning | MCQ, SAQ LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 14.3 | | | | Describe the action, signs and symptoms, fatal dose, fatal period, post mortem findings and circumstances of neurotic poisoning. | C-II | MK | Interactive lecture, , group discussion s, Integrated learning | MCQ, SAQ LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 14.4 | | | | Describe the action, signs and symptoms, fatal dose, fatal period, post mortem findings and circumstances of irritant poisoning. | C-II | MK | Interactive lecture, , group discussion s, Integrated learning | MCQ, SAQ LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |

| | | | | | | | | | | |
|----------------------------|--|--|--|---|------|----|---|--------------------------|----------------------------------|--|
| Hom UG- FMT- 14.5 | | | | Describe the action, signs and symptoms, fatal dose, fatal period, post mortem findings and circumstances of cardiac poisoning. | C-II | MK | Interactive lecture, , group discussions, Integrated learning | MCQ, SAQ LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 14.6 | | | | Explain Medicolegal aspects in different poisoning | C-II | DK | Interactive lecture, , group discussions, Integrated learning | SAQ LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 14.7 | | | | Differentiate between the various presentations of Arsenic and Lead poisoning. | C-II | MK | Interactive lecture, , group discussions, Integrated learning | MCQ, SAQ LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |
| Hom UG- FMT- 14.8 | | | | Explain differential diagnosis of Organophosphorus poisoning | C-II | MK | Interactive lecture, , group discussions, Integrated learning | MCQ, SAQ LAQ, Assignment | Theory - SAQ and LAQ , Viva voce | |

| | | | | | | | | | | |
|----------------------------|--|--|--|--|------|----|--|-------------------------------|---|--|
| Hom UG- FMT- 14.9 | | | | Explain bioterrorism with the bacterial borne / microbial infections,/ biologic positing | C-II | NK | Interactive lecture, , group discussions ,Integrated learning | SAQ LAQ, Assignme nt | Theory - SAQ and LAQ , Viva voce | |
|----------------------------|--|--|--|--|------|----|--|-------------------------------|---|--|

5.15. Topic: Legislation relating to medical profession – including latest amendments and superceeding acts as and when applicable-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom /Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------------|-------------------------------------|--------|--|--|--------------------|----------|--|---------------------------------------|---|-------------|
| | | | | | | | | F | S | |
| Hom UG- FMT- 15 | KS PC HO CS PBL PRF. | K | Various acts as described in term wise contents | Explain the medicolegal aspects of various acts under Forensic Medicine and Toxicology | C-II | MK | Interactive lecture, lecture demonstra tion, Integrated learning | MCQ, SAQ LAQ, Assignme nt | Theory - SAQ and LAQ , Viva voce | None. |

5.16. Topic: Demonstration of weapons, poisons (Practical)-

| Sl. No. | Content | Competency / Outcome | Entry behaviour | Specific Learning Objectives | Learner activity | Assessment |
|-----------------|--|------------------------|--|---|---|-----------------------|
| Hom UG-FMT-16.1 | a) Weapons b) Toxicology - corrosives, irritants, systemic and miscellaneous poisons, gastric lavage c) Charts, diagrams, photographs, models, bones, x-ray films of medico-legal importance | KS CS PBL PRF | Enumerate different types of weapons. Enumerate different types of injuries caused by weapons | Identify various types of weapons | Demonstration, group discussions, Spotting, PBL | Practical Examination |
| | | | | Classify injury produced by them | | |
| | | | | Explain medicolegal importance of injuries produced by the weapons. | | |
| Hom UG-FMT-16.2 | | | Enumerate the different names of poisons and methods of poisoning | Identify various types of specimens of poisons | | |
| | | | | Classify the poison as per their action | | |
| | | | | Explain medicolegal importance of poisons | | |
| Hom UG-FMT-16.3 | | | Enumerate different emergency conditions related to GIT where gastric lavage is indicated | Explain gastric lavage procedures , | | |
| | | | | Explain the merits of Gastric Lavage and its indications and contraindications. | | |

5.17. Topic: Certificate Writing (Practical)-

| Sl. No. | Content | Competency / Outcome | Entry behaviour | Specific Learning Objectives | Learner activity | Assessment |
|-----------------|---|------------------------|--|---|--|-----------------------|
| Hom UG-FMT-17.1 | Various certificates like sickness certificate, physical fitness certificate, death certificate, consent form, birth certificate. | KS CS PBL PRF | Enlist the names of different medical certificates | Write various certificates like sickness certificate, physical fitness certificate, death certificate, consent form, birth certificate. | Certificate writing. Written case scenario. | Practical Examination |
| Hom UG-FMT-17.2 | Knowledge of injury certificate, examination of rape victim and assailant, drunkenness, post-mortem examination report, age certification | | | Write a report of examination of rape victim, Injury Certificate, Post Mortem Examination report, Age Certification. Drunkenness Certificate. | | |

5.18. Topic: Consent (Practical)-

| Sl. No. | Content | Competency / Outcome | Entry behaviour | Specific Learning Objectives | Learner activity | Assessment |
|--------------------------|--|------------------------|---------------------------------|--------------------------------|--|-----------------------|
| Hom UG- FMT- 18 | Medical consent, implied consent, patient confidentiality, autonomy, role of care giver, audio-video recording of cases, safety and custody of medical records | KS CS PBL PRF | Explain the meaning of consent. | Write consent in given format. | Written case scenario, Group discussion. | Practical Examination |

6. Teaching learning methods

| Lectures (Theory) | Non-lectures (Practical/Demonstrative) |
|---------------------------------|---|
| Lectures | Clinical demonstration |
| Small group discussion | Problem based discussion |
| Integrated lectures | Case based learning |
| Structured interactive sessions | Tutorials |
| | Seminars |
| | Video clips |
| | Assignments |
| | Field visits (Court visit and Isolation hospitals). |
| | Self-learning |

7. Details of assessment

7.1 Overall Scheme of Assessment (Summative)

| Sr. No | Professional Course | Term I (1-6 Months) | | Term II(7-12 Months) | | |
|--------|-----------------------------|------------------------|---|-------------------------|------------------------|---|
| 1 | Second Professional BHMS | PA I (end of 3 months) | TT I (end of 6 months) | PA II (end of 9 months) | FUE (end of 12 months) | |
| | | 10 Marks Viva | 50 Marks Practical/ Viva 1. Viva voce -25 marks 2. Practical– 25 marks (Identification of weapons, poisons, X-Rays- 10 Marks, Certificate writing- 10 Marks Case Scenario of consent taking- 5 marks) | 10 Marks Viva | 100 marks theory | 100 marks (Clinical/practical+ Viva+ IA) |

PA: Periodical Assessment; TT: Term Test; FUE: Final University Examinations; IA: Internal Assessment

7.2 Number of papers and Marks Distribution for Final University Examination (FUE)

| Sr. No. | Course Code | Papers | Theory | Practical/ Clinical | Viva Voce | Internal Assessment* | Grand Total |
|---------|-------------|--------|-----------|---------------------|-----------|--|-------------|
| 1 | HomUG-FMT | 01 | 100 marks | 50 marks** | 40 marks | 10 marks (Marks of PA I + TT I + PA II) | 200marks |

***Method of Calculation of Internal Assessment Marks for Final University Examination:**

Marks of IA- (Marks of PA-1 + Marks of TT + Marks of PA-2) / 70 X 10

****Details of practical assessment at FUE**

| Sr No | Headings | Marks |
|-------|--|-----------|
| 1 | 6 spotters – Bones, weapons, Toxicology specimens, Photographs, models – with their medicolegal aspects - 5 marks Each | 30 |
| 2 | Certificate Writing | 10 |
| 3 | Journal | 10 |
| | Total | 50 |

7.3 Paper Layout

Summative assessment(FUE):

Theory- 100 marks

| | |
|------------|-----------------|
| MCQ | 10 marks |
| SAQ | 40 marks |
| LAQ | 50 marks |

7.4 Distribution of questions for theory exam

| Sr.No | Paper | | | D Type of Questions“Yes”can be asked. “No”should not be asked. | | |
|--------------|---|-------------------------|--------------------------|---|-------------------------------|---------------------------------|
| | A List of Topics | B Term | C Marks | MCQ (1 Mark) | SAQ(5 Marks) | LAQ (10 Marks) |
| 1 | Introduction to Forensic Medicine& Medical Ethics Legal procedure | I | Refer Next Table 7.5 | No | Yes | No |
| 2 | Personal Identification | I | | Yes | Yes | No |
| 3 | Death and Its Medicolegal importance | I | | Yes | No | Yes |
| 4 | Injury and Its medicolegal importance | II | | Yes | No | Yes |
| 5 | Impotence and sterility | II | | Yes | Yes | Yes |

| | | | | | | |
|----|---|----|--|-----|-----|-----|
| | Virginity , defloration pregnancy and Delivery | II | | | | |
| | Abortion and infanticide | II | | | | |
| | Sexual offences | II | | | | |
| 6 | General Toxicology | I | | Yes | Yes | No |
| 7 | Clinical Toxicology- Corrosive Poisons | I | | Yes | Yes | No |
| 8 | Clinical Toxicology- Irritant Poisons | I | | Yes | No | Yes |
| 9 | Clinical Toxicology- Asphyxiant poisons | I | | No | Yes | No |
| 10 | Clinical Toxicology- Neurotics Poisons | II | | No | Yes | No |
| 11 | Clinical Toxicology- Cardiac Poisons | II | | No | Yes | No |
| 12 | Clinical Toxicology- Miscellaneous Poisons | II | | Yes | No | No |
| 13 | Clinical Toxicology- Food Poisoning, Drug Dependence and drug abuse | II | | Yes | No | No |
| 14 | Legislation relating to medical profession | II | | No | No | Yes |

7.5 Theme-wise distribution of questions:

| Theme | Topics | Term | Marks | MCQ's | SAQ's | LAQ's |
|-------|--|------|-------|-------|-------|-------|
| A | Introduction to Forensic Medicine Medical ethics Legal procedure | I | 5 | 0 | 5 | 0 |
| B | Personal Identification | I | 6 | 1 | 5 | 0 |
| C | Death and Its Medicolegal importance | I | 11 | 1 | 0 | 10 |
| D | Injury and Its medicolegal importance | II | 11 | 1 | 0 | 10 |
| E | Impotence and sterility Virginity , defloration pregnancy and Delivery, Abortion, Infanticide Sexual offences | II | 16 | 1 | 5 | 10 |
| F | General Toxicology | I | 6 | 1 | 5 | 0 |
| G | Clinical Toxicology- Corrosive Poisons | I | 6 | 1 | 5 | 0 |
| H | Clinical Toxicology- Irritant Poisons | I | 11 | 1 | 0 | 10 |
| I | Clinical Toxicology- Asphyxiant poisons | I | 5 | 0 | 5 | 0 |
| J | Clinical Toxicology- Neurotics Poisons | II | 5 | 0 | 5 | 0 |
| K | Clinical Toxicology- Cardiac Poisons | II | 5 | 0 | 5 | 0 |
| L | Clinical Toxicology- Miscellaneous Poisons | II | 2 | 2 | 0 | 0 |
| M | Clinical Toxicology- Food Poisoning, Drug Dependence and drug abuse | II | 1 | 1 | 0 | 0 |
| N | Legislation relating to medical profession | II | 10 | 0 | 0 | 10 |

7.6 Question paper blueprint

| A Question Serial Number | B Type of Question | Question Paper Format (Refer table 7.5 for themes) |
|-----------------------------------|--|---|
| Q1 | <p>Multiple choice Questions (MCQ)</p> <p>10 Questions</p> <p>1 mark each</p> <p>All compulsory</p> <p>Must know part: 6 MCQ Desirable to know: 2 MCQ. Nice to know: 2 MCQ</p> | <ol style="list-style-type: none"> 1. Theme B 2. Theme C 3. Theme D 4. Theme E 5. Theme F 6. Theme G 7. Theme H 8. Theme L 9. Theme L 10. Theme M |

| | | |
|----|---|--|
| Q2 | <p>Short answer Questions(SAQ) 8Questions</p> <p>5 Marks Each , All compulsory Must know part:7 SAQ</p> <p>Desirable to know: 1 SAQ Nice to know: Nil</p> | <ol style="list-style-type: none"> 1. Theme A 2. Theme B 3. Theme E 4. Theme F 5. Theme G 6. Theme I 7. Theme J 8. Theme K |
| Q3 | <p>Long answer Questions (LAQ) 5 Questions</p> <p>10 Marks each All compulsory</p> | <ol style="list-style-type: none"> 1. Theme C 2. Theme D 3. Theme E 4. Theme H 5. Theme N |

8. List of recommended Books

- C. K. Parikh, 2019, *Text Book of Medical Jurisprudence Forensic Medicine & Toxicology* (edition 21st) , CBS Publishers
- K.S. Narayan Murty, 2022, *The Essentials of Forensic Medicine & Toxicology*, Jaypee Publication ,
- Modi, N.J , *A Text Book of Medical Jurisprudence and Toxicology*
- Biswas Gautam, 2015, *Review of Forensic Medicine and Toxicology (Including Clinical & Pathological Aspects)*, Jaypee Brothers Medical Publisher (P) Ltd;.
- Nandy Apurba, *Principles of Forensic Medicine Including Toxicology*,
- Sharma D B, 2022, *Essential of Forensic Medicine and Toxicology*, (First edition) , B. Jain Publishers

9. List of contributors :

I. Dr. Dharmendra B. Sharma

Principal, Professor & HOD, Department of Forensic Medicine & Toxicology
Dr. D.Y. Patil Homoeopathic Medical College and Research Centre

II. Dr. Shiv Kumar Mishra

Professor, Department of Forensic Medicine & Toxicology, Nehru Homoeopathic Medical College and Hospital, New Delhi.

Subject name : Pathology and Microbiology

Subject code: HomUG-Path-M

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1. Preamble

Pathology and Microbiology provide comprehensive knowledge of the pathologic basis of disease, to enable a complete understanding of the reaction of man to different morbid factors causing disease -its natural course, clinical manifestations, complications and sequel.

The students must be able to discriminate symptoms of the patient & disease satisfying the Hahnemannian requirements of physicians as mentioned in aphorism 3 of Organon of Medicine, make them competent in diagnosis and to substantiate miasmatic perspective with pathology for an accurate homoeopathic prescription.

Knowledge also helps in deciding the scope, limitation and prognosis of a case through the understanding of susceptibility. Immune-mediated illnesses are becoming important areas where homoeopathic interventions can play a significant part in alleviating suffering and in bringing about a cure. The teaching should be aligned and integrated vertically in organ systems recognizing deviations from normal structure and function and clinically correlated to provide an overall understanding of the aetiology, mechanisms, laboratory diagnosis and management of diseases and horizontally with Homoeopathic Philosophy, Homoeopathic Materia Medica and Repertory to understand the Homeopathic concept of Disease and its management. Pathology will need alignments with Anatomy and Physiology on one side and clinical subjects on the other side with the foundation of homoeopathic subjects.

2. Course outcomes

At the end of the II BHMS course the students will be able to:

1. Recognize the importance of study of Pathology and Microbiology in Homoeopathic system of medicine
2. Understand the morphological changes in cell structure in disease and recognize the mechanism of the etiological factors in the causation of such changes
3. Integrate the study of Pathology and Microbiology with Homoeopathic philosophy, Materia Medica, and Repertory.
4. Understand classification of diseases as per Master Hahnemann.
5. Understand common and important diseases based on their evolution, aetio-pathogenesis, pathology, progress and prognosis.
6. Develop skill in the identification of pathological features specifically histo-pathological features, and gross pathological specimens.
7. Able to interpret laboratory reports for diagnosis and treatment purpose.
8. Develop a positive attitude towards the role of Pathology and Microbiology in Homoeopathic system

3. Course content and its term-wise distribution

3.1 Contents for Term I

| Theory | |
|---------------------------------------|---|
| Sr. No. | Topic |
| 1. | Introduction to Pathology |
| 2. | General Pathology |
| 3. | Introduction to Microbiology |
| 4. | Sterilisation and Disinfection |
| 5. | Culture medias and methods |
| 6. | Infection and Disease |
| 7. | Human Microbiome |
| 8. | Gram positive bacterias |
| 9. | Introduction to Virology |
| 10. | Introduction to Parasitology |
| 11. | Protozoans |
| Non –lecture- Practical/Demonstrative | |
| 1. | Demonstration of Instruments |
| 2. | Demonstration of Methods of sterilisation |

| | |
|-----|---|
| 3. | Demonstration of culture medias |
| 4. | Estimation of haemoglobin |
| 5. | Total count of Red Blood Cells |
| 6. | Total count of White Blood Cells |
| 7. | Bleeding time and clotting time |
| 8. | Blood grouping. |
| 9. | Gram staining |
| 10. | Demonstration of histopathological slides |
| 11. | Demonstration of Pathological specimen/models |

3.2 Contents for Term II

| Theory | |
|---------|-------------------------|
| Sr. No. | Topic |
| 1. | Systemic Pathology |
| 2. | Gram negative bacterias |
| 3. | Acid fast bacterias |
| 4. | Spirochaetes |
| 5. | Virology-DNA,RNA virus |

| | |
|--|---|
| 6. | Parasitology –Helminths |
| 7. | Mycology |
| 8. | Diagnostic procedures in Microbiology |
| Non –lecture- Practical/Demonstrative | |
| 1. | Staining of thin and thick films. |
| 2. | Differential count. |
| 3. | Erythrocyte sedimentation rate-demonstration |
| 4. | Urine examination-physical,chemical and microscopical examination. |
| 5. | Examination of Faeces- demonstration |
| 6. | Hanging drop preparation.- demonstration |
| 7. | Acid fast staining –demonstration |
| 8. | Interpretation of laboratory reports (serological tests, LFT, RFT, TFT etc) and its clinico pathological correlation |
| 9. | Demonstration of common pathological specimens/models from each system |
| 10. | Demonstration of common Pathological slides from each system |

4. Teaching hours

4.1 Gross division of teaching hours

| Pathology & Microbiology | | |
|--------------------------|--------------------------|------------------------------|
| Year | Teaching hours- Lectures | Teaching hours- Non-lectures |
| II BHMS | 200 | 80 |

4.2 Teaching hours theory

| Sr. No | Topic | Hours |
|--------|--|-------|
| | Paper I | |
| 1. | Introduction | 3 |
| | General Pathology | |
| 1. | Cell Injury and cellular adaptation | 10 |
| 2. | Inflammation and repair | 10 |
| 3. | Neoplasia | 10 |
| 4. | Immunopathology | 8 |
| 5. | Haemodynamic disorders | 10 |
| 6. | Environmental and Nutritional diseases | 2 |

| | | |
|-----|---|------------|
| | Systemic Pathology | |
| 1. | Diseases of the Haematopoietic system, bone marrow and blood | 9 |
| 2. | Diseases of the Respiratory system. | 5 |
| 3. | Diseases of the the oral cavity,salivary glands and gastro intestinal tract | 6 |
| 4. | Diseases of liver, gall bladder, and biliary ducts | 4 |
| 5. | Diseases of the Pancreas | 1 |
| 6. | Diseases of blood vessels and lymphatics | 2 |
| 7. | Diseases of Cardiovascular system | 5 |
| 8. | Diseases of kidney and lower urinary tract | 6 |
| 9. | Diseases of male reproductive system and prostate | 1 |
| 10. | Diseases of the female genitalia and breast | 4 |
| 11. | Diseases of the skin and soft tissue | 1 |
| 12. | Diseases of the musculo-skeletal system. | 2 |
| 13. | Diseases of Endocrine glands -thyroid | 2 |
| 14. | Diseases of nervous system | 1 |
| | Total | 102 |

| | | |
|-----|--|-----------|
| | Paper II | |
| | Microbiology and Parasitology | |
| 1. | General introduction, Bacterial structure, growth and metabolism & genetics | 3 |
| 2. | Identification and cultivation of bacteria(staining, culture medias, methods) | 3 |
| 3. | Sterilization and disinfection | 2 |
| 4. | Infection and disease | 2 |
| 5. | Gram positive cocci | 5 |
| 6. | Gram negative cocci | 2 |
| 7. | Gram positive aerobic bacilli | 2 |
| 8. | Gram positive anaerobic bacilli | 3 |
| 9. | Gram negative bacilli | 9 |
| 10. | Acid Fast Bacterias | 4 |
| 11. | Spirochaetes | 3 |
| 12. | Fungi- general characters- cutaneous, systemic mycosis, opportunistic | 3 |
| 13. | Introduction to parasitology | 2 |
| 14. | Protozoans | 9 |
| 15. | Helminths –cestodes, trematodes and nematodes | 14 |
| 16. | Virology-introduction &,Bacteriophages | 2 |
| 17. | DNA virus | 11 |
| 18. | RNA viruses | 12 |
| 19. | Emerging and re-emerging diseases | 2 |
| 20. | Human Microbiome- homoeopathic concept | 3 |
| 21. | Diagnostic procedures in Microbiology | 2 |
| | Total | 98 |

4.3 Teaching hours Non-lecture

| Sl. No. | Practicals | 60 hrs |
|---------|---|--------|
| 1. | Demonstration of common and latest equipments used in pathology and microbiology laboratory | 4 |
| 2. | Estimation of haemoglobin (by acidometer) | 2 |
| 3. | Total count of Red Blood Cells | 2 |
| 4. | Total count of White Blood Cells, | 2 |
| 5. | Bleeding time and Clotting time. | 2 |
| 6. | Blood grouping. | 2 |
| 7. | Staining of thin and thick films- demonstration | 2 |
| 8. | Differential count of WBC | 2 |
| 9. | Erythrocyte sedimentation rate -demonstration | 2 |
| 10. | Urine examination physical, chemical and microscopical examination. | 4 |
| 11. | Examination of Faeces- demonstration of physical, chemical (occult blood)and microscopical for ova and protozoa. | 2 |
| 12. | Demonstration of Methods of sterilisation | 2 |

| | | |
|-----|--|-----------|
| 13. | Common culture medias- demonstration | 1 |
| 14. | Gram staining | 2 |
| 15. | Acid fast staining – demonstration | 2 |
| 16. | Hanging drop preparation.- demonstration | 2 |
| 17. | Interpretation of laboratory reports (serological tests, LFT, RFT, TFT etc) and its clinico pathological correlation. | 5 |
| 18. | Demonstration of common pathological specimens/models | 10 |
| 19. | Demonstration of common histopathological slides | 10 |
| | Demonstrative Activities | 20 |
| 1. | Seminar/tutorials/ Symposium | 8 |
| 2. | PBL/CBL | 6 |
| 3. | Group discussion | 6 |

5. Content mapping (competencies tables)

5.1. Introduction to Pathology-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|-------------------------|----------------------|--------|---|--|------------------|----------|----------------------------------|---------------------|---------------------|---------------------|
| | | | | | | | | F | S | |
| HomU G-Path M.1.1 | KS | K | Basic definitions | Define the terms “Pathology”, “Pathophysiology”, “Health”, “Disease” | C1 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ | |
| HomU G-Path M.1.2 | KS | K | Branches of Pathology | State the branches of Pathology | C1 | MK | Lecture Slide presentation | Viva Voce MCQ | Viva Voce MCQ | |
| HomU G-Path M.1.3 | KS | K | Contributions of important scientists to Pathology | List the contribution of important scientists to Pathology | C1 | NK | Lecture Slide presentation | Viva Voce MCQ | NA | |
| HomU G-Path M.1.4 | KS | K | Common terms for study of diseases | Enumerate the common terms for study of diseases | C1 | MK | Lecture Slide presentation | Viva Voce MCQ | Viva Voce MCQ | |
| HomU G-Path M.1.5 | KS | K | Definition of health as per Homoeopathic philosophy | Define Health according to Homoeopathic concept – Aphorism -9 | C1 | MK | Lecture Slide presentation | Viva Voce MCQ | Viva Voce MCQ | Organon of Medicine |

| | | | | | | | | | | |
|-------------------------|----|---|---|--|----|----|--------------------------------------|---------------------|---------------------|------------------------|
| HomU G-Path M.1.6 | KS | K | Definition of disease as per Homoeopathic philosophy | Define Disease according to Homoeopathic concept- Aphorism -11 | C1 | MK | Lecture Slide present ation | Viva Voce MCQ | Viva Voce MCQ | Organon of Medicine |
| HomU G-Path M.1.7 | KS | K | Homoeopathic concept of evolution of disease and cure | Describe the Homoeopathic concept of evolution of disease and cure | C1 | MK | Lecture Slide present ation | Viva Voce SAQ | Viva Voce SAQ | Organon of Medicine |

5.2. Cell injury and cellular adaptation-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|-------------------------|----------------------|--------|--|--|------------------|----------|--------------------------------------|----------------------------|----------------------------|-------------|
| | | | | | | | | F | S | |
| HomU G-Path M 2.1 | KS | K | Definition of Cell injury | Define the term “Cell injury” | C 1 | MK | Lecture Slide present ation | Viva Voce MCQ | Viva Voce MCQ | |
| HomU G-Path M 2.2 | KS | K | Etiology of cell injury | Describe the causes of cell injury | C 1 | MK | Lecture Slide present ation | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ | |
| HomU G-Path M 2.3 | KS | KH | Cellular response to injurious stimuli | Describe the types of cellular response to injurious stimuli and stress. | C 2 | MK | Lecture Slide present ation | Viva Voce MCQ | Viva Voce SAQ MCQ | |

| | | | | | | | | | | |
|-------------------------|----|----|------------------------|--|-----|----|--------------------------------------|----------------------------|-----------------------------------|--|
| HomU G-Path M 2.4 | KS | K | Cellular adaptation | Define the term “cellular adaptation” | C 1 | MK | Lecture | Viva Voce SAQ | Viva Voce SAQ LAQ | |
| HomU G-Path M 2.5 | KS | K | | Discuss the various types of cellular adaptation with examples | C 1 | MK | Lecture Slide present ation | Viva Voce MCQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M 2.6 | KS | K | Atrophy | Define the term “atrophy” | C 1 | MK | Lecture | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | |
| HomU G-Path M 2.7 | KS | KH | | Explain the etiopathogenesis atrophy with examples | C 2 | MK | Lecture Slide present ation | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | |
| HomU G-Path M 2.8 | KS | KH | | Describe the morphologic features of atrophied cell | C 2 | MK | Lecture Slide present ation | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | |
| HomU G-Path M 2.9 | KS | K | Hyperplasia | Define the term “Hyperplasia” | C 1 | MK | Lecture | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | |

| | | | | | | | | | | |
|--------------------------|----|----|---|---|-----|----|----------------------------------|----------------------------|-----------------------------------|--|
| HomU G-Path M 2.10 | KS | KH | | Describe types of hyperplasia with examples | C 2 | MK | Lecture Slide presentation | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | |
| HomU G-Path M 2.11 | KS | KH | | Discuss the morphologic features of hyperplasia | C 2 | MK | Lecture Slide presentation | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | |
| HomU G-Path M 2.12 | KS | K | Hypertrophy | Define the term hypertrophy | C 1 | MK | Lecture | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | |
| HomU G-Path M 2.13 | KS | KH | | Describe the types of hypertrophy with examples. | C 2 | MK | Lecture Slide presentation | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | |
| HomU G-Path M 2.14 | KS | KH | | Describe the morphologic features of hypertrophy | C 2 | MK | Lecture Slide presentation | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | |
| HomU G-Path M 2.15 | KS | KH | Differences between Hypertrophy and Hyperplasia | Enumerate differences between Hypertrophy and Hyperplasia | C 2 | MK | Lecture Slide presentation | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | |

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| HomU G-Path M 2.16 | KS | K | Metaplasia | Define the term “Metaplasia” | C 1 | MK | Lecture | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | |
| HomU G-Path M 2.17 | KS | KH | | Describe the types of metaplasia with examples. | C 2 | MK | Lecture Slide present ation | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | |
| HomU G-Path M 2.18 | KS | K | Dysplasia | Define the term “Dysplasia” | C 1 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ SAQ | |
| HomU G-Path M 2.19 | KS | KH | | Explain the cytological changes in Dysplasia | C 2 | MK | Lecture Slide present ation | Viva Voce MCQ | Viva Voce MCQ SAQ | |
| HomU G-Path M 2.20 | KS | KH | Biochemical and ultra structural changes in reversible cell injury | Describe the sequential biochemical and ultrastructural changes in reversible cell injury due to Ischaemia and hypoxia | C 2 | MK | Lecture Slide present ation | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | |
| HomU G-Path M 2.21 | KS | KH | Biochemical and ultrastructural changes in Irreversible cell injury | Describe the sequential biochemical and ultrastructural changes in irreversible cell injury due to Ischaemia and hypoxia | C 2 | MK | Lecture Slide present ation | Viva Voce MCQ SAQ | Viva Voce SAQ MCQ LAQ | |

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| HomU G-Path M 2.22 | KS | KH | Pathogenesis of cell injury | Describe the pathogenesis of Free Radical-mediated cell injury | C 2 | MK | Lecture Slide present ation | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ | |
| HomU G-Path M 2.23 | KS | K | Morphology of Reversible cell injury | Enumerate the common morphologic forms of reversible cell injury | C1 | MK | Lecture Slide present ation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M 2.24 | KS | K | Hydropic change | Define the term “Hydropic change” | C 1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M 2.25 | KS | KH | Hydrophic change | Describe the etiopathogenesis of Hydropic change | C 2 | MK | Lecture Slide present ation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M 2.26 | KS | KH | | Describe morphology of hydropic change with an example | C 2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M 2.27 | KS | K | Fatty change | Define the term “Fatty change” | C 1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |

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| HomU G-Path M 2.28 | KS | KH | | Describe the etiopathogenesis of Fatty change | C 2 | MK | Lecture Slide presentation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M 2.29 | KS | KH | | Describe morphology of Fatty change in various organs | C 2 | MK | Lecture Slide presentation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M 2.30 | KS | KH | Types of mucoid change with examples | Describe the types of mucoid change with examples | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ | |
| HomU G-Path M 2.31 | KS | KH | Types of Hyaline change with examples | Describe the types of hyaline change with examples | C 2 | MK | Lecture Slide presentation | Viva Voce MCQ SAQ | Viva Voce MCQ | |
| HomU G-Path M 2.32 | KS | K | Morphological forms of Irreversible cell injury | List the Morphological forms of Irreversible cell injury | C 1 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ | |
| HomU G-Path M 2.33 | KS | K | Necrosis | Define the term “Necrosis” | C 1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |

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| HomU G-Path M 2.34 | KS | K | | Describe the types of Necrosis with examples | C 1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M 2.3 5 | KS | K | Coagulative Necrosis | Describe the etiopathogenesis of Coagulative necrosis | C 2 | MK | Lecture Slide present ation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M 2.3 6 | KS | KH | | Describe the morphological features of Coagulative necrosis in affected organs | C 2 | MK | Lecture Slide present ation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M 2.3 7 | KS | KH | Liquefactive necrosis | Describe the etiopathogenesis of liquefactive necrosis | C 2 | MK | Lecture Slide present ation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M 2.3 8 | KS | KH | | Describe the morphological features of liquefactive necrosis in affected organs | C 2 | MK | Lecture Slide present ation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M 2.39 | KS | KH | Differences between coagulative necrosis and liquefactive necrosis | Enumerate differences between coagulative necrosis and liquefactive necrosis | C 2 | MK | Lecture Slide present ation | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ | |

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| HomU G-Path M 2.40 | KS | KH | Caseous necrosis | Describe the etiopathogenesis caseous necrosis | C 2 | MK | Lecture Slide present ation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M 2.41 | KS | KH | | Describe themorphological features of caseous necrosis inaffected organs | C 2 | MK | Lecture Slide present ation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M 2.42 | KS | KH | Fat necrosis | Describe the etiopathogenesis, morphological features of fat necrosis | C2 | MK | Lecture Slide present ation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M 2.43 | KS | KH | Fibrinod necrosis | Describe the etiopathogenesis, microscopic features of fibrinod necrosis | C2 | MK | Lecture Slide present ation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M 2.4 4 | KS | K | Gangrene | Define the term “Gangrene” | C 1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | Surgery |
| HomU G-Path M 2.4 5 | KS | K | | State the types of gangrene | C 1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | Surgery |

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| HomU G-Path M 2.4 6 | KS | KH | Dry gangrene | Explain the etiopathogenesis morphological features of dry gangrene with examples | C 2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | Surgery |
| HomU G-Path M 2.4 7 | KS | KH | Wet gangrene | Describe the etiopathogenesis morphological features of wet gangrene with examples | C 2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | Surgery |
| HomU G-Path M 2.4 8 | KS | KH | Differences between dry gangrene and wet gangrene | Enumerate the differences between dry gangrene and wet gangrene | C 2 | MK | Lecture | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ | |
| HomU G-Path M 2.49 | KS | KH | Etiopathology of Gas gangrene | Explain the etiopathogenesis and morphological features of Gas gangrene | C 2 | MK | Lecture Slide present ation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M 2.50 | KS | K | Pathological calcification | Define the term “Pathological calcification” | C 1 | MK | Lecture Slide present ation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M 2.51 | KS | KH | | Enumerate the types of pathological calcification | C 1 | MK | Lecture Slide present ation | MCQ Viva Voce | MCQ Viva Voce | |

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| HomU G-Path M 2.52 | KS | KH | | Describe the etiopathogenesis of Dystrophic calcification with examples | C 2 | MK | Lecture Slide presentation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M 2.53 | KS | KH | | Describe the etiopathogenesis of Metastatic calcification with examples | C 2 | MK | Lecture Slide presentation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M 2.54 | KS | KH | | Enumerate the differences between Dystrophic calcification and Metastatic calcification | C 2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M 2.55 | KS | K | Apoptosis | Define the term “Apoptosis” | C 1 | DK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M 2.56 | KS | KH | | Describe the role of apoptosis in pathologic processes with examples | C 2 | DK | Lecture Slide presentation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M 2.57 | KS | K | Intracellular accumulation | Define the term “Intracellular accumulations” | C 1 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ | |

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| HomU G-Path M 2.58 | KS | KH | | Enumerate the types of abnormal intracellular accumulations with examples | C 2 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ | |
| HomU G-Path M 2.59 | KS | K | Definition of Xanthomas, “Russell bodies”, “Mallory body”, “Brown atrophy”, “Heart failure cells” | Define the terms “Xanthomas”, “Russell bodies”, “Mallory body”, “Brown atrophy”, “Heart failure cells” | C 1 | DK | Lecture | Viva Voce MCQ | Viva Voce MCQ | |

5.3. Inflammation and repair-

| Sl.No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomU G-Path M.3.1 | KS | K | Inflammation | Define the term “Inflammation” | C 1 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ | Physiology |
| HomU G-Path M.3.2 | KS | K | Causes of inflammation | State the Causes of inflammation | C 1 | MK | Lecture | Viva Voce SAQ | Viva Voce SAQ | |
| HomU G-Path M.3.3 | KS | K | Types of inflammation | State the types of Inflammation | C 1 | MK | Lecture | Viva Voce MCQ | SAQ Viva Voce MCQ | |

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| HomU G-Path M.3.4 | KS | K | Cardinal signs of inflammation | State the cardinal signs of inflammation | C 1 | MK | Lecture | Viva Voce MCQ | SAQ Viva Voce MCQ | |
| HomU G-Path M.3.5 | KS | K | Definition of Acute inflammation | Define the term “Acute inflammation” | C 1 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ | |
| Hom UG- Path M.3.6 | KS | KH | Vascular events of the acute inflammation | Describe the mechanism of vascular events in acute inflammatory response | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| Hom UG- Path M.3.7 | KS | KH | Cellular phase of acute inflammation | Describe the steps of cellular phase of acute inflammation | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| Hom UG- Path M.3.8 | KS | KH | Process of Phagocytosis | Describe the three processes of Phagocytosis in cellular phase of acute inflammation | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.3.9 | KS | K | Chemical mediators of inflammation | List the Chemical mediators of inflammation | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| Hom UG- Path M II.3.10 | KS | KH | Role of cell derived Chemical mediators | State the various sources and functions of cell derived chemical mediators of inflammation | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |

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| HomU G-Path M.3.11 | KS | KH | Role of plasma derived Chemical mediators | State the various sources and functions of Plasma derived chemical mediators of inflammation | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.3.12 | KS | KH | Inflammatory cells | Describe the functions of cells participating in acute and chronic inflammation | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.3.13 | KS | KH | Giant cells | Describe the three types of macrophages derived giant cells | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.3.14 | KS | K | Morphologic Patterns of Acute Inflammation | State the Morphologic Patterns of Acute Inflammation | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.3.15 | KS | KH | Classification of inflammatory lesion | Describe the classification of inflammatory lesion based on duration, type of exudates, and anatomic location affected in acute inflammation | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ | |
| HomU G-Path M.3.16 | KS | KH | Systemic effects of inflammation | Describe the systemic effects of acute inflammation | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ | |

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| HomU G-Path M.3.17 | KS | KH | Outcomes of Acute Inflammation | Describe the end result of Acute Inflammation | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ | |
| HomU G-Path M.3.18 | KS | K | Chronic inflammation | Define the term “chronic inflammation” | CI | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.3.19 | KS | K | Types of chronic inflammation | Mention the types of chronic inflammation | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.3.20 | KS | KH | Morphologic Features of chronic inflammation | Describe the general features of chronic inflammation | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.3.21 | KS | KH | Granulomatous inflammation | Describe chronic non-specific inflammation with examples | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G- PathM. 3.22 | KS | KH | Granuloma | Describe the mechanism of evolution of a granuloma | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |

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| Hom UG- Path M 3.23 | KS | KH | | Describe the morphology of granuloma | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| Hom UG- Path M 3.24 | KS | K | Examples of granulomatous inflammation | State common examples of granulomatous inflammation | C1 | MK | lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| Hom UG- Path M 3.25 | KS | KH | Systemic effects of chronic inflammation | State the systemic effects of chronic inflammation | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ | |
| HomU G-Path M.3.26 | KS | K | Definition of Healing | Define the term “Healing” | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.3.27 | KS | KH | Repair and regeneration | Describe the processes involved in repair and regeneration | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.3.28 | KS | KH | Wound healing by primary intention | Describe Wound healing by primary intention | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | Surgery |

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| HomU G-Path M.3.29 | KS | KH | Wound healing by secondary intention | Describe Wound healing by secondary intention | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | Surgery |
| HomU G-Path M.3.30 | KS | KH | Complications in healing of skin wounds | Describe the complications in healing of skin wounds | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | Surgery |
| HomU G-Path M.3.31 | KS | K | Wound healing | Discuss difference in wound healing by primary and secondary intention | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.3.32 | KS | K | Factors modifying the healing process | Explain the process of Fracture Healing | CI | NK | Lecture | Viva Voce | NA | |
| HomU G-Path M.3.33 | KS | KH | Homoeopathic aspect in inflammation | Correlate the events of inflammation and outcome of various types of inflammation with miasm and representation in repertory and different MateriaMedica. | C 2 | DK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | OM, MM, Repertory |

5.4. Haemodynamic disorders

| Sl. No. | Domains of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomU G-Path M.4.1 | KS | K | Definition of Oedema. | Define the term “Oedema” | C1 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ | Physiology |
| HomU G-Path M.4.2 | KS | KH | Types of Oedema. | Describe the pathogenesis of oedema | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.4.3 | KS | KH | Transudate and exudate | Enumerate the differences between transudate and exudate | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.4.4 | KS | KH | Etiopathogenesis of Oedema | Describe the etiopathogenesis of various types of oedema with its clinical correlation | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.4.5 | KS | K | Definition of Hyperaemia | Define the term “Active Hyperemia” | C1 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ | |

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| HomU G-Path M.4.6 | KS | K | Definition of Venous congestion | Define the term “Venous congestion” or “Passive hyperaemia” | C1 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ | |
| HomU G-Path M.4.7 | KS | KH | Chronic venous congestion | Describe the mechanisms involved in chronic venous congestion of different organs | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.4.8 | KS | KH | | Explain morphology of Chronic Venous Congestion in Lung | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.4.9 | KS | K | Definitions | Define the terms “Haemorrhage”, “Haematoma”, “Ecchymosis”, “Purpuras”, “Petechiae”, | C1 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ | Forensic medicine |
| HomU G-Path M.4.10 | KS | K | Shock | Define the term “Shock” | C1 | MK | Lecture | Viva Voce MCQS AQ | Viva Voce MCQ SAQ LAQ | |
| Hom UG- Path M 4.11 | KS | K | | Classify shock based on aetiology | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | Surgery |
| Hom UG- Path M 4.12 | KS | KH | | Describe the pathogenesis of various types of shock | C2 | MK | Lecture | Viva Voce MCQS AQ | Viva Voce MCQ SAQ LAQ | |

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| Hom UG- Path M 4.13 | KS | KH | | Describe the stages of shock | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | Surgery |
| Hom UG- Path M.4.14 | KS | K | Thrombosis | Define the term “Thrombosis” ;“Thrombus” . | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| Hom UG- Path M.4.15 | KS | K | | Enumerate the primary events in Thrombogenesis-Virchow’s triad | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| Hom UG- Path M.4.16 | KS | KH | | Describe the etio-pathogenesis of thrombosis | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| Hom UG- Path M.4.17 | KS | KH | | Describe the morphologic features of thrombi | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| Hom UG- Path M.4.18 | KS | KH | | Describe the fate of thrombus | C2 | DK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |

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| Hom UG- Path M.4.19 | KS | KH | Clinical effects of thrombi | Describe the clinical effects of various types of thrombi | C2 | DK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| Hom UG- Path M.4.20 | KS | K | Embolism | Define the term “Embolism”, “Embolus” | C1 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ | |
| Hom UG- Path M 4.21 | KS | K | | Describe the various types of Emboli | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| Hom UG- Path M 4.22 | KS | KH | Etiopathogenesi s of Pulmonary thromboembolis m | Describe the aetiopathogenesis of Pulmonary thromboembolism | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| Hom UG- Path M 4.23 | KS | KH | Pathogenesis of Thromboemboli sm | Describe the consequences of pulmonary thromboembolism | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | Practice of medicine |
| Hom UG- Path M 4.24 | KS | KH | Pathogenesis of fat embolism | Describe the pathogenesis of fat embolism | C2 | DK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ | |

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| Hom UG- Path M.4.25 | KS | KH | Pathogenesis of air embolism | Describe the pathogenesis of air embolism | C2 | DK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ | |
| Hom UG- Path M.4.26 | KS | KH | Pathogenesis of amniotic fluid embolism | Describe the pathogenesis amniotic fluid embolism | C2 | NK | Lecture | NA | | |
| Hom UG- Path M.4.27 | KS | K | Ischaemia | Define the term “Ischaemia” | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| Hom UG- Path M.4.28 | KS | KH | | Describe the etiopathogenesis of Ischaemia | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| Hom UG- Path M.4.29 | KS | KH | | Describe the factors determining severity of Ischaemic injury | C2 | DK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| Hom UG- Path M.4.30 | KS | K | Infarction | Define the term “Infarction” | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| Hom UG- Path M.4.31 | KS | KH | | Describe the etiopathogenesis of Infarction | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | Practice of medicine |

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| Hom UG- Path M.4.32 | KS | K | | State the types of Infract | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
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5.5. Immunopathology-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priorit y | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| HomU G-Path M.5.1 | KS | K | Definition of Immunity | Define the term “Immunity” | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | Physiology |
| HomU G-Path M.5.2 | KS | K | Types of immunity | State the types of immunity | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | Physiology |
| HomU G-Path M.5.3 | KS | KH | Components of Innate immunity | Describe the four components of Innate immunity | C2 | MK | Lecture Slide present ation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | Physiology |
| HomU G-Path M.5.4 | KS | KH | Functions of Innate immunity | Describe the functions of Innate immunity | C2 | MK | Lecture Slide present ation | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | Physiology |

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| HomU G-Path M.5.5 | KS | K | Definition of Adaptive immunity” | Define the term “Adaptive immunity” | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.5.6 | KS | K | Classification of Adaptive immunity | Classify Adaptive immunity with examples for each type | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.5.7 | KS | KH | Features of Active immunity | Describe the features of Active immunity | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.5.8 | KS | KH | Features of Passive immunity | Describe the features of Passive immunity | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.5.9 | KS | K | Local immunity | Explain Local immunity | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.5.10 | KS | K | Herd immunity | Explain Herd immunity | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.5.11 | KS | K | Organs of immune system | State the organs of immune system | C1 | MK | Lecture | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | Physiology |

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| HomU G-Path M.5.12 | KS | K | Cells and Organs of Immune system | State the cells of the immune system | C1 | MK | Lecture | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | Physiology |
| HomU G-Path M.5.13 | KS | KH | Humoral immunity | Explain the mechanism of humoral immunity | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | Physiology |
| HomU G-Path M.5.14 | KS | KH | Differences between Primary and Secondary immune response | Enumerate the differences between Primary and Secondary immune response” | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.5.15 | KS | KH | Mechanism of cell mediated immunity | Describe the mechanism of cell mediated immunity | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.5.16 | KS | K | Definition of “Antigen” | Define the term “Antigen” | C1 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ | Physiology |
| HomU G-Path M.5.17 | KS | K | Definition of “Antibody”, “Immunoglobu lin” | Define the terms “Antibody”, “Immunoglobulin” | C1 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ | Physiology |

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| HomU G-Path M.5.18 | KS | K | Immunoglobulin and their function | State the types of Immunoglobulin classes and their function. | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.5.19 | KS | KH | Biological functions of Complement | Describe the biological functions of Complement | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.5.20 | KS | K | Types of antigen-antibody reaction with examples | Discuss the types of antigen-antibody reactions with examples | C1 | DK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.5.21 | KS | K | Definition of Hypersensitivity | Define the term "Hypersensitivity" | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.5.22 | KS | K | Types of hypersensitivity reactions | List the types of hypersensitivity reactions | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.5.23 | KS | KH | Type I Hypersensitivity | Describe the mechanism of type I hypersensitivity reaction | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |

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| HomU G-Path M.5.24 | KS | KH | Type I Hypersensitivity reaction with examples | Describe the examples of type I hypersensitivity reaction | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.5.25 | KS | KH | Type II Hypersensitivity reaction | Describe the mechanism of type II hypersensitivity reaction | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.5.26 | KS | KH | Type II Hypersensitivity reaction – examples | Describe the examples of type II hypersensitivity reaction | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.5.27 | KS | KH | Type III Hypersensitivity reaction | Describe the mechanism of type III hypersensitivity reaction | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.5.28 | KS | KH | Type III Hypersensitivity reaction – examples | Describe the examples of type III hypersensitivity reaction | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |

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| HomU G-Path M.5.29 | KS | KH | Type IV Hypersensitivity reaction | Describe the mechanism of type IV hypersensitivity reaction | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.5.30 | KS | KH | Type IV Hypersensitivity reaction – examples | Describe the examples of type IV hypersensitivity reaction | C2 | MK | Lecture | Viva Voce SAQ MCQ | Viva Voce SAQ MCQ LAQ | |
| HomU G-Path M.5.31 | KS | K | Autoimmunity | Define the term “Autoimmunity” | C1 | DK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.5.32 | KS | KH | | Describe the pathogenesis of autoimmunity | C2 | DK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.5.33 | KS | K | Autoimmune diseases | State the autoimmune diseases | C1 | DK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.5.34 | KS | K | Amyloidosis | Define the term “Amyloidosis” | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.5.35 | KS | K | | Classify amyloidosis | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |

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| HomU G-Path M.5.36 | KS | KH | | Describe the pathogenesis of amyloidosis | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.5.37 | KS | KH | | Describe the features of amyloidosis of various organs . | C2 | DK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.5.38 | KS | K | Homoeopathic concept of immunity | Explain the concept of immunity and hypersensitivity and correlate it with the Homoeopathic concepts of susceptibility | C1 | NK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | Organon of Medicine |

5.6. Neoplasia-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomU G-Path M.6.1 | KS | K | Definition of Neoplasia | Define the term “Neoplasia” | C 1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.6.2 | KS | K | Nomenclature of tumours | Explain the nomenclature of tumours | C 1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |

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| HomU G-Path M.6.3 | KS | K | Classification of tumours | Classify tumours based on histogenesis and anticipated behaviour | C 1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.6.4 | KS | K | Special categories of tumours | State the special categories of tumours with examples | C 1 | DK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.6.5 | KS | K | Characteristics of benign and malignant neoplasms | State the characteristics of tumours | C 1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.6.6 | KS | KH | Differentiating features of benign and malignant neoplasms | Differentiate benign and malignant neoplasms based on the clinical and gross features | C 2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.6.7 | KS | KH | | Differentiate benign and malignant neoplasms based on microscopic features | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.6.8 | KS | K | Definition of “Differentiation”, “Anaplasia” | Define the terms “Differentiation”, “Anaplasia” | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |

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| HomU G-Path M.6.9 | KS | KH | Differentiating features of benign and malignant neoplasms | Differentiate benign and malignant neoplasms based on their rate of growth | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.6.10 | KS | KH | | Differentiate benign and malignant neoplasms based on their spread - local invasion and metastasis | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.6.17 | KS | K | Definition of Metastasis | Define the term “Metastasis” | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.6.18 | KS | K | Routes of Metastasis | Discuss the routes of Metastasis with examples | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | Surgery |
| HomU G-Path M.6.19 | KS | KH | Lymphatic spread of malignant tumours | Describe the mechanism of lymphatic spread of malignant tumours | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.6.20 | KS | KH | Haematogenous metastasis | Describe the mechanism of Haematogenous spread of malignant tumours | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |

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| HomU G-Path M.6.21 | KS | KH | Spread of cancer along body cavities and natural passages | Describe the mechanism of spread of cancer along body cavities and natural passages | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.6.22 | KS | KH | Molecular basis of cancer | Describe Molecular basis of cancer | C2 | NK | Lecture | NA | NA | |
| HomU G-Path M.6.23 | KS | K | Definition of Carcinogenesis , Carcinogen | Define the terms “Carcinogenesis”, “Carcinogen” | C1 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ | |
| HomU G-Path M.6.24 | KS | K | Carcinogens | Enumerate the various types of carcinogens | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.6.25 | KS | KH | Chemical Carcinogenesis | Describe the three sequential stages in chemical carcinogenesis | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ LAQ | |
| HomU G-Path M.6.26 | KS | KH | Physical carcinogenesis | Describe the mechanism of physical carcinogenesis | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |

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| HomU G-Path M.6.27 | KS | KH | Biological carcinogenesis | Describe the mechanism of biological carcinogenesis | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.6.28 | KS | KH | Effects of tumour on the host | Describe the effects of tumour on the host | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.6.29 | KS | K | Definition of Paraneoplastic syndromes | Define the term “Paraneoplastic syndromes” | C1 | MK | Lecture | Viva Voce MCQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.6.30 | KS | KH | Paraneoplastic syndromes | State the various clinical syndromes included in Paraneoplastic syndromes | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.6.31 | KS | KH | Definition of “Grading”, “Staging” | Define the terms “Grading”, “Staging” | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | Surgery |
| HomU G-Path M.6.32 | KS | KH | Tumour grading | Explain about the grading of tumour. | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | Surgery |
| HomU G-Path M.6.33 | KS | KH | Staging of tumours | Explain about the staging of tumour | C2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | Surgery |

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| HomU G-Path M.6.34 | KS | K | Laboratory Diagnosis of Cancer | State the various methods of Laboratory diagnosis of tumours | C1 | DK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.6.35 | KS | K | Tumour markers | State the important liquid based biomarkers in tumour diagnosis | C1 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | |
| HomU G-Path M.6.36 | KS | KH | Homoeopathic concept | Discuss about the miasmatic concept of neoplastic disorder | C 2 | DK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | OM,MM,Re pertory |

5.7. Environmental and nutritional diseases-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priorit y | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| HomU G-Path M.7.1 | KS | KH | Obesity | Define the term “Obesity” | C 2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | Physiology Community medicine |
| HomU G-Path M.7.2 | KS | KH | Obesity | Describe the etiopathogenesis of Obesity | C 2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | Physiology Community medicine |
| HomU G-Path M.7.3 | KS | KH | Pathogenesis of protein energy malnutrition | Describe the pathogenesis of protein energy malnutrition | C 2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | Physiology Community medicine |

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| HomU G-Path M.7.4 | KS | KH | Difference between Kwashiorkor and marasmus | Enumerate the differences between Kwashiorkor and Marasmus | C 2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | Physiology Community medicine |
| HomU G-Path M.7.5 | KS | KH | Vitamin A | Describe the lesions in Vitamin A deficiency | C 2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | Physiology Community medicine |
| HomU G-Path M.7.6 | KS | KH | Vitamin C | Describe the lesions in Vitamin C deficiency | C 2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | Physiology Community medicine |
| HomU G-Path M.7.7 | KS | KH | Vitamin D | Describe the lesions in Vitamin D deficiency | C 2 | MK | Lecture | Viva Voce MCQ SAQ | Viva Voce MCQ SAQ | Physiology Community medicine |
| HomU G-Path M.7.8 | KS | KH | Vitamin E | Describe the lesions in Vitamin E deficiency | C 2 | DK | Lecture | Viva Voce MCQ | Viva Voce MCQ | Physiology Community medicine |
| HomU G-Path M7.9 | KS | KH | Vitamin K | Describe the lesions in Vitamin K deficiency | C 2 | DK | Lecture | Viva Voce MCQ | Viva Voce MCQ | Physiology Community medicine |
| HomU G-Path M.7.10 | KS | KH | Vitamin B1 | Describe the lesions in Vitamin B1(Thiamine) deficiency | C 2 | DK | Lecture | Viva Voce MCQ | Viva Voce MCQ | Physiology Community medicine |
| HomU G-Path M.7.11 | KS | KH | Vitamin B2 | Describe the lesions in Vitamin B2 (Riboflavin) deficiency | C 2 | DK | Lecture | Viva Voce MCQ | Viva Voce MCQ | Physiology Community medicine |

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| HomU G-Path M.7.12 | KS | KH | Vitamin B3 | Describe the lesions in Vitamin B3 (Niacin) deficiency | C 2 | DK | Lecture | Viva Voce MCQ | Viva Voce MCQ | Physiology , Community medicine |
| HomU G-Path M.7.13 | KS | KH | Vitamin B6 | Describe the lesions in Vitamin B 6 (Pyridoxine) deficiency | C 2 | DK | Lecture | Viva Voce MCQ | Viva Voce MCQ | Physiology , Community medicine |

5.8. Diseases of the haematopoietic system, bone marrow and blood-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| HOMU G-Path M. 8.1 | KS | K | Red cell disorders | Define the term “Anaemia” Megaloblastic Anaemia” | C 1 | MK | Lecture | Viva MCQ | SAQ Viva voce MCQ | Physiology |
| HOMU G-Path M. 8.2 | KS | KH | Classification of Anaemia | State the patho-physiologic classification of anaemia | C 2 | MK | Lecture | Viva voce, MCQ | LAQ SAQ Viva .MCQ | Physiology |
| HOMU G-Path M. 8.3 | KS | K | | State the morphologic classification of anaemia | C 1 | MK | Lecture | Viva voce, MCQ | LAQS AQ. Viva MCQ | Physiology |
| HOMU G-Path M. 8.4 | KS | KH | | Explain the scheme of laboratory investigations for anaemia | C 2 | MK | Lecture | Viva voce, MCQ | LAQ, SAQ. Viva . MCQ | Physiology Practice of medicine |
| HOMU G-Path M. 8.5 | KS | K | Iron deficiency Anaemia | Define Iron deficiency Anaemia | C 1 | MK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | Physiology |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| HOMU G-Path M. 8.6 | KS | KH | | Describe the etio-pathogenesis of Iron deficiency anaemia | C 2 | MK | Lecture | Viva voce, MCQ | LAQ SAQ. Viva . MCQ | |
| HOMU G-Path M. 8.7 | KS | KH | | Describe the laboratory findings of iron deficiency anaemia | C 2 | MK | Lecture | Viva voce, MCQ | LAQ SAQ Viva MCQ | Practice of medicine |
| HOMU G-Path M. 8.8 | KS | KH | Megaloblastic Anaemia | Describe the etio-pathogenesis of Megaloblastic anaemia | C 2 | MK | Lecture | Viva voce, MCQ | LAQ SAQ Viva MCQ | |
| HOMU G-Path M. 8.9 | KS | KH | | Describe the laboratory diagnosis of Megaloblastic Anaemia | C 2 | MK | Lecture | Viva voce, MCQ | LAQ SAQ. Viva . MCQ | Practice of medicine |
| HOMU G-Path M. 8.10 | KS | K | Pernicious Anaemia | Define Pernicious Anaemia | C 1 | DK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | |
| HOMU G-Path M. 8.11 | KS | KH | | Discuss the etio- pathogenesis of Pernicious Anaemia | C 2 | DK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | |
| HOMU G-Path M. 8.12 | KS | KH | | Discuss the laboratory diagnosis of Pernicious Anaemia | C 2 | DK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | Practice of medicine |
| HOMU G-Path M. 8.13 | KS | K | Haemolytic Anaemia | Define the term “Haemolytic Anaemia” | C 1 | MK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| HOMU G-Path M. 8.14 | KS | KH | | Classify Haemolytic Anaemias | C2 | MK | Lecture | Viva voce, MCQ | LAQ SAQ. Viva . MCQ | |
| HOMU G-Path M. 8.15 | KS | KH | | Describe laboratory evaluation of Haemolytic Anaemia | C 2 | MK | Lecture | Viva voce, MCQ | LAQ SAQ. Viva . MCQ | |
| HOMU G-Path M. 8.16 | KS | K | types of Haemoglobinopathies | Classify Haemoglobinopathies | C 1 | DK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | |
| HOMU G-Path M. 8.17 | KS | K | Sickle cell Anaemia | Define Sickle cell Anaemia | C 1 | DK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | |
| HOMU G-Path M. 8.18 | KS | KH | | Discuss theetio- pathogenesis of sickle cell anaemia | C2 | DK | Lecture | Viva voce, MCQ | LAQS AQ. Viva . MCQ | |
| HOMU G-Path M. 8.19 | KS | KH | | Discuss the laboratory findings of sickle cell anaemia | C 2 | DK | Lecture | Viva voce, MCQ | LAQS AQ. Viva . MCQ | |
| HOMU G-Path M. 8.20 | KS | K | Thalassemia | Define Thalassemia | C 1 | MK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| HOMU G-Path M. 8.21 | KS | KH | | Classify Thalassaemia | C 2 | MK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | |
| HOMU G-Path M. 8.22 | KS | KH | | Discuss the pathophysiology of anaemia in Thalassemia | C 2 | MK | Lecture | Viva voce, MCQ | LAQS AQ. Viva . MCQ | |
| HOMU G-Path M. 8.23 | KS | KH | | Describe the laboratory findings of Thalassaemia. | C 2 | MK | Lecture | Viva voce, MCQ | LAQS AQ. Viva . MCQ | Practice of medicine |
| HOMU G-Path M. 8.24 | KS | K | Aplastic anaemia. | Define the term “Aplastic anaemia” | C 1 | DK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | |
| HOMU G-Path M. 8.25 | KS | KH | . | State the etiology of Aplastic anaemia. | C 2 | DK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | |
| HOMU G-Path M. 8.26 | KS | KH | | Describe laboratory findings of Aplastic anaemia. | C 2 | DK | Lecture | Viva voce, MCQ | SAQ. Viva .MCQ | Practice of medicine |
| HOMU G-Path M. 8.27 | KS | K | Polycythaemia | Define Polycythaemia | C 1 | DK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| HOMU G-Path M. 8.28 | KS | KH | Classification of Polycythaemia | Classify Polycythaemia on the basis of etiology | C2 | DK | Lecture , | Viva voce, MCQ | SAQ. Viva . MCQ | |
| HOMU G-Path M. 8.29 | KS | KH | laboratory diagnosis of Polycythaemia | Describe laboratory features of Polycythaemia | C2 | DK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | Practice of medicine |
| HOMU G-Path M. 8.29 | KS | K | WBC disorders | Define the terms “Leukocytosis” “Leukopenia”, “Leukaemoid reaction”, “Leukaemias” | C 1 | MK | Lecture | Viva voce, MCQ | Viva MCQ | |
| HOMU G-Path M. 8.30 | KS | KH | Leukaemia | Classify Leukaemias | C2 | MK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | |
| HOMU G-Path M. 8.31 | KS | K | | Describe the aetiology of Leukaemia | C1 | MK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | |
| HOMU G-Path M. 8.32 | KS | KH | Leukaemia | Describe the laboratory diagnosis of Chronic Myeloid Leukaemia | C 2 | MK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | Practice of medicine |
| HOMU G-Path M. 8.33 | KS | KH | | Describe the laboratory diagnosis of Acute Myeloid Leukaemia | C 2 | MK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | Practice of medicine |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| HOMU G-Path M. 8.34 | KS | KH | | Describe the laboratory diagnosis of Acute lymphoblastic Leukaemia | C 2 | MK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | Practice of medicine |
| HOMU G-Path M. 8.35 | KS | K | Haemorrhagic disorders | State the aetiology of bleeding disorders | C 1 | MK | Lecture | Viva SAQ MCQ | Viva SAQ MCQ | |
| HOMU G-Path M. 8.36 | KS | K | | Define Haemophilia A | C 1 | MK | Lecture | Viva MCQ | Viva MCQ | |
| HOMU G-Path M. 8.37 | KS | K | | Describe the laboratory features of Haemophilia A | C 1 | MK | Lecture | Viva MCQ | SAQ. Viva . MCQ | Practice of medicine |
| HOMU G-Path M. 8.38 | KS | K | | Define the terms “Thrombocytopenia”, “Thrombocytosis” | C 1 | MK | Lecture | Viva MCQ | Viva . MCQ | |
| HOMU G-Path M. 8.39 | KS | K | | State the causes of Thrombocytopenia | C 1 | MK | Lecture | Viva SAQ MCQ | SAQ. Viva . MCQ | |
| HOMU G-Path M. 8.40 | KS | KH | Plasma cell myeloma | Define multiple myeloma. | C 2 | DK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|---------------------|--|------------------|----------|---------|----------------|-----------------|----------------------|
| | | | | | | | | F | S | |
| HOMU G-Path M. 8.41 | KS | KH | Plasma cell myeloma | Describe the laboratory diagnosis of Multiple myeloma | C 2 | DK | Lecture | Viva voce, MCQ | SAQ. Viva . MCQ | Practice of medicine |
| HOMU G-Path M. 8.42 | KS | K | Hodgkin's lymphoma | Discuss features of Hodgkin's lymphoma | C1 | DK | Lecture | Viva SAQ MCQ | SAQ. Viva . MCQ | Practice of medicine |
| HOMU G-Path M. 8.43 | KS | K | | Explain the appearance of Reed Sternberg cell in tissues | C 1 | DK | Lecture | Viva SAQ MCQ | SAQ. Viva . MCQ | |
| HOMU G-Path M. 8.44 | KS | K | | Discuss features of Non Hodgkin's lymphoma | C 1 | NK | Lecture | Viva SAQ MCQ | NA | Practice of medicine |
| HOMU G-Path M. 8.45 | KS | K | Splenomegaly | State the causes of Splenomegaly | C1 | DK | Lecture | Viva SAQ MCQ | Viva SAQ MCQ | |

5.9. Diseases of the Respiratory System

| I. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|-------------------|----------------------|--------|------------------------|---|------------------|----------|---------|---------------------------|---------------------------|----------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 9.1 | KS | K | Pulmonary Tuberculosis | Describe the three components of Primary complex or Ghon complex | C 1 | MK | Lecture | Viva LAQ SAQ MCQ | LAQ SAQ Viva MCQ | Practice of medicine |
| HOMUG-Path M. 9.2 | KS | K | | Describe the fate of primary tuberculosis | C1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ Viva MCQ | |
| HOMUG-Path M. 9.3 | KS | K | | Describe the morphology of Secondary pulmonary tuberculosis | C1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ Viva MCQ | |
| HOMUG-Path M. 9.4 | KS | K | | Enumerate the differences between Primary tuberculosis and Secondary tuberculosis | C1 | MK | Lecture | Viva SAQ MCQ | LAQ Viva SAQ MCQ | |
| HOMUG-Path M. 9.5 | KS | K | | Describe the fate of secondary pulmonary tuberculosis | C1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ Viva MCQ | |
| HOMUG-Path M. 9.6 | KS | K | | Discuss the diagnosis of pulmonary tuberculosis | C1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ Viva MCQ | Practice of medicine |
| HOMUG-Path M. 9.7 | KS | K | Pneumonia | Define the term "Pneumonia" | C1 | MK | Lecture | Viva MCQ | Viva MCQ | |

| I. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|---------------------------|--|------------------|----------|---------|---------------------------|---------------------------|----------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 9.8 | KS | K | | State the Anatomic classification of Pneumonia | C1 | MK | Lecture | Viva SAQ MCQ | SAQ Viva MCQ | Practice of medicine |
| HOMUG-Path M. 9.9 | KS | K | | State the Aetiologic classification of Pneumonia | C1 | MK | Lecture | Viva SAQ MCQ | SAQ Viva MCQ | Practice of medicine |
| HOMUG-Path M. 9.11 | KS | KH | | Discuss the morphologic features of lobar Pneumonia | C 2 | MK | Lecture | Viva LAQ SAQ MCQ | LAQ SAQ Viva MCQ | |
| HOMUG-Path M. 9.12 | KS | K | | Discuss the morphologic features of bronchopneumonia | C1 | MK | Lecture | Viva SAQ MCQ | Viva SAQ MCQ | |
| HOMUG-Path M. 9.16 | KS | KH | | State the complications of Pneumonia | C2 | MK | Lecture | Viva voce, MCQ | SAQ Viva MCQ | Practice of medicine |
| HOMUG-Path M. 9.17 | KS | K | Lung abscess | Define the term “Lung abscess” | C1 | MK | Lecture | Viva MCQ | Viva MCQ | |
| HOMUG-Path M. 9.18 | KS | KH | | Describe aetiopathogenesis of lung abscess | C 2 | MK | Lecture | Viva SAQ MCQ | Viva MCQ | Practice of medicine |
| HOMUG-Path M. 9.19 | KS | KH | | Explain the morphology of lung abscess | C2 | DK | Lecture | Viva SAQ MCQ | Viva MCQ | |
| HOMUG-Path M. 9.20 | KS | K | Obstructive lung diseases | Classify chronic obstructive lung diseases | C1 | MK | Lecture | Viva SAQ MCQ | LAQ Viva SAQ MCQ | |

| I. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|---------------------|--|------------------|----------|---------|------------------|------------------|----------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 9.21 | KS | K | Chronic bronchitis. | Define the term “Chronic Bronchitis” | C1 | MK | Lecture | Viva MCQ | SAQ Viva MCQ | |
| HOMUG-Path M. 9.22 | KS | KH | | Describe the etio-pathogenesis of chronic bronchitis | C2 | MK | Lecture | Viva LAQ SAQ MCQ | LAQ SAQ Viva MCQ | Practice of medicine |
| HOMUG-Path M. 9.23 | KS | KH | | Describe the morphologic features of chronic bronchitis. | C 2 | DK | Lecture | Viva SAQ MCQ | LAQ SAQ Viva MCQ | Practice of medicine |
| HOMUG-Path M. 9.24 | KS | K | Emphysema | Define the term “Emphysema” | C1 | MK | Lecture | Viva MCQ | SAQ Viva MCQ | |
| HOMUG-Path M. 9.25 | KS | K | | Classify Emphysema | C1 | MK | Lecture | Viva voce, MCQ | LAQ Viva SAQ MCQ | |
| HOMUG-Path M. 9.26 | KS | KH | | Explain the aetio-pathogenesis of Emphysema | C2 | MK | Lecture | Viva SAQ MCQ | LAQ Viva SAQ MCQ | Practice of medicine |
| HOMUG-Path M. 9.27 | KS | K | Emphysema | Describe the morphologic features of emphysema. | C1 | DK | Lecture | Viva SAQ MCQ | LAQ Viva SAQ MCQ | Practice of medicine |
| HOMUG-Path M. 9.28 | KS | K | Bronchial Asthma | Define the term “Bronchial Asthma” | C1 | MK | Lecture | Viva MCQ | SAQ Viva MCQ | |

| I. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|-------------------------------|---|------------------|----------|---------|--------------------|---------------------------|----------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 9.29 | KS | K | | Classify Bronchial Asthma | C1 | MK | Lecture | Viva SAQ MCQ | LAQ Viva SAQ MCQ | |
| HOMUG-Path M. 9.30 | KS | K | | Enumerate the differences between Extrinsic Asthma and Intrinsic Asthma | C1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ Viva MCQ | Practice of medicine |
| HOMUG-Path M. 9.31 | KS | KH | | Describe the morphologic features of Bronchial asthma | C 2 | MK | Lecture | Viva SAQ MCQ | LAQ Viva SAQ MCQ | |
| HOMUG-Path M. 9.32 | KS | K | Bronchiectasis | Define the term “Bronchiectasis” | C1 | MK | Lecture | Viva voce, MCQ | SAQ Viva MCQ | |
| HOMUG-Path M. 9.33 | KS | KH | | Describe the aetiopathogenesis of bronchiectasis | C 2 | MK | Lecture | Viva voce, MCQ | SAQ Viva MCQ | Practice of medicine |
| HOMUG-Path M. 9.34 | KS | K | | Describe the morphology of bronchiectasis | C1 | MK | Lecture | Viva voce, MCQ | SAQ Viva MCQ | |
| HOMUG-Path M. 9.35 | KS | K | Pneumoconiosis | Define the term “Pneumoconioses” | C1 | DK | Lecture | Viva MCQ | SAQ Viva MCQ | |
| HOMUG-Path M. 9.36 | KS | K | | Classify Pneumoconiosis | C1 | DK | Lecture | Viva SAQ MCQ | SAQ Viva MCQ | |
| HOMUG-Path M. 9.37 | KS | KH | coal worker’s pneumoconiosis. | Describe the etio-pathogenesis of coal worker’s pneumoconiosis. | C2 | DK | Lecture | Viva SAQ MCQ | SAQ Viva MCQ | Practice of medicine |

| I. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| HOMUG-Path M. 9.38 | KS | K | Lung cancer | Describe the morphologic features of coal worker's pneumoconiosis. | C1 | DK | Lecture | Viva SAQ MCQ | SAQ Viva MCQ | |
| HOMUG-Path M. 9.39 | KS | K | | Describe the aetiology of Lung cancer | C1 | DK | Lecture | Viva SAQ MCQ | SAQ Viva MCQ | Practice of medicine |
| HOMUG-Path M. 9.40 | KS | K | | Describe the morphology of lung cancer | C1 | DK | Lecture | Viva SAQ MCQ | SAQ Viva MCQ | |
| HOMUG-Path M. 9.41 | KS | K | | Explain the spread of lung cancer | C1 | DK | Lecture | Viva SAQ MCQ | SAQ Viva MCQ | |
| HOMUG-Path M. 9.42 | KS | KH | | Describe the clinical features of lung cancer | C 2 | NK | Lecture | Viva SAQ MCQ | NA | Practice of medicine, Surgery |

5.10. Diseases of the oral cavity and salivary glands and gastrointestinal tract-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|------------------|--|------------------|----------|---------|--------------------|----------------|-------------------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 10.1 | KS | K | Oral leukoplakia | Definition of "Stomatitis", "Glossitis" | C 1 | MK | Lecture | Viva MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 10.2 | KS | K | | Define the term "Oral leucoplakia" | C 1 | MK | Lecture | Viva MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 10.3 | KS | K | | Describe the aetiology of Oral Leukoplakia | C 1 | DK | Lecture | Viva SAQ MCQ | SAQ, MCQ, Viva | Practice of medicine, Surgery |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|-----------------------|---|------------------|----------|---------|--------------------|----------------------------------|-------------------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 10.4 | KS | K | | Describe the morphologic features of oral leukoplakia | C 1 | NK | Lecture | Viva SAQ MCQ | SAQ, MCQ, Viva | Practice of medicine, Surgery |
| HOMUG-Path M. 10.5 | KS | K | Diseases of GI system | Define reflux oesophagitis. | C1 | MK | Lecture | Viva voce, MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 10.6 | KS | KH | Reflux esophagitis | Describe the aetiopathogenesis of Reflux esophagitis | C 2 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva voce | |
| HOMUG-Path M. 10.7 | KS | KH | | Describe the morphology of Reflux Oesophagitis | C 2 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ MCQ Viva | |
| HOMUG-Path M. 10.8 | KS | KH | Barrett's oesophagus | Describe the aetiopathogenesis, of Barrett oesophagus | C 2 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva voce | Practice of medicine, Surgery |
| HOMUG-Path M. 10.9 | KS | K | | Describe the morphology of Barret oesophagus | C 1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | |
| HOMUG-Path M. 10.10 | KS | K | Carcinoma oesophagus | Describe the aetiology of carcinoma oesophagus | C 1 | NK | Lecture | NA | NA | Practice of medicine, Surgery |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|--------------|--|------------------|----------|---------|--------------------|---------------------------|-------------------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 10.11 | KS | K | | Describe the morphology of Carcinoma of oesophagus | C 1 | NK | Lecture | Viva SAQ MCQ | NA | |
| HOMUG-Path M. 10.12 | KS | KH | | Describe the spread of Carcinoma oesophagus. | C2 | NK | Lecture | Viva SAQ MCQ | NA | Practice of medicine, Surgery |
| HOMUG-Path M. 10.13 | KS | K | Gastritis | Classify Gastritis | C 1 | MK | Lecture | Viva SAQ MCQ | Viva SAQ MCQ | |
| HOMUG-Path M. 10.14 | KS | K | Gastritis | Describe the aetiopathogenesis of Acute gastritis | C 1 | MK | Lecture | Viva SAQ MCQ | Viva MCQ | Practice of medicine, Surgery |
| HOMUG-Path M. 10.15 | KS | K | | Describe the aetiopathogenesis of Chronic gastritis | C 1 | MK | Lecture | Viva SAQ MCQ | Viva MCQ | |
| HOMUG-Path M. 10.16 | KS | K | Peptic ulcer | Define the term "Peptic ulcer" | C 1 | MK | Lecture | Viva voce, MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 10.17 | KS | KH | | Describe the aetiopathogenesis of chronic peptic ulcer | C 2 | MK | Lecture | Viva SAQ MCQ | SAQ MCQ Viva LAQ | Practice of medicine, Surgery |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|--------------------|--|------------------|----------|---------|--------------------|-----------------------------|-------------------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 10.18 | KS | KH | | Describe the morphology of chronic peptic ulcer | C 2 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | Practice of medicine, Surgery |
| HOMUG-Path M. 10.19 | KS | KH | | Describe the complications of Peptic ulcer | C2 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | Practice of medicine, Surgery |
| HOMUG-Path M. 10.20 | KS | KH | | Discuss differences between gastric ulcer and duodenal ulcers. | C2 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | |
| HOMUG-Path M. 10.21 | KS | K | gastric carcinoma, | Describe the aetiology of Gastric carcinoma | C 1 | DK | Lecture | Viva SAQ MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 10.22 | KS | K | gastric carcinoma, | Describe morphology of gastric carcinoma | C 1 | DK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | Practice of medicine, Surgery |
| HOMUG-Path M. 10.23 | KS | K | | Describe the spread of gastric carcinoma. | C 1 | DK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | |
| HOMUG-Path M. 10.24 | KS | K | Acute appendicitis | Define the term “Acute appendicitis” | C 1 | MK | Lecture | Viva MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 10.25 | KS | KH | | Describe the etio-pathogenesis of acute appendicitis | C 2 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ MCQ Viva | Practice of medicine, Surgery |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|----------------------------|---|------------------|----------|---------|--------------------|----------------------------|-------------------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 10.26 | KS | KH | | Describe the morphology of Acute appendicitis | C2 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ MCQ Viva | |
| HOMUG-Path M. 10.27 | KS | KH | Inflammatory bowel disease | Describe the aetio-pathogenesis of Inflammatory bowel disease | C 2 | MK | Lecture | Viva SAQ MCQ | SAQ, MCQ, Viva | Practice of medicine, Surgery |
| HOMUG-Path M. 10.28 | KS | K | | Describe the morphologic features of Crohn's disease | C 1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva voce | |
| HOMUG-Path M. 10.29 | KS | K | | Describe the morphologic features of Ulcerative colitis | C 1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | |
| HOMUG-Path M. 10.30 | KS | K | Inflammatory bowel disease | Enumerate the differences between Crohn's disease and Ulcerative Colitis. | C 1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | |
| HOMUG-Path M. 10.31 | KS | K | | Discuss the complications of Inflammatory bowel disease | C 1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | |
| HOMUG-Path M. 10.32 | KS | K | Carcinoma Colon | Describe the aetiology of Colorectal cancer | C 1 | DK | Lecture | Viva MCQ | LAQ SAQ, MCQ, Viva | Practice of medicine, Surgery |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|-------------------------|---|------------------|----------|---------|--------------------|-----------------------------|-------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 10.33 | KS | K | | Describe the morphology of Colorectal cancer | C 1 | DK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | |
| HOMUG-Path M. 10.34 | KS | K | | Describe the spread of Colorectal cancer | C 1 | DK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | |
| HOMUG-Path M. 10.35 | KS | K | Intestinal tuberculosis | Describe the pathology of Intestinal tuberculosis | C 1 | DK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | |

5.11. Diseases of liver, gall bladder and biliary ducts-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|----------------------|--|------------------|----------|---------|---------------------|-----------------------------------|-------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 11.1 | KS | K | Liver Function Tests | Discuss the liver function tests alongwith clinical significance of each | C 1 | MK | Lecture | OSPE Viva MCQ | OSPEL AQ SAQ MCQ Viva | |
| HOMUG-Path M. 11.2 | KS | K | Jaundice | Define the term “Jaundice” | C 1 | MK | Lecture | Viva MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 11.3 | KS | K | | State the pathophysiologic classification of jaundice. | C 1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|-------------------------|--|------------------|----------|---------|----------------|--------------------|----------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 11.4 | KS | K | Cholestasis | Define Cholestasis | C 1 | MK | Lecture | Viva voce, MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 11.5 | KS | K | Alcoholic Liver Disease | Define the term “Alcoholic liver disease” | C 1 | MK | Lecture | Viva voce, MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 11.6 | KS | K | | Explain the pathogenesis of alcoholic liver disease | C 1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | |
| HOMUG-Path M. 11.7 | KS | K | | Describe the morphologic spectrum of alcoholic liver disease | C 1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | Practice of medicine |
| HOMUG-Path M. 11.8 | KS | K | Liver Cirrhosis | Define the term “Liver cirrhosis” | C 1 | MK | Lecture | Viva voce, MCQ | LAQ SAQ, MCQViva | |
| HOMUG-Path M. 11.9 | KS | K | Liver Cirrhosis | Classify Cirrhosis based on morphology and aetiology | C 1 | DK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQViva | Practice of medicine |
| HOMUG-Path M. 11.10 | KS | KH | | Describe the morphology of Alcoholic cirrhosis | C 2 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQViva | |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|---------------------------|--|------------------|----------|---------|--------------------|-----------------------|-------------------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 11.11 | KS | K | Hepatocellular Carcinomas | State the aetiology of Hepatocellular Carcinomas | C 1 | DK | Lecture | Viva SAQ MCQ | Viva SAQ MCQ | |
| HOMUG-Path M. 11.12 | KS | K | | Describe the morphology of hepatocellular carcinoma. | C 1 | DK | Lecture | Viva SAQ MCQ | Viva SAQ MCQ | Practice of medicine, Surgery |
| HOMUG-Path M. 11.13 | KS | K | Cholelithiasis. | State the risk factors of cholelithiasis. | C 1 | MK | Lecture | Viva SAQ MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 11.14 | KS | KH | | Describe the pathogenesis of cholelithiasis/ gall stones | C 2 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | Practice of medicine, Surgery |
| HOMUG-Path M. 11.15 | KS | K | | Describe the various types of gall stones | C 1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | |

5.12. Diseases of the pancreas-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|--------------------|---|------------------|----------|---------|-------------|-----------|-------------------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 12.1 | KS | K | Acute Pancreatitis | Define the term “Acute pancreatitis” | C 1 | MK | Lecture | Viva MCQ | MCQ, Viva | |
| HOMUG-Path M. 12.2 | KS | KH | | Describe the aetio-pathogenesis of acute pancreatitis | C 2 | MK | Lecture | Viva MCQ | MCQ, Viva | Practice of medicine, Surgery |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|----------------------|--|------------------|----------|---------|--------------------|----------------|-------------------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 12.3 | KS | K | | State the morphologic features of acute pancreatitis. | C 1 | MK | Lecture | Viva voce, SAQ MCQ | MCQ, Viva voce | |
| HOMUG-Path M. 12.4 | KS | K | Chronic Pancreatitis | Define the term “Chronic pancreatitis” | C 1 | DK | Lecture | Viva voce, MCQ | MCQ, Viva | |
| HOMUG-Path M. 12.5 | KS | KH | | Describe the aetio-pathogenesis of chronic Pancreatitis | C 2 | DK | Lecture | Viva voce, SAQ MCQ | MCQ, Viva voce | Practice of medicine, Surgery |
| HOMUG-Path M. 12.6 | KS | K | | State the morphologic features of Chronic Pancreatitis. | C 1 | DK | Lecture | Viva voce, SAQ MCQ | MCQ, Viva | |
| HOMUG-Path M. 12.7 | KS | K | Diabetes mellitus | Define the term “Diabetes mellitus” | C 1 | MK | Lecture | Viva MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 12.8 | KS | K | | Enumerate the aetiologic classification of diabetes mellitus | C 1 | DK | Lecture | Viva SAQ MCQ | MCQ Viva SAQ | |
| HOMUG-Path M. 12.9 | KS | K | | Describe the pathogenesis of Type1 diabetes mellitus | C 1 | DK | Lecture | Viva MCQ SAQ | MCQ Viva SAQ | Practice of medicine |
| HOMUG-Path M. 12.10 | KS | K | | Describe the pathogenesis of Type 2 diabetes mellitus | C 1 | DK | Lecture | Viva MCQ SAQ | MCQ Viva SAQ | Practice of medicine |
| HOMUG-Path M. 12.11 | KS | K | | Discuss the laboratory diagnosis of Diabetes Mellitus | C 1 | MK | Lecture | Viva MCQ SAQ | LAQ MCQ Viva | Practice of medicine |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|---------|---|------------------|----------|---------|--------------------|---------------------------|----------------------|
| | | | | | | | | F | S | |
| | | | | | | | | | SAQ | |
| HOMUG-Path M. 12.12 | KS | K | | Describe the Acute metabolic complications of diabetes mellitus | C 1 | MK | Lecture | Viva MCQ SAQ | LAQ MCQ Viva SAQ | Practice of medicine |
| HOMUG-Path M. 12.13 | KS | K | | Describe the Late systemic complications of diabetes mellitus | C 1 | MK | Lecture | Viva MCQ SAQ | LAQ MCQ Viva SAQ | |

5.13. Diseases of blood vessels and lymphatics-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|------------------|---|------------------|----------|---------|-----------------|---------------------------|----------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 13.1 | KS | K | Arteriosclerosis | Define Arteriosclerosis | C 1 | MK | Lecture | Viva voce, MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 13.2 | KS | K | | State the types of Arteriosclerosis | C 1 | MK | Lecture | Viva MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 13.3 | KS | K | Atherosclerosis | Define the term "Atherosclerosis" | C 1 | MK | Lecture | Viva MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 13.4 | KS | KH | | Describe the aetiology of Atherosclerosis | C 2 | MK | Lecture | Viva MCQ SAQ | LAQ SAQ MCQ Viva | Practice of medicine |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| HOMUG-Path M. 13.5 | KS | KH | Atherosclerosis | Describe the pathogenesis of Atherosclerosis | C 2 | MK | Lecture | Viva MCQ SAQ | LAQ SAQ MCQ Viva | |
| HOMUG-Path M.13.6 | KS | K | | Describe the morphologic features of Atherosclerosis | C 1 | MK | Lecture | Viva MCQ SAQ LAQ | LAQ SAQ, MCQ, Viva | |
| HOMUG-PathM.13.7 | KS | K | Hypertension. | Define the term “Hypertension” | C 1 | MK | Lecture | Viva MCQ | SAQ, MCQ, Viva | Practice of medicine |
| HOMUG-Path M. 13.8 | KS | K | | Enumerate the aetiologic classification of Hypertension | C 1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | Practice of medicine |
| HOMUG-Path M. 13.9 | KS | KH | | Describe the aetio-pathogenesis of Primary/essential Hypertension | C 2 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva | Practice of medicine |
| HOMUG-Path M. 13.10 | KS | KH | | Describe the aetio-pathogenesis of Secondary Hypertension | C 2 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ, MCQ, Viva voce | |
| HOMUG-Path M. 13.11 | KS | KH | | State the major effects of systemic hypertension on the organs | C 2 | MK | Lecture | Viva voce, SAQ MCQ | LAQ SAQ, MCQ, Viva voce | |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| HOMUG-Path M. 13.12 | KS | K | Aneurysm | Define the term “Aneurysm” | C 1 | DK | Lecture | Viva voce, MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 13.13 | KS | K | | Classify Aneurysm | C 1 | DK | Lecture | Viva voce, MCQ, SAQ | LAQ, SAQ, MCQ, Viva voce | |
| HOMUG-Path M. 13.14 | KS | KH | Aneurysm | Describe the clinical effects of aneurysms | C 2 | DK | Lecture | Viva voce, MCQ, SAQ | LAQ, SAQ, MCQ, Viva voce | |
| HOMUG-Path M. 13.15 | KS | K | Tumors of blood vessels | State the benign tumours of blood vessels | C 1 | NK | Lecture | Viva voce, MCQ | NA | |
| HOMUG-Path M. 13.16 | KS | K | | State the malignant tumours of blood vessels | C 1 | NK | Lecture | Viva voce, MCQ | NA | |
| HOMUG-Path M. 13.17 | KS | K | | Define the term “Lymphangitis” | C 1 | NK | Lecture | Viva voce, MCQ | Viva MCQ | |

5.14. Diseases of cardiovascular system-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|-------------------------|---|------------------|----------|---------|--------------------|---------------------|----------------------|
| | | | | | | | | F | S | |
| HomUG-Path M. 14.1 | KS | K | Ischaemic Heart Disease | Define the term “Ischaemic Heart Disease” | C 1 | MK | Lecture | Viva voce, MCQ | SAQ, MCQ, Viva | |
| HomUG-Path M. 14.2 | KS | KH | | Describe the etio-pathogenesis of Ischaemic Heart Disease | C 2 | MK | Lecture | Viva MCQ SAQ | LAQ SAQ, MCQ, Viva | Practice of medicine |
| HomUG-Path M. 14.3 | KS | K | | State the effects of Myocardial ischaemia | C 1 | MK | Lecture | Viva MCQ SAQ | LAQ SAQ, MCQ, Viva | Practice of medicine |
| HomUG-Path M. 14.4 | KS | K | Angina Pectoris | Define the term “Angina Pectoris” | C 1 | MK | Lecture | Viva voce, MCQ | SAQ, MCQ, Viva | |
| HomUG-Path M. 14.5 | KS | K | | Describe Stable or Typical angina | C 1 | MK | Lecture | Viva voce, MCQ SAQ | SAQ, MCQ, Viva voce | |
| HomUG-Path M. 14.6 | KS | K | | Explain Prinzmetal’s variant Angina | C 1 | MK | Lecture | Viva voce, MCQ SAQ | SAQ, MCQ, Viva voce | |
| HomUG-Path M. 14.7 | KS | K | | Describe Unstable or Crescendo angina. | C 1 | MK | Lecture | Viva voce, MCQ SAQ | SAQ, MCQ, Viva voce | |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| HomUG-Path M. 14.8 | KS | KH | Myocardial Infarction. | Describe the aetio-pathogenesis of Myocardial Infarction. | C 2 | MK | Lecture | Viva voce, MCQ, SAQ | LAQ, SAQ, MCQ, Viva voce | Practice of medicine |
| HomUG-Path M. 14.9 | KS | KH | | Describe the gross changes in Myocardial infarction | C 2 | DK | Lecture | Viva SAQ, MCQ | LAQ, SAQ, MCQ, Viva | |
| HomUG-Path M. 14.10 | KS | KH | | Describe the microscopic changes in Myocardial infarction | C 2 | DK | Lecture | Viva SAQ, MCQ | LAQ, SAQ, MCQ, Viva | |
| HomUG-Path M. 14.11 | KS | KH | | Describe the diagnosis of Myocardial Infarction. | C 2 | MK | Lecture | Viva voce, MCQ, SAQ | LAQ, SAQ, MCQ, Viva voce | Practice of medicine |
| HomUG-Path M. 14.12 | KS | K | Rheumatic heartdisease. | Define the terms “Rheumatic fever”, “Rheumatic heart disease” | C 1 | MK | Lecture | Viva voce, MCQ | MCQ, Viva voce | |
| HomUG-Path M. 14.13 | KS | KH | | Describe etio-pathogenesis of Rheumatic heart disease. | C 2 | MK | Lecture | Viva voce, MCQ, SAQ | LAQ, SAQ, MCQ, Viva voce | Practice of medicine |
| HomUG-Path M. 14.14 | KS | K | | Describe the Cardiac lesions of Rheumatic heart disease | C 1 | MK | Lecture | Viva voce, MCQ, SAQ | LAQ, SAQ, MCQ, Viva voce | |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| HomUG-Path M. 14.15 | KS | K | Rheumatic heart disease. | Describe the extra-cardiac lesions in Rheumatic heart disease. | C 1 | MK | Lecture | Viva voce, MCQ SAQ | SAQ, MCQ, Viva voce | |
| HomUG-Path M. 14.16 | KS | K | | Enumerate the diagnostic criterion of Rheumatic heartdisease. | C 1 | MK | Lecture | Viva voce, MCQ SAQ | LAQS AQ, MCQ, Viva voce | |
| HomUG-Path M. 14.17 | KS | K | Infective Endocarditis | Define the term “Infective endocarditis” | C 1 | DK | Lecture | Viva MCQ | SAQ, MCQ, Viva | |
| HomUG-Path M. 14.18 | KS | KH | Infective Endocarditis | Describe the aetio-pathogenesis of Infective Endocarditis | C 2 | DK | Lecture | Viva MCQ SAQ | SAQ, MCQ, Viva | Practice of medicine |
| HomUG-Path M. 14.19 | KS | K | | Describe the morphologic changes of Infective Endocarditis | C 1 | NK | Lecture | Viva MCQ SAQ | NA | |
| HomUG-Path M. 14.20 | KS | K | | Enumerate the Duke criteria for diagnosis of Infective endocarditis | C 1 | NK | Lecture | Viva MCQ SAQ | NA | |
| HomUG-Path M. 14.21 | KS | KH | | Define the term “Pericardial effusion” | C 2 | MK | Lecture | Viva MCQ | MCQ, Viva | |
| HomUG-Path . 14.22 | KS | KH | | Define the term “Pericarditis” | C 2 | MK | Lecture | Viva MCQ | MCQ, Viva | Practice of medicine |

5.15. Diseases of kidney and lower urinary tract-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|---------------------------|--|------------------|----------|---------|--------------------|----------------------------|----------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 15.1 | KS | K | Renal function tests | Discuss renal function tests in detail | C 1 | MK | Lecture | Viva MCQ | OSPE LAQ SAQ MCQ Viva voce | Practice of medicine |
| HOMUG-Path M. 15.2 | KS | K | Glomerular disease | Define the term “Glomerulonephritis” “Nephrotic syndrome” “Acute nephritic syndrome” | C 1 | MK | Lecture | Viva MCQ SAQ | MCQ Viva SAQ | |
| HOMUG-Path M. 15.3 | KS | K | Acute nephritic syndrome. | Enumerate the aetiology of Acute nephritic syndrome | C 1 | DK | Lecture | Viva voce, MCQ SAQ | LAQ SAQ, MCQ, Viva voce | |
| HOMUG-Path M. 15.4 | KS | KH | Acute nephritic syndrome. | Describe the clinical features of Acute nephritic syndrome. | C 2 | DK | Lecture | Viva voce, MCQ SAQ | LAQ SAQ, MCQ, Viva voce | Practice of medicine |
| HOMUG-Path M. 15.5 | KS | K | Nephrotic syndrome | Enumerate the causes of Nephrotic syndrome | C 1 | DK | Lecture | Viva MCQ SAQ | LAQ SAQ, MCQ, Viva | Practice of medicine |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| HOMUG-Path M. 15.6 | KS | K | | Describe the characteristic features of Nephrotic syndrome | C 1 | DK | Lecture | Viva MCQ SAQ | LAQ SAQ, MCQ, Viva | Practice of medicine |
| HOMUG-Path M. 15.7 | KS | KH | | Enumerate the differences between Nephrotic syndrome and Acute Nephritic syndrome | C 2 | MK | Lecture | Viva voce, MCQ SAQ | LAQ SAQ, MCQ, Viva voce | |
| HOMUG-Path M. 15.8 | KS | K | Glomerulonephritis | Define Glomerulonephritis | C 1 | DK | Lecture | Viva MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 15.9 | KS | KH | Acute Post-Streptococcal Glomerulonephritis | Describe the aetio-pathogenesis of Acute post-streptococcal glomerulonephritis. | C 2 | MK | Lecture | Viva MCQ SAQ | LAQ SAQ, MCQ, Viva | Practice of medicine |
| HOMUG-Path M. 15.10 | KS | K | Nephrolithiasis | State the types of Renal calculi | C 1 | MK | Lecture | Viva voce, MCQ SAQ | LAQ SAQ, MCQ, Viva voce | |
| HOMUG-Path M.15.11 | KS | K | Nephrolithiasis | Describe the etio-pathogenesis of each type of renal stones | C 1 | MK | Lecture | Viva MCQ SAQ | LAQ SAQ, MCQ, Viva | |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| HOMUG-Path M.15.12 | KS | K | | Describe the morphology of each type of renal stones | C 1 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ MCQ Viva | |
| HOMUG-Path M.15.13 | KS | K | Urinary tract infections | Define the term “Acute pyelonephritis” “ureteritis”, “Cystitis”, “Urethritis” | C 1 | MK | Lecture | Viva MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M.15.14 | KS | K | Renal Cell Carcinoma | Discuss the etiology of Renal Cell Carcinoma | C 1 | DK | Lecture | Viva voce , MCQ SAQ | SAQ, MCQ, Viva voce | Practice of medicine, Surgery |
| HOMUG-Path M.15.15 | KS | K | | Describe the morphology of Renal Cell Carcinoma | C 1 | DK | Lecture | Viva voce , MCQ SAQ | SAQ, MCQ, Viva voce | |
| HOMUG-Path M.15.16 | KS | K | Wilm’s tumour | Describe the morphology of Wilm’s tumour | C 1 | NK | Lecture | Viva voce , MCQ SAQ | NA | Practice of medicine, Surgery |

5.16. Diseases of male reproductive system-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|--|--|------------------|----------|---------|-----------------------|----------------------------|-------------------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 16.1 | KS | K | Inflammatory diseases | Define the terms “Orchitis”, “Epididymitis” | C 1 | MK | Lecture | Viva MCQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 16.2 | KS | K | Testicular Tumors | Classify testicular tumors | C 1 | DK | Lecture | Viva MCQ SAQ | SAQ, MCQ Viva | Practice of medicine, Surgery |
| HOMUG-Path M. 16.3 | KS | K | | Discuss the morphology of Germ cell tumors | C 1 | DK | Lecture | Viva MCQ SAQ | SAQ, MCQ Viva | |
| HOMUG-Path M. 16.4 | KS | K | Inflammatory diseases | Define the term “Prostatitis” | C 1 | NK | Lecture | Viva MCQ | NA | |
| HOMUG-Path M. 16.5 | KS | K | | State the types of Prostatitis | C 1 | NK | Lecture | Viva MCQ | NA | Practice of medicine, Surgery |
| HOMUG-Path M. 16.6 | KS | KH | Benign Nodular Hyperplasia Of Prostate | Describe the etio-pathogenesis of Benign nodular hyperplasia of prostate | C 2 | MK | Lecture | Viva MCQ SAQ | LAQ SAQ MCQ, Viva | Practice of medicine, Surgery |
| HOMUG-Path M. 16.7 | KS | KH | | Describe the pathology of Benign nodular hyperplasia of prostate | C 2 | MK | Lecture | Viva voce, MCQ SAQ | LAQ SAQ, MCQ, Viva voce | Practice of medicine, Surgery |
| HOMUG-Path M. 16.8 | KS | K | Ca Prostate | Describe the aetiology of Carcinoma of Prostate | C 1 | NK | Lecture | Viva voce, MCQ SAQ | NA | |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| HOMUG-Path M. 16.9 | KS | KH | | Describe the morphology of Carcinoma of Prostate | C 2 | NK | Lecture | Viva voce, MCQ SAQ | NA | Practice of medicine, Surgery |
| HOMUG-Path M. 16.10 | KS | KH | Ca Prostate | Explain the spread of Carcinoma of Prostate | C2 | NK | Lecture | Viva MCQ SAQ | NA | |

5.17. Diseases of the female genitalia and breast-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|------------|-------------------------------|------------------|----------|---------|--------------|-----------|-------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 17.1 | KS | K | Cervicitis | Define the term “Cervicitis” | C 1 | DK | Lecture | Viva MCQ | MCQ, Viva | OBG |
| HOMUG-Path M. 17.2 | KS | K | | State the types of Cervicitis | C 1 | DK | Lecture | Viva MCQ | MCQ, Viva | |
| HOMUG-Path M. 17.3 | KS | K | | Define the term Endometritis. | C 1 | DK | Lecture | Viva MCQ SAQ | MCQ Viva | |
| HOMUG-Path M. 17.4 | KS | K | | Define the term Endometriosis | C 1 | DK | Lecture | Viva MCQ | MCQ, Viva | OBG |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|-----------------|---|------------------|----------|---------|----------------------|-----------------------------|-------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 17.5 | KS | KH | | Define the term Leiomyomas | C 1 | DK | Lecture | Viva MCQ SAQ | MCQ Viva SAQ | OBG |
| HOMUG-Path M. 17.6 | KS | KH | | Discuss the morphology of Leiomyoma uterus | C 1 | DK | Lecture | Viva MCQ SAQ | MCQ Viva SAQ | OBG |
| HOMUG-Path M. 17.7 | KS | K | | Define the term ‘Adenomyosis’ | C 1 | DK | Lecture | Viva MCQ SAQ | MCQ Viva | OBG |
| HOMUG-Path M. 17.8 | KS | KH | Ovarian Tumors. | Classify ovarian tumours | C 1 | MK | Lecture | Viva MCQ SAQ | LAQ MCQ Viva SAQ | OBG |
| HOMUG-Path M. 17.9 | KS | K | | Discuss the morphology of germ cell tumors of ovary | C 2 | MK | Lecture | Viva MCQ SAQ | LAQ MCQ Viva SAQ | OBG |
| HOMUG-Path M. 17.10 | KS | K | | Discuss the morphology of serous tumors of ovary | C 2 | MK | Lecture | Viva SAQ MCQ | LAQ SAQ MCQ, Viva | OBG |
| HOMUG-Path M. 17.11 | KS | K | | Discuss the morphology of mucinous tumors of ovary | C 2 | MK | Lecture | Viva MCQ | LAQ SAQ, MCQ, Viva | OBG |
| HOMUG-Path M. 17.12 | KS | KH | | Describe the pathology of Fibroadenoma breast | C 2 | MK | Lecture | Viva voce, MCQ | SAQ, MCQ, | |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | F | S | |
| | | | | | | | | SAQ, | Viva voce | |
| HOMUG-Path M. 17.13 | KS | K | Tumors of breast | Classify breast tumors as per WHO | C 1 | MK | Lecture | Viva MCQ SAQ | LAQ MCQ Viva SAQ | Surgery |
| HOMUG-Path M. 17.14 | KS | K | | Describe the etiology of Carcinoma Breast | C 1 | MK | Lecture | Viva voce, MCQ SAQ | LAQ SAQ, MCQ, Viva voce | Surgery |
| HOMUG-Path M. 17.15 | KS | KH | | Describe the morphologic features of Carcinoma Breast | C 2 | MK | Lecture | Viva voce, MCQ SAQ | LAQ SAQ, MCQ, Viva voce | |

5.18. Diseases of the skin and soft tissue-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|--------------------|---|------------------|----------|---------|---------------------|---------------------|-------------------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 18.1 | KS | K | Tumors of skin | State the predisposing conditions of Squamous cell carcinoma | C 1 | DK | Lecture | Viva voce, MCQ, SAQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 18.2 | KS | KH | | Describe the pathology of squamous cell carcinoma of skin | C 2 | DK | Lecture | Viva voce, MCQ, SAQ | SAQ, MCQ, Viva voce | |
| HOMUG-Path M. 18.3 | KS | K | | State the pre-disposing factors for basal cell carcinoma (Rodent ulcer) | C 1 | NK | Lecture | Viva voce, MCQ, SAQ | SAQ, MCQ, Viva voce | |
| HOMUG-Path M. 18.4 | KS | KH | | Describe morphologic features of basal cell carcinoma of skin | C 2 | NK | Lecture | Viva voce, MCQ, SAQ | SAQ, MCQ, Viva voce | Practice of medicine, Surgery |
| HOMUG-Path M. 18.5 | KS | KH | Soft tissue tumors | Describe morphologic features of lipoma. | C 2 | MK | Lecture | Viva voce, MCQ | SAQ, MCQ, Viva voce | |

5.19. Diseases of the musculo-skeletal system-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|----------------------|------------------------------------|------------------|----------|---------|----------------|-------------------------|----------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 19.1 | KS | K | Bone tumors | Classify bone tumors | C 1 | DK | Lecture | Viva voce, MCQ | SAQ, MCQ, Viva voce | |
| HOMUG-Path M. 19.2 | KS | K | Bone tumors | Discuss morphology of osteosarcoma | C 1 | MK | Lecture | Viva voce, MCQ | LAQ SAQ, MCQ, Viva voce | Practice of medicine |
| HOMUG-Path M. 19.3 | KS | K | Osteo arthritis | Define Osteo Arthritis | C 1 | MK | Lecture | Viva voce, MCQ | MCQ, Viva voce | Practice of medicine |
| HOMUG-Path M. 19.4 | KS | K | Rheumatoid arthritis | Define rheumatoid arthritis | C 1 | MK | Lecture | Viva voce, MCQ | MCQ, Viva voce | Practice of medicine |
| HOMUG-Path M. 19.5 | KS | K | Gout | Define Gout | C 1 | MK | Lecture | Viva voce, MCQ | MCQ, Viva voce | |

5.20. Diseases of endocrine glands-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|------------------------|--|------------------|----------|---------|----------------------|-------------------------|----------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 20.1 | KS | KH | Thyroid function tests | Interpret the abnormalities in a panel containing thyroid function tests | C 2 | MK | Lecture | Viva MC Q | OSPE MCQ, Viva SAQ | |
| HOMUG-Path M. 20.2 | KS | K | Goitre | Define the term “Goitre” | C 1 | MK | Lecture | Viva MC Q | SAQ, MCQ, Viva | |
| HOMUG-Path M. 20.3 | KS | K | | Describe the etio-pathogenesis of Goitre | C 2 | MK | Lecture | Viva MC Q SAQ | LAQ SAQ, MCQ, Viva | Practice of medicine |
| HOMUG-Path M. 20.4 | KS | K | | Classify Goitre on the basis of morphology | C 1 | MK | Lecture | Viva voce , MC Q SAQ | LAQ SAQ, MCQ, Viva voce | Practice of medicine |
| HOMUG-Path M. 20.5 | KS | KH | Goitre | Describe the morphology of Colloid Goitre | C 2 | MK | Lecture | Viva voce , MC Q SAQ | LAQ SAQ, MCQ, Viva voce | |
| HOMUG-Path M. 20.6 | KS | K | | Describe the morphology of Multi-nodular Goitre | C 1 | MK | Lecture | Viva MC Q SAQ | LAQ SAQ, MCQ, Viva | Practice of medicine |

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|---------------------|----------------------|--------|--|--|------------------|----------|---------|---------------|----------------|----------------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 20.7 | KS | K | Cushing syndrome | State the aetiologic types of Cushing syndrome | C 1 | DK | Lecture | Viva MC Q | MCQ, Viva | Practice of medicine |
| HOMUG-Path M. 20.8 | KS | K | | Describe the clinical features of Cushing syndrome | C 1 | DK | Lecture | Viva MC Q SAQ | SAQ MCQ, Viva | |
| HOMUG-Path M. 20.9 | KS | K | Gigantism | Describe the features of Gigantism | C 1 | DK | Lecture | Viva MC Q SAQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 20.10 | KS | K | Acromegaly | Describe the features of Acromegaly | C 1 | DK | Lecture | Viva MC Q SAQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 20.11 | KS | K | Diabetes Insipidus | Describe the features of Diabetes Insipidus | C 1 | DK | Lecture | Viva MC Q SAQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 20.12 | KS | K | differences between Diabetes Mellitus and Diabetes Insipidus | Discuss differences between Diabetes Mellitus and Diabetes Insipidus | C 1 | DK | Lecture | Viva MC Q SAQ | SAQ, MCQ, Viva | |

5.21. Diseases of the nervous system-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom / Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|------------|---|------------------|----------|---------|--------------|----------------|-------------|
| | | | | | | | | F | S | |
| HOMUG-Path M. 21.1 | KS | K, | Meningitis | Define the term 'Meningitis' | C 1 | DK | Lecture | Viva MCQ | MCQ, Viva | |
| HOMUG-Path M. 21.2 | KS | KH | | Enumerate the CSF findings in Bacterial meningitis | C 1 | DK | Lecture | Viva MCQ SAQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 21.3 | KS | KH | | Enumerate the CSF findings in Tubercular meningitis | C 1 | DK | Lecture | Viva MCQ SAQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 21.4 | KS | KH | | Enumerate the CSF findings in Viral meningitis | C 1 | DK | Lecture | Viva MCQ SAQ | SAQ, MCQ, Viva | |
| HOMUG-Path M. 21.5 | KS | K | CNS tumors | Classify CNS tumours | C 1 | NK | Lecture | Viva MCQ | NA | |

5.22. Introduction to Microbiology-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|--------------------|----------------------|--------|---|--|--------------------|----------|----------|------------------|-------------------------|-------------|
| | | | | | | | | F | S | |
| HomUG-Path M. 22.1 | KS | K | Basic definitions | Define the terms “Microbiology”, “Medical Microbiology” “Clinical Microbiology”. | C1 | NK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 22.2 | KS | K | Contributions of important scientists to Microbiology | List the contribution of important scientists to Microbiology | C1 | NK | Lecture | Viva Voce | NA | |
| HomUG-Path M 22.3 | KS | K | Koch’s postulate | State the Koch’s postulate | C1 | MK | Lecture | Viva voce MCQ | SAQ Viva voce MCQ | |
| HomUG-Path M 22.4 | KS | K | Normal Human microbiota | List the anatomical location of normal bacterial flora in the human body | C1 | MK | Lecture | MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M. 22.5 | KS | KH | Role of normal human microbiota | Explain the role of human microbiota in health and disease. | C2 | MK | Lecture | MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 22.6 | KS | KH | Role of probiotics | Explain the role of probiotics. | C2 | MK | Lecture | MCQ Viva voce | MCQ Viva voce | |

5.23. Bacterial structure, growth and nutrition-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG -Path M 23.1 | KS | K | Morphology of bacteria | Explain the morphological characteristics of bacteria | C1 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG -Path M 23.2 | KS | K | Classificatio n of bacteria | Classify bacteria based on shape | C1 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG -Path M 23.3 | KS | KH | Bacterial Cell structure | Describe the detailed structure of the bacterial cell envelope | C1 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG -Path M. 23.4 | KS | K | Cell wall appendages | Define flagella | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG -Path M. 23.5 | KS | KH | | Describe the types of flagellar arrangement in a bacterial cell | C2 | MK | Lecture | SAQ MCQ Viva voce | MCQ Viva voce | |
| HomUG -Path M. 23.6 | KS | KH | Bacterial spore | Describe the structure of bacterial spore | C2 | DK | Lecture | Viva voce MCQ SAQ | Viva voce MCQ SAQ | |
| HomUG -Path M. 23.7 | KS | KH | | Describe the types of bacterial spores based on shape, position of spores | C2 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |

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| HomUG -Path M. 23.8 | KS | KH | Bacterial growth and nutrition | Describe bacterial growth curve | C2 | DK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG -Path M 23.9 | KS | KH | | Describe the classification of bacteria based on energy requirements | C2 | DK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG -Path M. 23.10 | KS | KH | | Describe the classification of bacteria based on oxygen requirements | C2 | DK | Lecture | Viva voce MCQ | SAQViva voce MCQ | |
| HomUG -Path M. 23.11 | KS | KH | | Describe the classification of bacteria based on temperature requirements | C2 | DK | Lecture | Viva voce MCQ | Viva voce MCQ | |

5.24. Sterilization and disinfection-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG- Path M 24.1 | KS | K | Definitions | Define ‘Sterilization’, ‘Disinfection’, ‘Asepsis’, ‘Decontamination’, ‘Bactericidal agents’, ‘Bacteriostatic agents’ | C1 | MK | Lecture | Viva voce MCQ | SAQ Viva voce MCQ | |
| HomUG- Path M 24.2 | KS | K | Methods of sterilization | Describe the various methods of sterilization | C1 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG- Path M 24.3 | KS | KH | Physical methods of sterilization | Describe the various physical methods of sterilization | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |

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| HomUG-Path M 24.4 | KS | KH | | Describe the procedure of sterilization using hot air oven | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 24.5 | KS | KH | | Describe the procedure of sterilization using Autoclave | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 24.6 | KS | KH | | Explain the uses of Pasteurization in the process of sterilization | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 24.7 | KS | KH | Chemical methods of sterilization | Discuss on various types of chemical agents of sterilization | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | Community medicine |
| HomUG-Path M 24.8 | KS | K | | State the characteristics of disinfectant | C1 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | Community medicine |

5.25. Staining, culture medias and methods-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-Path M 25.1 | KS | K | Staining methods | Discuss the various staining methods of bacteria | C1 | MK | Lecture | MCQ Viva voce | MCQ Viva Voce SAQ | |
| HomUG-Path M 25.2 | KS | KH | | Discuss the steps of gram staining | C2 | MK | Lecture | MCQ Viva voce | MCQ Viva Voce SAQ | |
| HomUG-Path M 25.3 | KS | KH | Classification of bacteria | Classify bacteria based on gram staining property | C1 | MK | Lecture | MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 25.4 | KS | K | Staining methods | Discuss differences between gram positive and gram negative bacteria | C1 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 25.5 | KS | K | Staining methods | Discuss the steps of Acid fast staining | C1 | MK | Lecture | SAQ MCQ Viva voce | MCQ Viva Voce SAQ | |
| HomUG-Path M 25.6 | KS | K | Culture media | Describe types of culture media based on consistency with examples | C1 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 25.7 | KS | K | | Describe culture media based on constituents with examples | C1 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 25.8 | KS | K | | Describe culture media based on functional requirement with examples | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |

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| | | | | | | | | Viva voce | Viva voce | |
| HomUG-Path M 25.9 | KS | K | Culture methods | Enumerate various methods used for culturing bacteria. | C1 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 25.10 | KS | K | | Describe various anaerobic culture methods | C2 | DK | Lecture | Not to be assessed | SAQ MCQ Viva voce | |

5.26. Infection and disease-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-Path M 26.1 | KS | K | Infection and Disease | Define the terms” infection” pathogen, pathogenesis, pathogenicity, Virulence”, infectious disease | C1 | MK | Lecture | Viva voce MCQ | SAQ Viva voce MCQ | |
| HomUG-Path M 26.2 | KS | KH | | Describe the various types of infections | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 26.3 | KS | KH | | Describe the sources of infection | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 26.4 | KS | KH | | Describe the methods of transmission of infection | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |

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| HomUG-Path M 26.5 | KS | K | Virulence of micro-organisms | State the factors influencing virulence of micro-organisms. | C1 | MK | Lecture | Viva voce MCQ | LAQ SAQ Viva voce MCQ | |
| HomUG-Path M 26.6 | KS | KH | Exotoxins and Endotoxins | Describe the features of exotoxins | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 26.7 | KS | KH | | Describe the features of Endotoxins | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 26.8 | KS | KH | | Differentiate the features of Exotoxins and Endotoxins | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 26.9 | KS | K | Classification of infectious diseases | Describe the classification of infectious diseases | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 26.10 | KS | K | Nosocomial infection | Define nosocomial infection | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 26.11 | KS | K | | Discuss some common nosocomial infections. | C1 | MK | Lecture | SAQ MCQ | MCQ VIVA | |

5.27. Gram positive bacterias-

| Sl. No. | Domains of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-Path M 27.1 | KS | K | Staphylococci | Explain the morphology of Staphylococci | C1 | MK | Lecture | Viva voce MCQ | SAQ Viva voce MCQ | |
| HomUG-Path M 27.2 | KS | K | | List the virulence factors of Staphylococcus aureus | C1 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva | |
| HomUG-Path M 27.3 | KS | KH | | Explain the pathogenesis of staphylococcus aureus infections | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 27.4 | KS | KH | | Describe the laboratory diagnosis of staphylococcal infections | C2 | DK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | Practice of medicine |
| HomUG-Path M 27.5 | KS | K | Pneumococci | Explain the morphology of Pneumococci | C1 | MK | Lecture | Viva voce MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 27.6 | KS | KH | | Describe the virulence factors of Pneumococci | C2 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 27.7 | KS | KH | | Describe the pathogenesis of Pneumococcus | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 27.8 | KS | KH | | Describe the laboratory diagnosis of Pneumococcal infections | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |

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| HomUG-Path M 27.9 | KS | K | Streptococci | Explain the morphology of Streptococcus pyogenes | C1 | MK | Lecture | Viva voce MCQ SAQ | SAQ MCQ Viva voce | |
| HomUG-Path M 27.10 | KS | KH | | Describe the virulence factors of Streptococcus pyogenes | C2 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 27.11 | KS | KH | | Explain the pathogenicity of Streptococcus pyogenes | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 27.12 | KS | KH | | Explain the pathogenesis of post streptococcal sequelae caused by streptococcus pyogenes | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 27.13 | KS | KH | | Describe the laboratory diagnosis of streptococcal infections | C2 | DK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ | |
| HomUG-Path M 27.14 | KS | K | Corynebacterium diphtheriae | Explain the morphology of Corynebacterium diphtheriae | C1 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 27.15 | KS | KH | | Describe the pathogenicity of Corynebacterium diphtheriae | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 27.16 | KS | K | | Describe the laboratory diagnosis of diphtheria | C1 | NK | Lecture | NA | NA | Practice of medicine |

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| HomUG-Path M 27.17 | KS | K | Bacillus anthracis | Explain the morphology of Bacillus anthracis | C1 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 27.18 | KS | KH | | Describe the pathogenicity of Bacillus anthracis | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ | |
| HomUG-Path M 27.19 | KS | KH | | Describe the clinical features of Human anthrax | C2 | DK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 27.20 | KS | KH | | Describe the laboratory diagnosis of Human anthrax | C2 | NK | Lecture | Not to be assessed | NA | |
| HomUG-Path M 27.21 | KS | K | Bacillus cereus | Discuss the clinical manifestations of Bacillus cereus | C1 | DK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 27.22 | KS | K | Clostridium tetani | Explain the morphology of Clostridium tetani | C1 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 27.23 | KS | KH | | Describe pathogenesis of Clostridium tetani | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva | |
| HomUG-Path M 27.24 | KS | KH | | Explain the Clinical manifestation of tetanus | C2 | DK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva | Community medicine, Practice of medicine |

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| HomUG-Path M 27.25 | KS | K | | Describe the Laboratory diagnosis of tetanus | C1 | NK | Lecture | NA | NA | |
| HomUG-Path M 27.26 | KS | K | Clostridium perfringens | Explain the morphology of Clostridium perfringens | C1 | MK | Lecture | SAQ MCQ Viva voce | MCQ Viva voce | |
| HomUG-Path M 27.27 | KS | KH | | Describe the clinical manifestation of Clostridium perfringens | C2 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 27.28 | KS | K | | Describe laboratory diagnosis of Clostridium perfringens | C1 | NK | Lecture | NA | NA | |
| HomUG-Path M 27.29 | KS | K | Clostridium botulinum | Explain the morphology of Clostridium botulinum | C1 | MK | Lecture | SAQ MCQ Viva voce | MCQ Viva voce | |
| HomUG-Path M 27.30 | KS | KH | | Describe pathogenicity of Clostridium botulinum | C2 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 27.31 | KS | K | | Describe laboratory diagnosis of Clostridium botulinum | C1 | NK | Lecture | NA | NA | |
| HomUG-Path M 27.32 | KS | KH | Clostridium Difficile | Describe the pathogenicity of Clostridium difficile | C2 | NK | Lecture | NA | NA | |

5.28. Gram negative bacterias-

| Sl.No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-Path M 28.1 | KS | K | Neisseria gonorrhoeae | Explain the morphology of Neisseria gonorrhoeae | C1 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 28.2 | KS | KH | | Describe the pathogenesis of Neisseria gonorrhoeae | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 28.3 | KS | K | | Describe the laboratory diagnosis of Neisseria gonorrhoeae | C1 | NK | Lecture | NA | | |
| HomUG-Path M 28.4 | KS | K | Neisseria meningitidis | Explain the morphology of Neisseria meningitidis | C1 | MK | Lecture | Viva voce MCQ | SAQ Viva voce MCQ | |
| HomUG-Path M 28.5 | KS | KH | | Describe the clinical spectrum of meningococcal infections | C2 | MK | Lecture | SAQ Viva voce MCQ | SAQ Viva voce MCQ | |
| HomUG-Path M 28.6 | KS | K | | Describe the laboratory diagnosis of Neisseria meningitidis | C1 | NK | Lecture | NA | | |
| HomUG-Path M 28.7 | KS | K | Escherichia coli | Explain the morphology of Escherichia coli | C1 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 28.8 | KS | KH | | Describe the virulence factors of Escherichia coli | C2 | MK | Lecture | SAQ MCQ | MCQ Viva Voce | |

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| HomUG-Path M 28.9 | KS | KH | | Describe the pathogenicity of Escherichia coli | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M 28.10 | KS | KH | | Describe the clinical syndromes caused by Escherichia coli | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 28.11 | KS | KH | | Describe the laboratory diagnosis of Escherichia coli | C2 | MK | Lecture | Viva voce MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 28.12 | KS | KH | Shigella | Describe the pathogenicity of Shigella | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 28.13 | KS | KH | | Describe the clinical manifestations of Shigellosis. | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 28.14 | KS | K | | Describe the laboratory diagnosis of Shigellosis. | C1 | DK | Lecture | SAQ MCQ | SAQ MCQ | |
| HomUG-Path M 28.15 | KS | K | Salmonellae | Explain the morphology of Salmonellae | C1 | MK | Lecture | SAQ MCQ Viva voce | MCQ Viva voce | |
| HomUG-Path M 28.16 | KS | KH | | Describe the antigenic structure of Salmonellae | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |

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| HomUG-Path M 28.17 | KS | KH | | State the clinical syndromes caused by Salmonellae in humans | C2 | MK | Lecture | Viva voce MCQ | Viva voce MCQ SAQ LAQ | Community medicine Practice of medicine |
| HomUG-Path M 28.18 | KS | KH | | Describe the pathogenesis and clinical manifestations of Enteric fever | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M 28.19 | KS | KH | | Explain the laboratory diagnosis of Salmonella infection | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | Practice of medicine |
| HomUG-Path M 28.20 | KS | K | Klebsiella | Describe the morphology of Klebsiella pneumonia | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 28.21 | KS | KH | | Describe the pathogenicity of Klebsiella pneumoniae | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 28.22 | KS | K | | Describe the laboratory diagnosis of Klebsiella pneumoniae | C2 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 28.23 | KS | KH | Proteus | Describe the pathogenicity of Proteus bacilli | C2 | NK | Lecture | Not to be assessed | | |
| HomUG-Path M 28.24 | KS | KH | Yersinia | Describe the pathogenicity of Yersinia pestis | C2 | NK | Lecture | | | |
| HomUG-Path M 28.25 | KS | K | Vibrio cholera | Explain the morphology of Vibrio cholera | C1 | MK | Lecture | Viva voce MCQ | MCQ Viva voce | |

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| HomUG-Path M 28.26 | KS | KH | | Describe pathogenesis and clinical features of cholera | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | Community medicine, Practice of medicine |
| HomUG-Path M 28.27 | KS | KH | | Describe the laboratory diagnosis of Cholera | C1 | DK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M 28.28 | KS | KH | Pseudomonas | Describe the pathogenicity of pseudomonas aeruginosa | C1 | NK | Lecture | SAQ MCQ | MCQ Viva voce | |
| HomUG-Path M 28.29 | KS | K | H.influenzae | State the diseases caused by H.influenzae | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 28.30 | KS | K | | Describe the laboratory diagnosis of H.influenzae | C1 | NK | Lecture | Not to be assessed | | |
| HomUG-Path M 28.31 | KS | K | Bordetella pertussis | Explain the morphology of Bordetella pertussis | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 28.32 | KS | KH | | Describe the clinical manifestation of B.pertussis | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | Community medicine Practice of medicine |
| HomUG-Path M 28.33 | KS | K | | Describe the laboratory diagnosis of Bordetella Pertussis | C1 | DK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |

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| HomUG-Path M 28.34 | KS | K | Brucella | Explain the morphology of Brucellae | C1 | DK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 28.35 | KS | KH | | Describe the pathogenesis of Brucellosis. | C2 | DK | Lecture | SAQ MCQ | MCQ Viva voce | |
| HomUG-Path M 28.36 | KS | K | | Describe the laboratory diagnosis of Brucellae | C1 | NK | Lecture | NA | NA | |
| HomUG-Path M 28.37 | KS | K | Helicobacter pylori | Describe the morphology of Helicobacter pylori | C1 | NK | Lecture | NA | NA | |
| HomUG-Path M 28.38 | KS | KH | | Describe the pathogenicity of Helicobacter pylori infection | C2 | DK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 28.39 | KS | K | | Describe the laboratory diagnosis of Helicobacter pylori infection | C1 | NK | Lecture | NA | NA | |
| HomUG-Path M 28.40 | KS | K | Rickettsiae | Discuss the human diseases caused by Rickettsiae group of organism | C1 | DK | Lecture | MCQ Viva voce | MCQ Viva voce | |
| HomUG-Path M 28.41 | KS | K | Chlamydia | Describe the diseases caused by chlamydia | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |

5.29. Acid fast bacterias-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-Path M. 29.1 | KS | K | Mycobacterium tuberculosis | Explain the morphology of Mycobacterium tuberculosis | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M. 29.2 | KS | KH | | Explain the pathogenesis of Mycobacterium tuberculosis | C2 | DK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | Community medicine, Practice of medicine |
| HomUG-Path M. 29.3 | KS | KH | | Describe the pathology of Primary tuberculosis | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M. 29.4 | KS | KH | | Explain pathology of Secondary tuberculosis | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M. 29.5 | KS | K | | Explain laboratory diagnosis of Mycobacterial tuberculosis | C1 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M. 29.6 | KS | K | Mycobacterium leprae | Explain the morphology of Mycobacterium leprae | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M. 29.7 | KS | KH | | Discuss the pathology of Leprosy | C2 | MK | Lecture | Viva voce MCQ | SAQ Viva voce | |

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| | | | | | | | | | MCQ LAQ | |
| HomUG-Path M. 29.8 | KS | KH | | Differentiate between Lepromatous and Tuberculoid leprosy | C2 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ LAQ Viva voce | Community medicine, Practice of medicine |
| HomUG-Path M. 29.9 | KS | K | | Describe the laboratory diagnosis of Mycobacterium Leprae | C1 | DK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M. 29.10 | KS | KH | | Discuss Lepromin test | C2 | DK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |

5.30. Spirochaetes

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-Path M. 30.1 | KS | K | Treponema pallidum | Explain the morphology of Treponema pallidum | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M. 30.2 | KS | KH | | Describe the pathogenesis of Syphilis | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M. 30.3 | KS | KH | | Describe the clinical manifestations of Syphilis | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | Practice of medicine |

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| HomUG-Path M. 30.4 | KS | KH | | Describe the laboratory diagnosis for syphilis | C2 | DK | Lecture | SAQ MCQ Viva voce | SAQ MCQ LAQ Viva voce | |
| HomUG-Path M. 30.5 | KS | K | Non venereal treponematoses | State the three distinct forms of non venereal trepanomatoses | C1 | NK | Lecture | Not to be assessed NA | | |
| HomUG-Path M. 30.6 | KS | K | | Describe the features of Endemic syphilis | C1 | NK | Lecture | | | |
| HomUG-Path M. 30.7 | KS | K | | Describe the features of Yaws | C1 | NK | Lecture | | | |
| HomUG-Path M. 30.8 | KS | K | | Describe the features of Pinta | C1 | NK | Lecture | | | |
| HomUG-Path M. 30.9 | KS | K | Borrelia | Mention the types of Borrelia | C1 | NK | Lecture | NA | NA | |
| HomUG-Path M. 30.10 | KS | K | | State the diseases caused by Borrelia | C1 | NK | Lecture | NA | | |
| HomUG-Path M. 30.11 | KS | K | Leptospira | Explain the morphology of Leptospira | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M. 30.12 | KS | KH | | Describe pathogenicity of Leptospira | C2 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |

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| HomUG-Path M. 30.13 | KS | KH | | Describe the clinical manifestations of Leptospirosis | C2 | MK | Lecture | MCQViva voce | MCQVi va voce | |
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5.31. Fungi

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-Path M. 31.1 | KS | K | Fungi | State the characteristics of fungi | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ | |
| HomUG-Path M. 31.2 | KS | K | | Classify fungi based on morphological forms | C1 | DK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M. 31.3 | KS | K | | Classify fungi based on type of infection | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ | |
| HomUG-Path M. 31.4 | KS | K | | Discuss the laboratory diagnosis of fungal infections | C1 | DK | Lecture | SAQ MCQ | SAQ MCQ | |
| HomUG-Path M. 31.5 | KS | K | | State examples for superficial mycoses | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M. 31.6 | KS | K | | State the types of Subcutaneous mycoses | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M. 31.7 | KS | K | | State four fungi causing Systemic mycoses | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M. 31.8 | KS | K | | State examples of fungi causing Opportunistic Mycoses | C1 | DK | Lecture | Viva voce MCQ | Viva voce MCQ | |

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| HomUG-Path M. 31.9 | KS | KH | | Describe the pathogenesis of Candidiasis | C2 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M. 31.10 | KS | KH | Homoeopathic concept | Explain the significance of susceptibility in fungal infections | C2 | NK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | Organon of medicine |

5.32. Parasitology: Introduction to Parasitology, Protozoans

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-Path M 32.1 | KS | K | Introduction to parasitology | Define the terms “parasite”, “Host” | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 32.2 | KS | K | | State the types of parasites with examples | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 32.3 | KS | K | | State the types of Host with examples | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 32.4 | KS | K | | List the three categories of host parasite relationship | C1 | MK | Lecture | Viva voce MCQ | SAQ Viva voce MCQ | |
| HomUG-Path M 32.5 | KS | K | | Define the terms Symbiosis, Commensalism, Parasitism | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 32.6 | KS | K | Protozoa – Intestinal – Entamoeba histolytica | Describe the morphology of Entamoeba histolytica | C1 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |

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| HomUG-Path M 32.7 | KS | KH | | Describe the life cycle of Entamoeba histolytica | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M 32.8 | KS | KH | | Describe the clinical manifestations of Entamoeba histolytica | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M 32.9 | KS | KH | | Enumerate the differences between Amoebic dysentery and Bacillary dysentery | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 32.10 | KS | K | | Describe the laboratory diagnosis of amoebiasis | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M 32.11 | KS | K | Protozoa – Intestinal - Giardia lamblia | Describe the morphology of Giardia lamblia | C1 | DK | Lecture | Viva voce MCQ | SAQViva voce MCQ | |
| HomUG-Path M 32.12 | KS | KH | | Describe the life cycle of Giardia lamblia | C1 | DK | Lecture | SAQ MCQ | SAQ MCQ | |
| HomUG-Path M 32.13 | KS | KH | | Describe the pathogenicity and clinical features of Giardia lamblia | C2 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 32.14 | KS | K | Protozoa – Urogenital – Trichomonas vaginalis | Describe the morphology of Trichomonas vaginalis | C1 | DK | Lecture | Viva voce MCQ | SAQViva voce MCQ | |
| HomUG-Path M 32.15 | KS | KH | | Describe the life cycle of Trichomonas vaginalis | C1 | DK | Lecture | SAQ MCQ | SAQ MCQ | |
| HomUG-Path M 32.16 | KS | KH | | Describe the pathogenesis of Trichomonas vaginalis | C2 | DK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | OBG |

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| HomUG-Path M 32.17 | KS | K | Blood Tissues – plasmodium species | Explain the life cycle of Plasmodium species | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M 32.18 | KS | KH | | Describe the pathogenesis Plasmodium species | C2 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 32.19 | KS | KH | | Describe the clinical features of malaria. | C2 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | Community medicine |
| HomUG-Path M 32.20 | KS | K | | Explain the laboratory diagnosis of malaria | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 32.21 | KS | K | Blood Tissues – Toxoplasma gondii | Describe the Mode of transmission of Toxoplasma gondii | C1 | MK | Lecture | SAQ MCQ Viva voce | MCQ Viva voce | |
| HomUG-Path M 32.22 | KS | KH | | Describe the Pathogenesis of Toxoplasma gondii | C2 | NK | Lecture | | | |
| HomUG-Path M 32.23 | KS | KH | | Describe the Clinical features of human toxoplasmosis | C2 | DK | Lecture | SAQ MCQ Viva voce | MCQ Viva voce | |
| HomUG-Path M 32.24 | KS | K | | Describe the Lab diagnosis of human toxoplasmosis | C1 | NK | Lecture | Not to be assessed | | |
| HomUG-Path M 32.25 | KS | K | Blood Tissues – | Describe the Trypanosoma brucei | C1 | NK | Lecture | SAQ MCQ | MCQ | |

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| HomUG-Path M 32.26 | KS | KH | Trypanosoma brucei | Describe the Life cycle of Trypanosoma brucei | C2 | DK | Lecture | SAQ MCQ | MCQ | |
| HomUG-Path M 32.27 | KS | KH | | Describe the Pathogenecity of Trypanosoma brucei | C2 | DK | Lecture | SAQ MCQ Viva voce | MCQ Viva voce | |
| HomUG-Path M 32.28 | KS | KH | | Describe the Clinical features of trypanosomiasis | C2 | DK | Lecture | SAQ MCQ Viva voce | SAQMCQ Viva voce | |
| HomUG-Path M 32.29 | KS | K | | Describe the Lab diagnosis of trypanosomiasis | C1 | NK | Lecture | Not to be assessed | | |
| HomUG-Path M 32.30 | KS | K | Blood and Tissues – Trypanosoma Cruzi | Describe the morphology of Trypanosoma Cruzi | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ | |
| HomUG-Path M 32.31 | KS | K | | Describe the Life cycle of Trypanosoma Cruzi | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ LAQ | |
| HomUG-Path M 32.32 | KS | KH | | Describe the Pathogenicity of Trypanosoma Cruzi | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ LAQ | |
| HomUG-Path M 32.33 | KS | KH | | Describe the Clinical features of Chagas disease | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ LAQ Viva voce | Community medicine |
| HomUG-Path M 32.34 | KS | K | | Describe the Lab diagnosis of Chagas disease | C1 | CK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |

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| HomUG-Path M 32.35 | KS | K | Blood Tissues and – Leishmania species | Describe the morphology of Leishmania donovani | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 32.36 | KS | KH | | Describe the Life cycle of Leishmania donovani | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 32.37 | KS | KH | | Describe the pathogenicity of Leishmania donovani | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 32.38 | KS | KH | | Describe the clinical features of Leishmaniasis | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 32.39 | KS | K | | Describe the Laboratory diagnosis of Leishmaniasis. | C1 | DK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |

5.33. Helminths-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-Path M 33.1 | KS | K | Helminths – Cestodes – Echinococcus granulosus | Describe the morphology of Echinococcus granulosus | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva | |
| HomUG-Path M 33.2 | KS | KH | | Describe the life cycle of Echinococcus granulosus | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva | |
| HomUG-Path M 33.3 | KS | KH | | Describe the pathogenesis of Echinococcus granulosus | C2 | MK | Lecture | MCQ | LAQ SAQ MCQ Viva | |
| HomUG-Path M 33.4 | KS | KH | | Describe the clinical features of hydatid disease | C2 | MK | Lecture | MCQ | LAQ SAQ MCQ Viva | |
| HomUG-Path M 33.5 | KS | K | | Describe Laboratory diagnosis of hydatid disease | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva | |
| HomUG-Path M 33.6 | KS | K | Helminths – Cestodes – Taenia saginata and Taenia solium | Describe the morphological difference between T.saginata and T.solium | C1 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva | |
| HomUG-Path M 33.7 | KS | KH | | Describe the life cycle of Taenia saginata | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva | |
| HomUG-Path M 33.8 | KS | KH | | Describe the life cycle of Taenia solium | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva | |

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| HomUG-Path M 33.9 | KS | KH | | Describe the pathogenicity and clinical features of taeniasis | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | Community medicine |
| HomUG-Path M 33.10 | KS | K | | Describe the lab diagnosis of taeniasis. | C1 | DK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva | |
| HomUG-Path M 33.11 | KS | K | Helminths – Trematodes – Paragonimuswestermani | Describe the morphology of Paragonimuswestermani | C1 | DK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 33.12 | KS | K | | Describe the life cycle of Paragonimuswestermani | C1 | DK | Lecture | SAQ MCQ | MCQ | |
| HomUG-Path M 33.13 | KS | KH | | Describe the pathogenicity and clinical features of Paragonimuswestermani | C2 | DK | Lecture | SAQ MCQ Viva voce | MCQ Viva voce | |
| HomUG-Path M 33.14 | KS | K | | Describe the lab diagnosis of paragonimiasis | C1 | NK | Lecture | Not to be assessed | | |
| HomUG-Path M 33.15 | KS | K | Helminths – Trematodes – Schistosoma haematobium | Describe the morphology of Schistosoma haematobium | C1 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 33.16 | KS | KH | | Describe the life cycle of Schistosoma haematobium | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 33.17 | KS | KH | | Describe the pathogenicity and clinical features of Bilharziasis | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 33.18 | KS | K | | Describe the lab diagnosis of Bilharziasis | C1 | DK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |

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| HomUG-Path M 33.19 | KS | K | Helminths – Trematodes – F.hepatica | Describe the morphology of Fasciola hepatica | C1 | MK | Lecture | SAQ MCQ Viva voce | MCQ Viva voce | |
| HomUG-Path M 33.20 | KS | K | | Describe the life cycle of Fasciola hepatica | C1 | NK | Lecture | NA | NA | |
| HomUG-Path M 33.21 | KS | KH | | Describe the pathogenicity of Fascioliasis | C2 | DK | Lecture | MCQ Viva voce | MCQ Viva voce | |
| HomUG-Path M 33.22 | KS | K | Helminths – Nematodes – Ankylostoma duodenale | Describe the morphology of Ancylostoma duodenale | C1 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 33.23 | KS | KH | | Describe the life cycle of Ancylostoma duodenale | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 33.24 | KS | KH | | Describe the pathogenicity and clinical features of hook worm infection. | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | Community medicine |
| HomUG-Path M 33.25 | KS | K | | Describe the laboratory diagnosis of hook worm infection. | C1 | DK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 33.26 | KS | K | Helminth – Nematodes – Ascaris lumbricoides | Describe the morphology of Ascaris lumbricoides | C1 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 33.27 | KS | KH | | Describe the life cycle of Ascaris lumbricoides | C2 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |

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| HomUG-Path M 33.28 | KS | KH | | Describe the pathogenicity and clinical features of Ascariasis | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 33.29 | KS | K | | Describe laboratory diagnosis of Ascariasis | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 33.30 | KS | K | Helminths – Nematodes – Enterobius vermicularis | Describe the morphology of Enterobius vermicularis | C1 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 33.31 | KS | KH | | Describe the life cycle of Enterobius vermicularis | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 33.32 | KS | K | | Describe the pathogenicity and clinical features of Enterobiasis | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 33.33 | KS | K | | Describe the laboratory diagnosis of Enterobiasis | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 33.34 | KS | K | | Describe the morphology of Strongyloides stercoralis | C1 | NK | Lecture | NA | NA | |
| HomUG-Path M 33.35 | KS | KH | | Describe the life cycle of Strongyloides stercoralis | C1 | NK | Lecture | NA | NA | |
| HomUG-Path M 33.36 | KS | KH | | List the diseases caused by S. stercoralis | C2 | NK | Lecture | NA | NA | |

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| HomUG-Path M 33.37 | KS | K | Helminths – Nematodes – Trichuristrichiura | Describe the morphology of Trichuris trichiura | C1 | DK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 33.38 | KS | KH | | Describe life cycle of Trichuris trichiura | C2 | DK | Lecture | SAQ MCQ | MCQ | |
| HomUG-Path M 33.39 | KS | KH | | Describe the pathogenicity and clinical manifestation of Trichuristrichiura | C2 | DK | Lecture | SAQ MCQ | MCQ | |
| HomUG-Path M 33.40 | KS | K | | Describe the lab diagnosis of trichuriasis | C1 | NK | Lecture | Not to be assessed | | |
| HomUG-Path M 33.41 | KS | K | Helminths – Filarial Nematodes – Wuchereriabancrofti | Describe the morphology of Wuchereriabancrofti | C1 | MK | Lecture | SAQ MCQViva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 33.42 | KS | KH | | Describe the life cycle of Wuchereriabancrofti | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 33.43 | KS | KH | | Describe pathogenesis of Wuchereriabancrofti | C2 | MK | Lecture | SAQ MCQViva voce | LAQ SAQ MCQViva voce | |
| HomUG-Path M 33.44 | KS | K | | Describe the lab diagnosis of Wuchereriasis | C1 | MK | Lecture | SAQ MCQViva voce | LAQ SAQ MCQViva voce | |
| HomUG-Path M 33.45 | KS | KH | Helminths – Filarial Nematodes – Brugiamalayi | Describe pathogenesis of Brugiamalayi | C2 | NK | Lecture | Viva voce MCQ | Viva voce MCQ | |

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| HomUG-Path M 33.46 | KS | KH | Loa Loa | Describe pathogenesis of Loa Loa | C2 | NK | Lecture | NA | NA | |
| HomUG-Path M 33.47 | KS | KH | Onchocerca volvulus | Describe pathogenesis of Onchocerca volvulus | C2 | NK | Lecture | NA | NA | |
| HomUG-Path M 33.48 | KS | KH | Dracunculus medinensis | Describe pathogenesis of Dracunculus medinensis | C2 | NK | Lecture | NA | NA | |
| HomUG-Path M 33.49 | KS | KH | Homoeopathic concepts | Explain the Homoeopathic concepts in parasitic infections | C2 | DK | Lecture | SAQ MCQ | SAQ MCQ | Organon of medicine |
| HomUG-Path M 33.50 | KS | KH | | Explain the application of Homoeopathic concepts in management of parasitic infections | C2 | DK | Lecture | SAQ MCQ | SAQ MCQ | Organon of medicine |

5.34. Virology : Introduction-

| SL.No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-Path M 34.1 | KS | K | Virology – Introduction - Structure | Describe the morphology of virus | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M 34.2 | KS | K | Virology – Introduction – Viral replication | Discuss the steps of viral replication | C1 | DK | Lecture | Viva voce MCQ | SAQ Viva voce MCQ | |
| HomUG-Path M 34.3 | KS | K | Virology – Introduction – Viral inclusion bodies | Describe the viral inclusion bodies with examples | C1 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 34.4 | KS | K | Pathogenesis of viral infections | Describe the pathogenesis of viral infections | C1 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 34.5 | KS | K | Virology – Introduction – Lab diagnosis of Viral infections | Discuss about cultivation of viruses | C1 | NK | Lecture | Not to be assessed | Not to be assessed | |

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| HomUG-Path M 34.6 | KS | K | Virology – Introduction - Classification | Describe the classification of viruses based on type of nucleic acid | C1 | MK | Lecture | SAQ MCQ Viva voce | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 34.7 | KS | K | Virus host interactions and its Significance in Homoeopathy | State the various virus host interactions | C1 | MK | Lecture | SAQ MCQ | MCQ Viva | |
| HomUG-Path M 34.8 | KS | K | Bacteriophages | Explain the morphology of bacteriophage | C1 | MK | Lecture | SAQ MCQ Viva voce | SAQ MCQ Viva voce | |
| HomUG-Path M 34.9 | KS | K | | Explain the significance of bacteriophages in medical microbiology | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ | |

5.35. DNA viruses-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-Path M 35.1 | KS | K | DNA virus – Pox virus- | State the pox virus which infect humans | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 35.2 | KS | K | | Describe the clinical features of Molluscum contagiosum | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ | |
| HomUG-Path M 35.3 | KS | K | DNA virus – Papova virus-Human papillomavirus | Discuss the diseases caused by Human Papilloma virus | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ | |

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| HomUG-Path M 35.4 | KS | KH | DNA virus –Herpes virus- Herpes simplex | Explain the pathogenesis of Herpes simplex virus | C2 | MK | Lecture | SAQ MCQ | MCQ | |
| HomUG-Path M 35.5 | KS | K | | Describe the clinical features of Herpes simplex virus infection | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ | |
| HomUG-Path M 35.6 | KS | K | | Describe the laboratory diagnosis of Herpes virus infection | C1 | MK | Lecture | SAQ MCQ | MCQ | |
| HomUG-Path M 35.7 | KS | K | DNA virus –Herpes virus- Varicella-zoster | Describe the pathogenesis of Varicella zoster | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M 35.8 | KS | KH | | Describe the clinical manifestation and complications of Chicken pox | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M 35.9 | KS | KH | | Describe the pathogenesis of Herpes zoster or shingles | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ | |
| HomUG-Path M 35.10 | KS | K | | Explain the laboratory diagnosis of Varicella-zoster infection | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ | |
| HomUG-Path M 35.11 | KS | K | DNA virus –Herpes virus- Cytomegaloviruses | Explain the morphology of Cytomegalovirus | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 35.12 | KS | K | | Describe the clinical features of Cytomegalovirus disease | C1 | DK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 35.13 | KS | K | | Explain the laboratory diagnosis of Cytomegalovirus disease | C1 | DK | Lecture | SAQ MCQ | MCQ Viva voce | |
| HomUG-Path M 35.14 | KS | K | DNA virus –Herpes virus- Human herpes virus | List the two variants of Human Herpes Virus | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |

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| HomUG-Path M 35.15 | KS | K | | Explain the clinical features of Human Herpes virus | C1 | MK | Lecture | SAQ MCQ | MCQ Viva voce | |
| HomUG-Path M 35.16 | KS | K | DNA virus –Herpes virus-Epstein –Barr virus | List the clinical conditions caused by Epstein-Barr virus | C1 | MK | Lecture | Viva voce MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 35.17 | KS | K | | Describe the pathogenesis of Epstein –Barr virus infection | C1 | MK | Lecture | SAQ MCQ | MCQ Viva voce | |
| HomUG-Path M 35.18 | KS | K | | Describe the laboratory diagnosis of Epstein-Barr virus infection | C1 | MK | Lecture | SAQ MCQ | MCQ Viva voce | |
| HomUG-Path M 35.19 | KS | KH | DNA virus – Adenoviruses | Describe the pathogenicity and clinical manifestations of Adenoviruses | C2 | MK | Lecture | SAQ MCQ | MCQ Viva voce | |
| HomUG-Path M 35.20 | KS | K | | Explain the laboratory diagnosis of Adenovirus disease | C1 | DK | Lecture | SAQ MCQ | MCQ Viva voce | |
| HomUG-Path M 35.21 | KS | K | DNA virus –Hepadna virus – Hepatitis B virus | Explain the morphology of Hepatitis B virus | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ LAQ | |
| HomUG-Path M 35.22 | KS | K | | Describe the mode of transmission of Hepatitis B virus infection | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M 35.23 | KS | K | | Describe the pathogenesis of hepatitis B virus infection | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |

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| HomUG-Path M 35.24 | KS | K | | Describe the clinical features of hepatitis B virus infection | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | Community medicine, Practice of medicine |
| HomUG-Path M 35.25 | KS | K | | Explain the laboratory diagnosis of Hepatitis B virus infection | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |

5.36. RNA viruses-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-Path M 36.1 | KS | K | RNA virus – Orthomyxovirus-Influenza virus | Describe the morphology of Influenza virus | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 36.2 | KS | KH | | Describe the pathogenesis of Influenza virus | C2 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 36.3 | KS | K | | Describe the clinical features of Influenza virus infection | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | Community medicine, Practice of medicine |
| HomUG-Path M 36.4 | KS | K | | Explain the laboratory diagnosis of Influenza virus infection | C1 | MK | Lecture | SAQ MCQ | MCQ Viva voce | |
| HomUG-Path M 36.5 | KS | K | RNA virus – Paramyxovirus-Mumps | Explain the morphology of Mumps virus | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 36.6 | KS | K | | Describe the clinical features of mumps | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | Community medicine, Practice of medicine |

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| HomUG-Path M 36.7 | KS | K | | Explain the complications of Mumps | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 36.8 | KS | K | | Describe the laboratory diagnosis of Mumps virus infection | C1 | NK | Lecture | Not to be assessed | | |
| HomUG-Path M 36.9 | KS | K | RNA virus – Paramyxovirus-Measles | Explain the morphology of Measles virus | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 36.10 | KS | KH | | Explain the pathogenesis of Measles | C2 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M 36.11 | KS | K | | Describe the clinical features and complications of Measles | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | Community medicine, Practice of medicine |
| HomUG-Path M 36.12 | KS | K | | Describe the laboratory diagnosis of Measles virus | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M 36.13 | KS | K | | Explain the morphology of Rubella virus | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 36.14 | KS | K | RNA virus – Paramyxovirus-Rubella virus | Describe the clinical features of Rubella virus infection | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 36.15 | | | | Describe the features of congenital Rubella syndrome | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 36.16 | KS | K | | Explain the laboratory diagnosis of Rubella | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M 36.17 | KS | K | RNA virus – Paramyxovirus-RSV | Describe the morphology of Respiratory syncytial virus | C1 | NK | Lecture | Not to be assessed | | |

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| HomUG-Path M 36.18 | KS | KH | | Describe the clinical features of Respiratory syncytial virus infection | C2 | DK | Lecture | SAQ MCQ | MCQ Viva voce | |
| HomUG-Path M 36.19 | KS | K | RNA virua – Corona virus | Explain the morphology of Coronavirus | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 36.20 | KS | K | | State the types of corona virus infecting humans | C1 | MK | Lecture | Viva voce MCQ | LAQ SAQ Viva voce MCQ | |
| HomUG-Path M 36.21 | KS | K | | Describe the clinical features of Corona virus disease | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ Viva voce | |
| HomUG-Path M 36.22 | KS | K | | Explain the laboratory diagnosis of Corona virus disease | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M 36.23 | KS | K | RNA virus – Rhabdovirus – Rabies virus | Explain the morphology of Rabies virus | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M 36.24 | KS | K | | Describe the mode of transmission of Rabies | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M. 36.25 | KS | K | | Describe the pathogenicity of Rabies | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ MCQ Viva voce | |
| HomUG-Path M. 36.26 | KS | K | | Describe the clinical stages of Rabies | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | Community medicine |
| HomUG-Path M. 36.27 | KS | K | | Explain the laboratory diagnosis of human rabies | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |

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| HomUG-Path M 36.28 | KS | K | RNA virus –Picorna virus-Polio virus | Explain the morphology of Polio virus | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M. 36.29 | KS | K | | Describe the pathogenesis of Polio virus infection | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ | |
| HomUG-Path M. 36.30 | KS | K | | Describe the clinical features of polio | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ | Community medicine |
| HomUG-Path M 36.31 | KS | K | | Describe the laboratory diagnosis polio | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ | |
| HomUG-Path M. 36.32 | KS | K | RNA virus –Arboviruses – | Describe the general features of Arboviruses | C1 | NK | Lecture | NA | NA | |
| HomUG-Path M. 36.33 | KS | K | | Describe the types of Dengue | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M. 36.34 | KS | K | | Describe the pathogenesis and clinical classification of Dengue | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | Community medicine, Practice of medicine |
| HomUG-Path M 36.35 | KS | K | | Explain the laboratory diagnosis of Dengue | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M. 36.36 | KS | K | RNA virus –Arbo virus – Chikungunya virus | Describe the clinical features of Chikungunya | C1 | MK | Lecture | SAQ MCQ | MCQ Viva voce | |
| HomUG-Path M. 36.37 | KS | K | | Explain the laboratory diagnosis of Chikungunya | C1 | MK | Lecture | SAQ MCQ | MCQ Viva voce | |
| HomUG-Path M. 36.38 | KS | K | RNA virus –Arbo virus – Yellow fever | Describe the clinical features of Yellow fever | C1 | NK | Lecture | Not to be assessed | | |

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| HomUG-Path M.36.39 | KS | K | RNA viruses – Arbo virus – Japanese encephalitis - | Describe the clinical features of Japanese encephalitis | C1 | DK | Lecture | SAQ MCQ | MCQ Viva voce | |
| HomUG-Path M.36.40 | KS | K | RNA viruses – Retro virus – HIV | Explain the morphology of Human immunodeficiency virus | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M.36.41 | KS | K | | State the major antigens of HIV | C1 | MK | Lecture | Viva voce MCQ | LAQ SAQ Viva voce MCQ | |
| HomUG-Path M.36.42 | KS | K | | Describe the pathogenesis of HIV infection | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | |
| HomUG-Path M.36.43 | KS | K | | Describe the clinical features of HIV infection | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | Practice of medicine |
| HomUG-Path M.36.44 | KS | KH | | Describe confirmatory tests for diagnosis of HIV and AIDS | C1 | MK | Lecture | SAQ MCQ | LAQ SAQ MCQ | Practice of medicine |
| HomUG-Path M.36.45 | KS | K | RNA viruses – Hepatitis virus – HAV | Describe the morphology of Hepatitis A virus | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M.36.46 | KS | K | | Describe the pathogenesis of type A Hepatitis | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M.36.47 | KS | K | | Describe the clinical features of type A hepatitis | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |

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| HomUG-Path M. 36.48 | KS | K | | Describe the laboratory diagnosis of type A hepatitis | C1 | MK | Lecture | SAQ MCQ | SAQ MCQ Viva voce | |
| HomUG-Path M. 36.49 | KS | K | RNA viruses – Hepatitis virus –C,D,E | Discuss the comparative features of the viral hepatitis type C,D and E viruses | C1 | DK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M. 36.50 | KS | K | Emerging/re-emerging infections | Describe the factors contributing to emerging and re-emerging infectious diseases | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |
| HomUG-Path M. 36.51 | KS | K | | State the emerging infections in India | C1 | MK | Lecture | Viva voce MCQ | Viva voce MCQ | |

5.37. Homoeopathic correlation with microbiology-

| Sl. No. | Domain of Competency | Miller | Content | SLO | Bloom/Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-Path M 37.1 | KS | K | Homoeopathic correlation | Discuss the correlation of study of microbiology and parasitology with homoeopathic philosophy | C1 | DK | Lecture | SAQ MCQ | SAQ MCQ | Organon of medicine |
| HomUG-Path M 37.2 | KS | K | | Discuss Homoeopathic prophylaxis | C1 | DK | Lecture | SAQ MCQ | SAQ MCQ | Organon of medicine |
| HomUG-Path M 37.3 | KS | K | | Discuss genus epidemics | C1 | DK | Lecture | SAQ MCQ | SAQ MCQ | Organon of medicine |
| HomUG-Path M 37.4 | KS | K | | Discuss the correlation of study of microbiology and parasitology with | C1 | DK | Lecture | SAQ MCQ | SAQ MCQ | Materia medica |

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| | | | homoeopathic materiamedica | | | | | | |
| HomUG- Path M 37.5 | KS | K | Discuss the correlation of study of microbiology and parasitologywith Repertory | C1 | DK | Lecture | SAQ MCQ | SAQ MCQ | |
| HomUG- Path M 37.6 | KS | K | Discuss the significance of study of microbiology and parasitologyfor homoeopathic physician | C1 | DK | Lecture | SAQ MCQ | SAQ MCQ | Organon of medicine |

5.38. Practicals and demonstration-

| Sl. No. | Content | Competency/ Outcome | Entry behaviour | Specific Learning Objectives | Learner activity | Assessment |
|-------------------------|---|--|---|--|--|--------------------------------|
| HomU G-Path M38.1 | Blood grouping-A B O Grouping – Slide technique | Learner should be able to perform the blood grouping test of the blood sample | ABO blood group system RH blood group system | 1.Perform estimation of blood group and Rh system using slide method 2.Interpret the results of experiment to determine the blood group and Rh grouping of blood sample. | 1.Perform the procedure as per the methodology 2.Make entries into the pathology practical record | Viva voce OSPE Checklist |
| HomU G-Path M38.2 | Estimation of Haemoglobin | Learner should be able to perform the estimation of Haemoglobin with accuracy and interpret the results | Normal Haemoglobin content in children, adult males, Adult females | 1. Perform estimation of Haemoglobin using Sahli's haemoglobinometer 2. Interpret of Haemoglobin concentration of the blood sample | 1.Perform the procedure as per the methodology 2.Make entries into the pathology practical record | Viva voce OSPE Checklist |
| HomU G-Path M38.3 | Red Blood Cell Count | Learner should be able to perform the RBC count with accuracy and interpret the results | Normal values of RBC count in children, Adult males, Adult females | 1. Perform the counting of RBC using haemocytometer 2. Calculate total RBC count of blood sample. | 1.Perform the procedure as per the methodology 2.Make entries into the pathology practical record practical record | Viva voce OSPE Checklist |

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| HomU G-Path M38.4 | Total White blood cell count | Learner should be able to do the WBC count with accuracy and interpret the results | Normal values of WBC count in children, Adult males, Adult females | 1. Perform the counting of WBC using haemocytometer 2. Calculate total WBC count of blood sample. | 1. Perform the procedure as per the methodology 2. Make entries into the pathology practical record | Viva voce OSPE Checklist |
| HomU G-Path M38.5 | Differential count and morphology | Learner should be able to perform the Differential count with accuracy and interpret the results | Normal values in percentage of each type of white blood cell. Morphology of various WBC | 1. Examine the blood smear for counting of differential leucocyte count. 2. Calculate the differential leukocyte count of blood sample. | 1. Perform the procedure as per the methodology 2. Make entries into the pathology practical record | Viva voce OSPE Checklist |
| HomU G-Path M38.6 | Erythrocyte sedimentation rate [Demonstration] | Learner should be able to explain the significance of ESR and interpret the results | Stages of sedimentation of RBCs Normal values of ESR | 1. Observe the experiment using Westergren method. 2. Interpret the value of ESR of blood sample | 1. Observe the procedure 2. Make entries into the pathology practical record | NA |
| HomU G-Path M38.7 | Erythrocyte sedimentation rate [Demonstration] | Learner should be able to describe the significance of ESR and interpret the results | Stages of sedimentation of RBCs Normal values of ESR | 1. Observe the experiment using Wintrobe method. 2. Interpret the value of ESR of blood sample | 1. Observe the procedure 2. Make entries into the pathology practical record | NA |
| HomU G-Path M38.8 | Bleeding time – Duke's method | Learner should be able to perform with accuracy and reliability the bleeding time of the given sample of blood | Normal value of Bleeding time | 1. Perform the experiment using Duke's method 2. Calculate the bleeding time of blood sample. | 1. Perform the procedure as per the methodology 2. Make entries into the pathology practical record | Viva voce OSPE Checklist |

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| HomU G-Path M38.9 | Clotting time- fingertip method | Learner should be able to perform with accuracy and reliability the clotting time of the given sample of blood | Factors involved in blood clotting Sequence in clotting mechanism Normal value of clotting time | 1. Perform the experiment using fingertip method 2. Calculate the clotting time of blood sample. | 1.Perform the procedure as per the methodology 2.Make entries into the pathology practical record | Viva voce OSPE Checklist |
| HomU G-Path M38.10 | Staining of thick and thin films [Demonstration] | Learner should be able to explain the procedure of staining of thin film, | Principle and technique of preparation of Staining of thick films | Observe the procedure of staining of thin blood film | 1.Observe the procedure as per the methodology 2.Make entries into the pathology practical record | NA |
| HomU G-Path M38.11 | Staining of thick and thick films [Demonstration] | Learner should be able to explain the procedure of staining of thick film, | Principle and technique of preparation of Staining of thin films | Observe the procedure of staining of thick blood film | 1.Observe the procedure as per the methodology 2.Make entries into the pathology practical record | Viva voce OSPE Checklist |
| HomU G-Path M38.12 | Platelet count [Demonstration] | Learner should be able to describe the significance of platelet count and interpret the results | Normal value of Platelet count Principle and technique of counting of Platelet | 1. Observe the experiment of counting of Platelet of blood sample 2. Calculate platelet count of blood sample | 1.Observe the procedure as per the methodology 2.Make entries into the pathology practical record | NA |
| HomU G-Path M38.13 | Urine examination: Physical examination | Learner should be able to perform physical examination of urine with logical interpretation of results | Principle and technique of Physical examination of urine Clinical significance of physical examination of urine | 1. Perform the physical examination of urine sample 2. Interpret the results | 1.Perform the procedure as per the methodology 2.Make entries into the pathology practical record | Viva voce OSPE Checklist |

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| HomU G-Path M38.14 | Urine examination: Chemical examination | Learner should be able to perform chemical examination of given sample of urine with logical interpretation of results | Principle and technique of Chemical examination of urine Clinical significance of chemical examination of urine | 1. Perform the chemical examination of urine for presence of glucose, proteins, ketones, bile derivatives and blood 2. Interpret the results | 1.Perform the procedure as per the methodology 2.Make entries into the pathology practical record | Viva voce OSPE Checklist |
| HomU G-Path M38.15 | Urine examination: Microscopic examination | Learner should be able to do microscopic examination of urine and interpret the results | Principle and technique of microscopic examination of urine Clinical significance of microscopic examination of urine | 1. Perform the microscopical examination of urine sample 2. Interpret the results | 1.Perform the procedure as per the methodology 2.Make entries into the pathology practical record | Viva voce OSPE Checklist |
| HomU G-Path M38.16 | Examination of Faeces:Physical [Demonstartion] | Learner should be able to describe the procedure of physical examination of faeces | Principle and technique of physical examination of faeces Clinical significance of physical examination of faeces | 1. Observe the procedure of physical examination of faeces 2. Interpret the results of Physical Examination of Faeces | 1.Observe the procedure 2.Make entries into pathology practical record | NA |
| HomU G-Path M38.17 | Examination of Faeces:Microscopic for ova and protozoa [Demonstration] | Learner should be able to describe the procedure of microscopical examination of faeces and interpret the results | Principle and technique of microscopic examination of faeces Clinical significance of microscopic examination of faeces | 1. Observe the procedure of microscopical examination of faeces for ova and protozoa 2. Interpret the results of microscopical Examination of Faeces | 1.Observe the procedure 2.Make entries into pathology practical record | NA |

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| HomU G-Path M38.18 | Examination of Faeces:Chemical (occult blood) [Demonstration] | Learner should be able to describe the procedure of chemical examination of faeces and interpret the results | Principle and technique of chemical examination of faeces Clinical significance of chemical examination of faeces | 1. Observe the procedure of chemical examination of faeces 2. Interpret the results of chemical Examination of Faeces | 1.Observe the procedure 2.Make entries into pathology practical record | NA |
| HomU G-Path M38.19 | Semen analysis [Demonstration] | Learner should be able to list the physical characteristics and microscopic features of semen | Principle and technique of Semen analysis Clinical significance of semen analysis | 1. Observe the procedure of examination of semen 2. Interpret the results of the test | 1.Observe the procedure 2.Make entries into pathology practical record | Not to be assessed |
| HomU G-Path M38.20 | Microbiology: Use of microscope | Learner should be familiar with the different parts of microscope and their uses | Parts of compound microscope | 1. Identify the different parts of microscope 2. Learn the function of each part | 1. Will use and familiarise with the parts of microscope 2. Make entries into the pathology practical record | Viva voce OSPE Checklist |
| HomU G-Path M38. 21 | Microbiology: Demonstration of Methods of sterilisation: Using Hot air oven, Autoclave, | Learner should be able to explain the methods of sterilization using Hot air oven, Autoclave, | Agents of sterilization Principles of dry heat and moist heat in process of sterilization | 1. Observe the method of sterilization using hot air oven 2. Observe the method of sterilization using autoclave 3. Observe the method of sterilization using flaming | 1.Observe the procedure 2. Make entries into the pathology practical record | Viva voce OSPE Checklist |
| HomU G-Path M38. 22 | Microbiology: Motility preparation [Demonstration] | Learner should be able to explain the procedure of motility preparation | Principle and technique of Motility preparation | 1. Observe the procedure of Motility preparation 2. Interpret the results | 1.Observe the procedure 2. Make entries into and pathology practical record | Not to be assessed |

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| HomU G-Path M38. 23 | Microbiology: Gram staining | Learner should be able to stain the given smear by gram stain and examine under microscope and interpret the results | Principle and technique of Gram staining | 1. Perform gram staining on the given sample 2. Observe under the microscope 3. Interpret the results. | 1.Perform the procedure 2.Make entries into pathology practical record | Viva voce OSPE Checklist |
| HomU G-Path M38. 24 | Microbiology: Acid fast staining [Demonstration] | Learner should be able to list the steps in Acid fast staining | Principle and technique of Acid fast staining | 1. To observe the procedure of Acid fast staining 2. To observe the slide for presence of acid fast bacteria . | 1.Observe the procedure 2.Make entries into the pathology practical record | Not to be assessed |
| HomU G-Path M38. 25 | Common culture medias: Preparation of common culture media [Demonstration] | Learner should be able to list the ingredients of culture medias | Principle and technique of culture media preparation | Observe the steps of preparation of common culture media | 1.Observe the procedure 2.Make entries into the pathology practical record | Not to be assessed |
| Spotters | | | | | | |
| HomU G-Path M38. 26 | Commonly used instruments / Equipments in pathology laboratory: 1.Haemoglobinometer 2.RBC pipette 3.WBC pipette 4.Neubauer's chamber 5.ESR tubes:Wintrobe Westergren 6.Urinometer | Awareness of application and method of use of instruments,equipments in laboratory | Enumerate the commonly used instruments equipments in laboratory and its use | <ul style="list-style-type: none"> Identify the instrument / Equipment Enumerate the purpose/ use/utility of the instrument / Equipment | 1.Identify,describe the parts and list the uses of the instrument / Equipment 2.Make entries into the pathology practical record | OSPE Checklist |

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| | 7.Hot air oven 8.Autoclave 9.Incubator 10.Petri dish 11.Centrifuge 12.Waterbath 13.Inoculating loop etc. | | | | | |
| HomU G-Path M38. 27 | Interpretation of laboratory reports and its clinico pathological correlation Complete Haemogram Urine reports Liver function tests Renal function tests Thyroid function tests Lipid profile Diabetic profile Serum cardiac biomarkers Enzyme markers for necrosis Serological tests, etc. | Learner should be able to interpret the values in the given laboratory reports | Significance of interpretation of laboratory tests for diagnosis | <ul style="list-style-type: none"> Identify whether laboratory report is normal or abnormal in relation to physiological values Identify the probable reason for abnormal values in laboratory report and its clinical significance | 1.Study the laboratory reports 2.Interpret the values in the laboratory reports 3.Make entries into the pathology practical record | Viva voce OSPE Checklist |
| HomU G-Path M38. 28 | Exposure to latest equipment:Auto-analyzer, Cell counter, ELISA reader etc. [Demonstration] | Learner should be able to explain the utility of latest equipment | De novo topic | <ul style="list-style-type: none"> Identify the equipment Observe the functioning of the Equipment | 1.Observe the procedure 2.Make entries into the pathology practical record | Not to be assessed |

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| HomU G-Path M38. 29 | Histopathology: (a) Demonstration of common slides Any 15 | Learner should be able to do identify the slide and mention its distinguishing features | Histopathological changes of particular condition. | <ul style="list-style-type: none"> • Observe the histopathology slide • Identify the distinguishing features of the given histopathology slide | 1. Identify the histopathology slide based on identification points. 2. Make entries into the pathology practical record | OSPE Checklist |
| HomU G-Path M38. 30 | (b) Demonstration of gross pathological specimens / models Any 15 | Learner should be able to identify the gross specimen | Gross pathological changes in specimen as per General pathology and Systemic pathology topics | <ul style="list-style-type: none"> • Identify the specimen • List three characteristic identification features of the specimen | 1. Identify the gross pathological specimen based on identification points. 2. Make entries into the pathology practical record | OSPE Checklist |

6. Teaching learning methods

| Lectures (Theory) | Non-lectures (Practical/Demonstrative) |
|---------------------|--|
| Lectures | Clinical demonstration |
| Group discussion | Practicals /Experiential learning |
| Integrated lectures | Problem based discussion |
| | Case based learning |
| | Tutorials/Seminars/Symposium |
| | Assignments |
| | Library reference |
| | Self-learning |

Details of assessment

6.1 Overall Scheme of Assessment (Summative)

| Sr. No | Professional Course | Term I (1-6 Months) | | Term II (7-12 Months) | | |
|--------|-----------------------------|------------------------|---|-------------------------|------------------------|----------------------------------|
| 1 | Second Professional BHMS | PA I (end of 3 months) | TT I (end of 6 months) | PA II (end of 9 months) | FUE (end of 12 months) | |
| | | 20 Marks Viva | 100 Marks Practical/ Viva i) Viva voce -50 marks ii) Practical – 50 marks | 20 Marks Viva | 200 marks theory | 200 marks Practical+ Viva+ IA |

PA: Periodical Assessment; TT: Term Test; FUE: Final University Examinations; IA: Internal Assessment

7.1 Number of papers and Mark Distribution for Final University Examination (FUE)

| Sr. No. | Course Code | Papers | Theory | Practical/ Clinical | Viva Voce | Internal Assessment* | Grand Total |
|---------|--------------|--------|------------|------------------------|-----------|--|-------------|
| 1 | HomUG-Path M | 02 | 200 marks* | 100 marks | 80 marks | 20 marks (Marks of PA I + TT I + PA II) | 400 marks |

***Method of Calculation of Internal Assessment Marks for Final University Examination:**

Marks of IA- (Marks of PA-1 + Marks of TT + Marks of PA-2) / 140 X 20

7.2 Paper Layout

Summative assessment (FUE):

Theory- 200 marks

| | | |
|--|-----|----|
| Paper I (100 Mark) | | |
| General Pathology and Systemic Pathology | | |
| 1. | LAQ | 50 |
| 2. | SAQ | 40 |
| 3. | MCQ | 10 |
| Paper II (100) | | |
| Microbiology and Parasitology | | |
| 1. | LAQ | 50 |
| 2. | SAQ | 40 |
| 3. | MCQ | 10 |

7.3 Theme-wise distribution of questions for theory exam paper I

| PAPER – 1 | | | | | | |
|-----------|---|------|-------|-------|-------|-------|
| Theme | Topics | Term | Marks | LAQ's | SAQ's | MCQ's |
| A | Cell Injury and cellular adaptation, Inflammation and repair and Homoeopathic concept | I | 21 | Yes | Yes | Yes |
| B | Neoplasia ,Immunopathology and Homoeopathic concept | I | 21 | Yes | Yes | Yes |
| C | Haemodynamic disorders ,Environmental and Nutritional diseases and Homoeopathic concept | I | 17 | Yes | Yes | Yes |
| D | Diseases of the haemopoetic system, bone marrow and blood, CVS system blood vessels and lymphatics | II | 17 | Yes | Yes | Yes |
| E | Diseases of Respiratory , GIT, Liver and gall bladder, Pancreas , kidney and lower urinary tract,Endocrine glands | II | 17 | Yes | Yes | Yes |
| F | Diseases of male and female reproductive system, skin and soft tissue, nervous, Musculo-skeletal system | II | 7 | No | Yes | Yes |

7.4 Distribution of questions for theory exam paper II

| PAPER – 2 | | | | | | |
|-----------|--|------|-------|-------|-------|-------|
| Theme | Topics | Term | Marks | LAQ's | SAQ's | MCQ's |
| A | Bacteriology introduction, Human microbiome, Infection and diseases ,culture medias and methods ,Sterilisation and disinfection. | I | 12 | No | Yes | Yes |
| B | Gram positive bacterias | I | 17 | Yes | Yes | Yes |
| C | Parasites-protozoans , Virology introduction | I | 17 | Yes | Yes | Yes |
| D | Gram negative bacterias, Acid fast bacterias ,Spirochaetes | II | 21 | Yes | Yes | Yes |
| E | DNA & RNA Viruses | II | 17 | Yes | Yes | Yes |
| F | Fungi and parasites –helminthes, Diagnostic procedures in Microbiology, Homoeopathic concept | II | 16 | Yes | Yes | Yes |

7.5 Question paper blue print Paper I

| A Question Serial Number | B Type of Question | Question Paper Format (Refer table 7.4 for themes) |
|-----------------------------|---|--|
| Q1 | Multiple Choice Questions(MCQ) 10 Questions 1 mark each All compulsory | 1. Theme A 2. Theme B 3. Theme C 4. Theme C 5. Theme D 6. Theme D 7. Theme E |

| | | |
|----|--|--|
| | | 8. Theme E 9. Theme F 10. Theme F |
| Q2 | Short answer Questions (SAQ) Eight Questions 5 Marks Each All compulsory | 1. Theme A 2. Theme A 3. Theme B 4. Theme B 5. Theme C 6. Theme D 7. Theme E 8. Theme F |
| Q3 | Long answer Questions (LAQ) Five Questions 10 marks each All compulsory | 1. Theme A 2. Theme B 3. Theme C 4. Theme D 5. Theme E |

7.7 Question paper blue print Paper II

| A Question Serial Number | B Type of Question | Question Paper Format (Refer table 7.4 for themes) |
|---|--|---|
| Q1 | Multiple Choice Questions (MCQ) 10 Questions 1 mark each All compulsory | 1. Theme A 2. Theme A 3. Theme B 4. Theme B 5. Theme C 6. Theme C 7. Theme D 8. Theme E 9. Theme E 10. Theme F |
| Q2 | Short answer Questions (SAQ) Eight Questions 5 Marks Each All compulsory | 1. Theme A 2. Theme A 3. Theme B 4. Theme C 5. Theme D 6. Theme D 7. Theme E 8. Theme F |
| Q3 | Long answer Questions (LAQ) Five Questions 10 marks each All compulsory | 1. Theme B 2. Theme C 3. Theme D 4. Theme E 5. Theme F |

7.8 Details of practical assessment

| | PRACTICAL EXAM | | | | |
|--|---|--|-----------------------------|-------------|------------|
| 1. | Laboratory reports | | Marks | Total marks | Time |
| | Interpretation of laboratory reports and its clinico- pathological correlation: Complete Haemogram Urine reports Liver function tests Renal function tests Thyroid function tests Lipid profile Diabetic profile Serum cardiac biomarkers Enzyme markers for necrosis Serological tests Any one of the above | <ul style="list-style-type: none"> Identify whether laboratory report is normal or abnormal in relation to physiological values Discuss the probable reason for abnormal values in laboratory report and its clinical significance | <div>3</div> <div>7</div> | 10 marks | 10 mins |
| 2. | EXPERIMENT: | | | Total marks | Time |
| a. b. c. d. e. f. g. h. i. | Estimation of Haemoglobin % WBC -Total count RBC - Total count Differential count Bleeding time and Clotting time Determination of Blood group Physical examination of urine Chemical examination of urine Urine microscopy Gram staining Any one of the above | Procedural and Practical skills Result and Discussion | <div>15</div> <div>10</div> | 25 marks | 30 minutes |

| | | | | | |
|----|---|---|------------|------------------------|--|
| 3. | Spotters (5):25 marks | | | | |
| | ANY FIVE SPOTTERS (Instruments/ Equipments/ Specimens / Models) | •Identify the spot •List the characteristic features/ utility of the spot. | 2 3 | 5 marks X 5 = 25 marks | 3 minutes for each spotting=15 minutes |
| 4. | Spotting –Slides (5): 25 marks | | | | |
| | Any five Slides (Histopathology/parasitology/microbiology) | •Identify the slide •List three features of the given slide | 2 3 | 5 marks X 5 = 25 marks | 3 minutes for each slide=15 minutes |
| 5. | Journal or Practical record | ----- | ---- | 15 marks | |
| | Total Practical marks | | | 100 marks | |

8. OSPE STATIONS

Station # 01 (Unobserved Station)

For Organizer:

Topic Specification: Lab report interpretation

Subject Material: Clinical scenario and Laboratory report

For Candidate:

Marks: 10 Time Allowed:10 minutes.

Task: Carefully read the given clinical scenario and Laboratory report and answer the questions:

Answer the following questions :

- 1) Identify whether laboratory report is normal or abnormal in relation to physiological values (02)
- 2) Discuss the probable reason for abnormal values in laboratory report and its clinical significance (03)

For Examiner:

| Sr. No | Key | Max. Marks |
|---------------|--|-------------------|
| 1. | Identify whether laboratory report is normal or abnormal in relation to physiological values | 2 |
| 2. | Discuss the probable reason for abnormal values in laboratory report and its clinical significance | 3 |

STATION # 02 (UNOBSERVED STATION)

For Organizer:

TOPIC SPECIFICATION: Identification of Histopathological slide(5 nos)

SAMPLE MATERIAL:Histopathological slide

For Candidate:

Max. Marks: 05 Time Allowed: 03minutes for each slide

Task: Carefully identify the spotter -Histopathological slide and answer the following questions:

- Identify the histopathology slide (2)
- List three features of the given histopathology slide (3)

For Examiner:

| Sr. No | Key | Max. Marks |
|---------------|--|-------------------|
| 1. | Identify the histopathology slide | 2 |
| 2. | •List three features of the given histopathology slide | 3 |

STATION # 03 (UNOBSERVED STATION)**For Organizer:****TOPIC SPECIFICATION: Identification of appliances: (2 nos)****SAMPLE MATERIAL:Appliances****For Candidate:****Max. Marks: 05 Time Allowed: 03minutes- for each spotter****Task:** Carefully identify the spotter -Appliance and answer the following questions:

- Identify the spotter (1)
- Description of the appliance (2)
- Uses of the appliance (2)

For Examiner:

| Sr. No | Key | Max. Marks |
|--------|----------------|------------|
| 1. | Identification | 1 |
| 2. | Description | 2 |
| 3. | Uses | 2 |

STATION # 04 (UNOBSERVED STATION)**For Organizer:****TOPIC SPECIFICATION: Gross specimens/models(2 nos)****SAMPLE MATERIAL:** Gross specimen /model**For Candidate:****Max. Marks: 05 Time Allowed: 03minutes -for each spotter****Task:** Carefully identify the specimen/model and answer the following questions:

- Identify the specimen (2)
- List three characteristic features of the specimen (3)

For Examiner:

| Sr. No | Key | Max. Marks |
|--------|---|------------|
| 1. | Specimen identification | 2 |
| 2. | three characteristic features of the specimen | 3 |

STATION # 05(UNOBSERVED STATION)

For Organizer:

TOPIC SPECIFICATION: Spotter-disinfectant

SAMPLE MATERIAL: disinfectant

For Candidate:

Max. Marks: 05 Time Allowed: 03minutes.

Task: Carefully identify the spotter –disinfectant and answer the following questions:

- Identify the disinfectant (2)
- Enumerate the uses of the disinfectant (3)

For Examiner:

| Sr. No | Key | Max. Marks |
|--------|--|------------|
| 1. | Identify the disinfectant | 2 |
| 2. | Enumerate the uses of the disinfectant | 3 |

STATION # 06 (OBSERVED STATION)

For Organizer:

TOPIC SPECIFICATION: Practical (haematology/urine/gram staining)

SAMPLE MATERIAL:Blood /Urine/Smearred slide

For Candidate:

Max.Marks: 25 Time Allowed: 30minutes.

Task: Carefully perform the experiment given

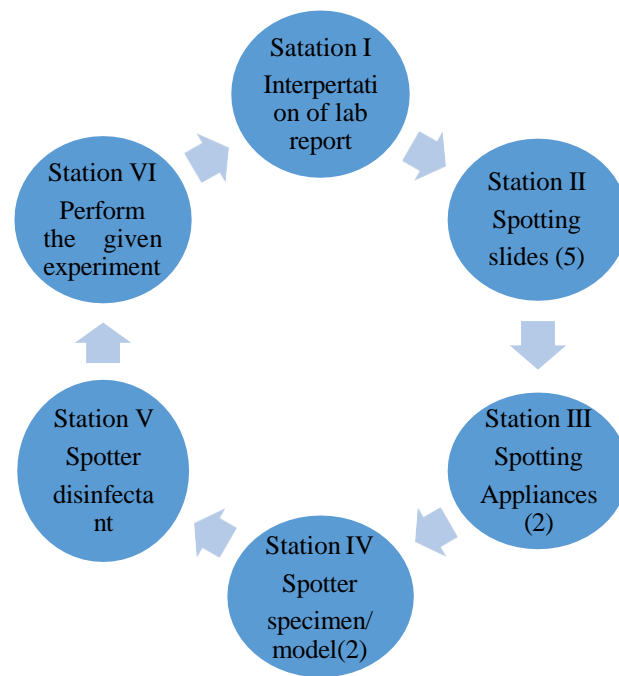
•Write the procedure and perform the experiment (15)

•Write the result obtained and its Discussion (10)

For Examiner:

| Sr. No | Key | Max. Marks |
|--------|---------------------------------|------------|
| 1. | Procedural and Practical skills | 15 |
| 2. | Result and Discussion | 10 |

OSPE STATIONS



9. List of recommended text/reference books

Theory

1. Harsh Mohan (2023), *Textbook of Pathology* (9th Edition). Jaypee Publisher (CBME)
2. Vinay Kumar and Abul K Abbas(2023) ,*Robbins & Kumar Basic Pathology* (11th SAE), Elsevier
3. Apurba S Sastry , Sandhya Bhat (2023), *Essentials of Medical Microbiology* (4th Edition), ARYA Publications. (CBME) CBS publihers.
4. Ananthanarayan.R and Jayaram Paniker CK (2022), *Ananthanarayan and Paniker's Textbook of Microbiology* (12th Edition),Universities Press (CBME)
5. Chatterjee K D, (2023), *Parasitology (Protozoology and Helminthology)*, (13th Edition),CBS publihers.
6. Ghosh Sougata (2021), *Paniker's Textbook of Medical Parasitology*, (9th Edition), Jaypee Publisher (CBME)
7. Fiona Roberts , (2018),*Pathology Illustrated International* ,(8th Edition) , Elsevier
8. Nayak Ramadas(2017),*Essentials in Hematology and Clinical Pathology*, (2nd Edition), Jaypee Publishers.
9. Sunil Kumar Mohanty (2014),*Text Book of Immunology*, (2nd Edition), Jaypee Brothers Medical Publishers

Practical

1. Harsh Mohan , (RP 2023) *Practical Pathology*, (5th Edition). Jaypee Publisher (CBME)
2. Santosh Kumar Mondal , (2024) *Pathology Practicals With OSPE*, (2nd Edition), CBS Publishers. (CBME)
3. Anamika Vyas, Sheethal. S (2023), *Concise Workbook in Practical Microbiology*, Jaypee Publishers. (CBME)
4. Dr Baveja C P(2021), *Practical Microbiology for MBBS*, (5th Edition), ARYA Publications

10. List of contributors :

I. Dr.Gopika .R.S

Professor & HoD Dept of Pathology and Microbiology
Sarada Krishna Homoeopathic Medical College ,KK dist, Tamil Nadu.

II. Dr.Shahida A S

Dean, Faculty of Homoeopathy RGUHS
Professor & HoD Dept of Pathology and Microbiology
Govt Homoeopathic Medical College ,Bangalore

III. Dr Sapna Gupta

Professor & HoD Dept of Pathology and Microbiology
Nehru Homoeopathic Medical College and Hospital ,
Govt of NCT of Delhi

Subject: Practice of Medicine

Subject code: HomUG PM-I

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1. Preamble

Practice of Medicine with Homoeopathic therapeutics is concerned with study of clinical methods, clinical presentations of systemic diseases, differential diagnosis and prognosis, general management and integration with Homoeopathic principles to evolve homoeopathic therapeutics.

Homoeopathy has a distinct approach to the concept of disease. It recognizes the ailing individual by studying him as a whole rather than in terms of sick parts and emphasizes the study of the man, his state of health, state of illness. The emphasis is on study of man in respect of health, disposition, diathesis, disease, taking all predisposing and precipitating factors, i.e. fundamental cause, maintaining cause and exciting cause. The study of the concept of individualization is essential so that the striking features which are characteristic to the individual become clear, in contrast to the common picture of the respective disease condition. Hahnemann's theory of chronic miasms provides us an evolutionary understanding of the chronic diseases: psora, sycosis, tubercular and syphilis, and acute manifestations of chronic diseases and evolution of the natural disease shall be comprehended in the light of theory of chronic miasms.

This will demand correlation of the disease conditions with basics of anatomy, physiology, biochemistry and pathology. Application of Knowledge of Organon of Medicine and Homoeopathic Philosophy, Materia Medica and Repertory in dealing with the disease conditions should be actively taught.

Life style disorders have burgeoned in modern times. Homoeopathy has a great deal to offer through its classical holistic approach. There are plenty of therapeutic possibilities which Homoeopathy needs to exploit in the years to come.

2. Course outcomes

- i. Develop as a sound homoeopathic clinician who can function indifferent clinical settings by applying knowledge, clinical skills and attitudes in studying the individual as a whole.
- ii. Able to correlate the disease conditions with the basics of anatomy, physiology, biochemistry and pathology.
- iii. Able to apply the knowledge of causation, pathophysiology, pathogenesis, manifestations, and diagnosis (including differential diagnosis) to understand the disease.
- iv. Develop adequate knowledge for rational use of investigations and its interpretation to arrive at a final diagnosis of disease.
- v. Ability to make a rational assessment of prognosis and general management of different disease conditions.

- vi. Ability to understand and provide preventive, curative, palliative, rehabilitative and holistic care with compassion, following the principles of Homoeopathy.
- vii. Able to integrate the clinical state of the disease with the concepts of Organon of Medicine and Homoeopathic Philosophy, Repertory and Homoeopathic Materia Medica for the management of the patient.

3. Learning objectives

At the end of BHMS II course, the students should be able to-

- i. Clinico-pathological evaluation of common signs and symptoms with miasmatic integration.
 - a. Understanding Common Signs and Symptoms:** By the end of the course, students will be proficient in recognizing and evaluating common signs and symptoms presented by patients, utilizing a holistic approach that integrates clinical and pathophysiological processes involved.
 - b. Diagnostic Competence:** Through case-based learning and clinical exposure, students will develop the skills necessary to conduct comprehensive clinico-pathological evaluations, to identify underlying disease tendencies and susceptibilities.
 - c. Therapeutic Proficiency:** Students will be able to select Homoeopathic remedies based on the disease expression.
- ii. Infectious Diseases general outline and introduction and common expression and investigation; Water & Electrolyte Disturbances, Acid Base Metabolism
 - a. Comprehensive Understanding:** Students will acquire a comprehensive understanding of the principles of infectious diseases, including their aetiology, pathogenesis, epidemiology, and clinical manifestations, within the context of homeopathic philosophy.
 - b. Recognition of Common Infections:** Through case studies and practical sessions, students will learn to identify common infectious diseases encountered in clinical practice, integrating homeopathic principles with conventional approaches to diagnosis.
 - c. Diagnostic Approach:** Students will develop proficiency in employing diagnostic methods relevant to infectious diseases, including physical examination findings, laboratory tests, and imaging studies, while considering holistic aspects of the patient's health.

- d. Introduction to Prevention and Control Measures:** Students will be able to define preventive strategies and public health measures aimed at controlling the spread of infectious diseases, incorporating principles of homeopathy into discussions of hygiene, immunity, and environmental factors.
 - iii. General Considerations of Immunity & Susceptibility
 - a. Understanding Immune Function:** Students will acquire a comprehensive understanding of the immune system, including its cellular and humoral components, mechanisms of recognition, and response to pathogens and foreign antigens.
 - b. Exploration of Susceptibility:** Through theoretical study and clinical case discussions, students will explore the concept of susceptibility in homeopathy, examining factors that influence an individual's predisposition to disease and their response to homeopathic treatment.
 - c. Integration of Immune Concepts:** Students will learn to integrate concepts of immunity and susceptibility into the homeopathic framework, considering the role of constitutional factors, miasmatic influences, and environmental exposures in shaping an individual's health status.
 - iv. Introduction to Medical Genetics
 - a. Foundational Principles:** Students will gain introductory understanding of medical genetics, including principles of inheritance, genetic variation, and gene-environment interactions relevant to human health and disease.
 - b. Genetic Disorders:** Through theoretical study, students will familiarize themselves with common genetic disorders, including single gene disorders, chromosomal abnormalities, and their clinical manifestations.

These course outcomes aim to equip second-year homeopathy degree students with the knowledge, skills, and perspectives necessary to approach the evaluation and management of common clinical presentations, infectious diseases and establishing the relationship between knowledge of genetics and immunology with Homeopathic concept of qualitative aspects of Susceptibility.

4. Course content and its term-wise distribution

| Theory | Non-lectures (Clinical/Demonstrative) |
|---|---------------------------------------|
| Term I | |
| 1. Clinico - pathological evaluation of common signs and symptoms with miasmatic integration* 2. Introduction to Medical genetics* | Clinical: 10 Demonstrative: 2 |
| Term II | |
| 1. Immunity & Susceptibility - General considerations* 2. Infectious Diseases and Tropical Diseases* | Clinical: 10 Demonstrative: 2 |

**Refer clause 5.4 and tables 5.4.1 – 5.4.5 for detailed content (topics breakup)*

5. Teaching hours

5.1. Gross division of teaching hours

| Practice of Medicine | | | |
|----------------------|--------------------------|------------------------------|-------|
| Year | Teaching hours- Lectures | Teaching hours- Non-lectures | Total |
| II BHMS | 80 | 24 | 104 |

5.2. Teaching hours theory

| Sr. No. | Topic | Hours |
|--------------|---|-----------|
| 1 | Clinico - pathological evaluation of common signs and symptoms with miasmatic integration | 35 |
| 2 | Immunity & Susceptibility - General considerations | 5 |
| 3 | Introduction to Medical genetics | 5 |
| 4 | Infectious Diseases and Tropical Diseases | 35 |
| Total | | 80 |

5.3. Teaching hours Non-lecture

| Sr. No. | Non-lectures | Hours |
|--------------|--|-----------|
| | Clinical | |
| 1 | Approach to Patient: a) Doctor & Patient: General Principles of History Taking b) Physical Examination General Principles c) Differential Diagnosis: The beginning of management plan | 3 |
| 2 | General Assessment: a) Psychological Assessment b) Nutritional Assessment | 3 |
| 3 | General Physical Examination Skill | 14 |
| | Demonstrative | |
| 4 | Case Based / Problem Based Discussion on any of the topic of II BHMS Syllabus topic to be conducted <i>[as per availability of the case material or patient]</i> | 4 |
| Total | | 24 |

5.4. Distribution of teaching hours with breakup of each topic

5.4.1. Clinico - pathological evaluation of Common signs and symptoms with miasmatic integration

Cardinal Manifestations and Presentation of Diseases with relevant investigations

(Ref: Harison's Principles of Internal Medicine 21stEd)

| Sr. No. | Topic | Topic breakup | Hours |
|---------|---------------------------------|---|-------|
| 1 | Pain | 1) Pain: Pathophysiology, types of pain | 4 |
| | | 2) Chest Discomfort | |
| | | 3) Abdominal Pain | |
| | | 4) Headache | |
| | | 5) Back and Neck Pain | |
| 2 | Alterations in Body Temperature | 6) Fever: Definition, types of fever, aetiology, pathophysiology, physical examination, investigations and management | 3 |
| | | 7) Fever and Rash: Definition of rash, Approach - causes and its presentation, examinations, investigations and management | |
| | | 8) Fever of Unknown Origin: Definition, types, aetiology and epidemiology, diagnostic tests, differential diagnosis and management | |
| 3 | Neurological Symptoms | 9) Syncope: Definition, classification and its aetiology and its pathophysiology, clinical features as per the types, investigations, management | 6 |
| | | 10) Dizziness and Vertigo: Definition, clinical approach with its pathophysiology and management | |
| | | 11) Fatigue: Definition, differential diagnosis, clinical approach and management | |

| Sr. No. | Topic | Topic breakup | Hours |
|---------|-------|--|-------|
| | | 12) Neurologic Causes of Weakness and Paralysis: Definition [Weakness, Paralysis, Tone, Spasticity, Rigidity, Paratonia, flaccidity, Fasciculations], Pathogenesis [Upper Motor Neuron Weakness, Lower Motor Neuron Weakness, Neuromuscular Junction Weakness, Myopathic Weakness, & Psychogenic Weakness], Distribution and its approach. | |
| | | 13) Numbness, Tingling, and Sensory Loss: Definition, pathophysiology and differential diagnosis | |
| | | 14) Gait Disorders, Imbalance, and Falls: <ul style="list-style-type: none"> a) Anatomy and physiology related to Gait balance. b) Definition, pathophysiology and clinical significance related to different types of gait disorders. c) Definition, pathophysiology and clinical manifestation of disorders of balance. d) Assessment for the patient with falls. | |
| | | 15) Confusion and Delirium: Definition, epidemiology, risk factors, pathogenesis, clinical features, physical examinations, investigations, diagnostic criteria, differential diagnosis and general management. | |
| | | 16) Coma and disorders of consciousness: Definition, stages, Diagnostic approach: History, aetiology and its differential diagnosis, neurological examinations, investigations, management and prognosis | |
| | | 17) Dementia: Definition, functional anatomy of dementia, aetiology and its differential diagnosis, Diagnostic approach: History physical & neurological examinations, | |

| Sr. No. | Topic | Topic breakup | Hours |
|---------|--|---|-------|
| 4 | Circulatory and Respiratory Dysfunctions | cognitive and neuropsychiatric examination, investigations and management | 6 |
| | | 18) Aphasia, Memory Loss, and Other Cognitive Disorders: Definition, applied anatomy, clinical examination | |
| | | 19) Sleep Disorders: Physiology of sleep and wakefulness, approach to sleep disorders and treatment; evaluation of insomnia and its treatment | |
| | | 20) Dyspnoea: Definition, epidemiology, mechanisms underlying dyspnoea, assessment, differential diagnosis; Clinical approach: history, physical examination, investigations and management. | |
| | | 21) Cough: Definition, mechanism of cough, impaired cough, aetiology, classification, assessment of chronic cough, differential diagnosis, approach: history, physical examination, investigations and management. | |
| | | 22) Haemoptysis: Definition, understanding anatomy & physiology of it, aetiopathogenesis, evaluation of haemoptysis: history, physical examination, diagnostic evaluation, and management. | |
| | | 23) Hypoxia and Cyanosis: a) Hypoxia: Definition, response to hypoxia, aetiology, pathophysiology, adaptation to hypoxia. b) Cyanosis: Definition, types, differential diagnosis with its aetiology, approach to cyanosis. | |
| | | 24) Oedema: Definition, aetiopathogenesis, differential diagnosis – Generalized and Localized oedema; | |

| Sr. No. | Topic | Topic breakup | Hours |
|---------|----------------------------|--|-------|
| | | distribution of oedema; Approach: History taking, Clinical examination and investigations. | |
| | | 25) Palpitations: Definition, aetiopathogenesis, differential diagnosis, Approach: History taking, Clinical examination, investigations and management. | |
| 5 | Abdominal/GIT Dysfunctions | 26) Dysphagia: Definition, physiology of swallowing, pathophysiology; Approach: history taking, Clinical examination, diagnostic procedures and management. | 6 |
| | | 27) Nausea, Vomiting and Indigestion: Definition, mechanism, causes & differential diagnosis, Approach: history taking, Clinical examination, diagnostic testing and management. | |
| | | 28) Diarrhoea and Constipation: Definition, Normal physiology, types and causes, differential diagnosis, Approach: history taking, Clinical examination, diagnostic testing and management. | |
| | | 29) Dysentery: Definition, causes, differential diagnosis, Approach: history taking, Clinical examination, diagnostic testing and management. | |
| | | 30) Unintentional Weight Loss: Definition, physiology of weight regulation with aging, causes and differential diagnosis, assessment and testing, management. | |
| | | 31) Gastrointestinal Bleeding: Definition, source of the bleeding and its causes and its mechanism, Approach: history taking, differentiation of UGIB & LGIB - its assessment, evaluation and management. | |

| Sr. No. | Topic | Topic breakup | Hours |
|---------|--------------------------------------|---|-------|
| 6 | Renal and Urinary Tract Dysfunctions | 32) Jaundice: Definition, clinical evaluation, metabolism of bilirubin, aetiopathogenesis, classification and its causes, differential diagnosis, Approach: history taking, Clinical examination, diagnostic testing and management. | |
| | | 33) Abdominal Swelling & Ascites: Definition, causes, differential diagnosis, Approach: history taking, Clinical examination, investigations and its evaluation. Ascites: Definition, aetiopathogenesis, evaluation, management and complications. | |
| | | 34) Interstitial Cystitis / Bladder Pain Syndrome: Definition, aetiopathogenesis, clinical presentation, investigations, diagnostic evaluation, management, complication and prognosis. | 4 |
| | | 35) Dysuria: Definitions, aetiology, pathophysiology, assessment and diagnostic evaluation. | |
| 7 | Haematological alterations | 36) Azotaemia and Urinary Abnormalities: Definitions, aetiology, pathophysiology, assessment and diagnostic evaluation. | 4 |
| | | 37) Fluid and Electrolyte Imbalance: Causes, pathophysiological evaluation, Investigations | |
| | | 38) Anaemia: Definition, applied anatomy & physiology of RBC, regulation of its production; classification, clinical presentation; Approach: History taking, clinical examination, investigations and diagnostic evaluation | |
| | | 39) Leucocytosis & Leukopenia: Definition, Aetiology, differential diagnosis. | |

| Sr. No. | Topic | Topic breakup | Hours |
|--------------|------------------------|--|-----------|
| | | 40) Bleeding diatheses: Bleeding & Thrombosis: Definitions, applied anatomy & physiology of Haemostasis, aetiology of disorder of haemostasis, clinical presentation and history taking, clinical examination, laboratory evaluation. | |
| | | 41) Interpretation of Peripheral Blood Smears | |
| 8 | Psychological symptoms | 42) Causes of asthenia, anxiety, sadness, thought disorders and delusions, perceptual disorders and hallucinations and relevant investigations | 2 |
| Total | | | 35 |

5.4.2 Medical genetics:

| Sr. No. | Topic lecture | Hours |
|--------------|--|----------|
| 1 | Cytogenetics - definition, classification of chromosomal abnormality | 1 |
| 2 | Down's Syndrome | 1 |
| 3 | Turner's & Klinefelter's Syndrome | |
| 4 | Cystic fibrosis, Huntington's disease & Marfan's syndrome | 1 |
| 5 | Poly cystic kidney disease | |
| 6 | Neoplasia | 1 |
| 7 | Rare diseases – basic concept | |
| 8 | Integrating concept of Genetics with Homoeopathy | 1 |
| Total | | 5 |

5.4.3 Immunological factors in disease with concept of susceptibility:

| Sr. No. | Topic lecture | Hours |
|--------------|--|----------|
| 1 | Introduction and Primary & Secondary Immunodeficiency States | 1 |
| 2 | Hypersensitivity reactions: I, II, III, IV | 1 |
| 3 | Autoimmune diseases | 1 |
| 4 | Transplants, Graft rejection | |
| 5 | HIV | 1 |
| 6 | Integrating concept of Immunity with Homoeopathy: Susceptibility | 1 |
| TOTAL | | 5 |

5.4.4 For study of infectious and tropical diseases: Emphasis shall be on the following headings:

- i. Definition
- ii. Causative agents
- iii. Epidemiology
- iv. Pathogenesis
- v. Clinical features
- vi. Investigations
- vii. Diagnostic features
- viii. Differential Diagnosis
- ix. Complications
- x. Management
- xi. Prevention
- xii. Prognosis
- xiii. Homoeopathic classification of disease with its reasons
- xiv. Repertorial coverage / reference related to the disease
- xv. Homoeopathic therapeutics to the disease

| Sr. No. | Topic Lecture | Hours |
|---------|--|-------|
| 1 | Herpes simplex viruses [HSV] infections | 1 |
| 2 | Varicella-zoster virus (VZV) infection | 1 |
| 3 | Epstein-Barr virus [EBV] Infections | 1 |
| 4 | Poliovirus Infections | 1 |
| 5 | Measles | 1 |
| 6 | Mumps | 1 |
| 7 | Rabies | 1 |
| 8 | Dengue | 1 |
| 9 | Japanese B Encephalitis | 1 |
| 10 | BIRD FLU | 2 |
| 11 | Influenza A H1N1 virus | |
| 12 | Chikungunya | |
| 13 | COVID 19 Virus Infection | 1 |
| 14 | Yellow fever | 1 |
| 15 | Smallpox (variola) - poxvirus infection | 1 |
| 16 | HIV Infection | 1 |
| 17 | Zika virus infection | 1 |
| 18 | Rickettsial infection | |
| 19 | Staphylococcal, streptococcal infections | 1 |
| 20 | Typhoid Fever | 1 |
| 21 | Gastroenteritis | 1 |
| 22 | Cholera | 1 |
| 23 | Tetanus | 1 |
| 24 | Anthrax, brucellosis, plague | 1 |
| 25 | Leprosy | 1 |
| 26 | Sexually Transmitted Disease, Syphilis | 1 |

| Sr. No. | Topic Lecture | Hours |
|--------------|--------------------------------------|-----------|
| 27 | Amoebiasis, Amoebic Liver Abscess | 1 |
| 28 | Filariasis / Worm infestations | 1 |
| 29 | Malaria & Kalazar | 1 |
| 30 | Leptospirosis | 1 |
| 31 | Tuberculosis | 1 |
| 32 | Extra pulmonary tuberculosis | 1 |
| 33 | Diphtheria | 1 |
| 34 | Pertussis (whooping cough) | 1 |
| 35 | Therapeutics of Infectious Disorders | 3 |
| TOTAL | | 35 |

5.4.5 Teaching hours distribution to clinical / practical / demonstrative activities (Non-lectures):

| Sr. No. | Non-lectures | Hours |
|---------|---|-------|
| 1 | Approach to Patient: d) Doctor & Patient: General Principal of History Taking e) Physical Examination General Principal f) Differential Diagnosis: The beginning of management plan | 3 |
| 2 | General Assessment: c) Psychiatric Assessment d) Nutritional Assessment | 3 |
| 3 | General Examination Skill: | 14 |
| | i.) Temp recording and its documentation and interpretation | 1 |
| | ii.) Pulse examination at different site and its documentation and interpretation | |
| | iii.) RR examination and its documentation and interpretation | 1 |
| | iv.) BP Recoding and its documentation and its interpretation | |
| | v.) Height measurement and its documentation and interpretation | 1 |

| Sr. No. | Non-lectures | Hours |
|---------|---|-------|
| | vi.) Weight measurement and its documentation and interpretation | 1 |
| | vii.) BMI and Nutrition Assessment and its documentation and interpretation | |
| | viii.) Observation of Appearance, Built, and assessing Body proportion: Documentation and interpretation | |
| | ix.) Observation of Gait and its Assessment& documentation | |
| | x.) Observation of Decubitus and its assessment& documentation | |
| | xi.) Ear examination and its documentation and interpretation | 3 |
| | xii.) Nose examination and its documentation and interpretation | |
| | xiii.) Throat examination and its documentation and interpretation | |
| | xiv.) Eye examination and its documentation and interpretation | 2 |
| | xv.) Face examination and its documentation and interpretation | 2 |
| | xvi.) Mouth examination and its documentation and interpretation | |
| | xvii.) Lymph Nodes examination at different sites and documentation and interpretation | 3 |
| | xviii.) Nails examination and its documentation and interpretation | |
| | xix.) Skin examination and its documentation and interpretation | |
| 4 | Case Based / Problem Based Discussion on any of the following topic to be conducted <i>[as per availability of the case material or patient]</i> | 4 |
| | a) Approach to Case of Fever with any system presenting symptoms [GIT / RS / Skin / Renal / MSS etc.] | |
| | b) Approach to Case presenting with Neurological Symptoms | |
| | c) Approach to Case presenting with Circulatory and / or Respiratory Symptoms | |
| | d) Approach to Case presenting with Abdominal/GIT Symptoms | |
| | e) Approach to Case presenting with Renal and Urinary Tract symptoms | |
| | f) Approach to Case presenting with Haematological symptoms | |
| | g) Approach to Case presenting with psychological symptoms | |

6. Content mapping (competencies tables)

6.1. Competency tables for clinico-pathological evaluation of common signs and symptoms with miasmatic integration:

6.1.1. Pain-

| Sl. No | Domain of Competency | Millers Level: | Content | SLO | Blooms Domain/ Guilbert 's Level | Priority - | T-L Methods | Assessment | | Integration |
|-----------------|----------------------|----------------|--|--|----------------------------------|------------|---------------------------|-------------------------|-----------|---------------------|
| | | | | | | | | Formative | Summative | |
| HomU G-PM I.1.1 | K&S | K | Define pain and its types | 1. Define pain and 2. Differentiate between acute and chronic pain | C1 | MK | Lecture, Group discussion | Quiz, Written test, MCQ | SAQ, MCQ | Anatomy, Physiology |
| HomU G-PM I.1.2 | | KH | Differentiate between types of pain | Differentiate between nociceptive, neuropathic, and inflammatory pain | C2 | MK | Lecture, Group discussion | Quiz, Written test, MCQ | SAQ, MCQ | Anatomy, Physiology |
| HomU G-PM I.1.3 | | | Role of inflammation in pain | Describe how inflammation contributes to pain sensation and hypersensitivity | C2 | MK | Lecture, Group discussion | Quiz, Written test, MCQ | SAQ, MCQ | Anatomy, Physiology |
| HomU G-PM I.1.4 | | K | Define chest discomfort and its significance | 1. define chest discomfort and 2. explain its importance in diagnosing | C1 | MK | Lecture, Group discussion | Quiz, Written test, MCQ | SAQ, MCQ | Anatomy, Physiology |

| | | | | | | | | | | |
|-----------------------|--|----|--|---|----|-----------|---------------------------|-------------------------|----------|---------------------|
| | | | | various conditions | | | | | | |
| HomU G-PM I.1.5 | | KH | Describe the common causes of chest discomfort | Describe the common etiologies of chest discomfort, such as angina, heartburn, and musculoskeletal pain | C2 | MK | Lecture, Group discussion | Quiz, Written test, MCQ | SAQ, MCQ | Anatomy, Physiology |
| HomU G-PM I.1.6 | | K | Define abdominal discomfort and its significance | 1. Define abdominal discomfort and 2. Explain its importance in diagnosing various conditions | C1 | MK | Lecture, Group discussion | Quiz, Written test, MCQ | SAQ, MCQ | Anatomy, Physiology |
| HomU G-PM I.1.7 | | KH | Describe the common causes of abdominal discomfort | Describe the common etiologies of abdominal discomfort, such as gastritis, appendicitis, and constipation | C2 | Must Know | Lecture, Group discussion | Quiz, Written test, MCQ | SAQ, MCQ | Anatomy, Physiology |

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|------------------------|--|----|--|--|----|----|---------------------------|-------------------------|----------|---------------------|
| HomU G-PM I.1.8 | | K | Define headache and its types | 1. define headache and 2. differentiate between primary and secondary headaches | C1 | MK | Lecture, Group discussion | Quiz, Written test, MCQ | SAQ, MCQ | Anatomy, Physiology |
| HomU G-PM I.1.9 | | KH | Describe the common causes of headache | Describe the common etiologies of headache, such as tension-type headache, migraine, and cluster headache | C2 | MK | Lecture, Group discussion | Quiz, Written test, MCQ | SAQ, MCQ | Anatomy, Physiology |
| HomU G-PM I.1.10 | | K | Define back and neck pain and their types | 1. define back and neck pain and 2. differentiate between mechanical and non-mechanical causes | C1 | MK | Lecture, Group discussion | Quiz, Written test | SAQ, MCQ | Anatomy, Physiology |
| HomU G-PM I.1.11 | | KH | Describe the common causes of back and neck pain | Describe the common etiologies of back and neck pain, such as muscle strain, disc herniation, and osteoarthritis | C2 | MK | Lecture, Group discussion | Quiz, Written test | SAQ, MCQ | Anatomy, Physiology |

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|------------------------|----|----|---|--|----|-----------|---------------------------|-------------------------|--------------------------------|-------------------------------------|
| HomU G-PM I.1.12 | HO | K | Define the principles of homoeopathic management of pain | define homoeopathic principles for pain management, emphasizing 1. individualization and 2. similars | C1 | MK | Lecture, Group discussion | Quiz, Written test, MCQ | SAQ, MCQ | Organon and Homoeopathic Philosophy |
| HomU G-PM I.1.13 | | KH | Describe the concept of the simillimum in homoeopathy | Describe how remedies are selected based on symptom similarity in pain management | C2 | MK | Lecture, Group discussion | Quiz, Written test, MCQ | SAQ, MCQ | Organon and Homoeopathic Philosophy |
| HomU G-PM I.1.14 | | | Explain the role of repertories in homoeopathic prescribing | Discuss repertory usage to find the most suitable remedy for pain | C2 | MK | Lecture, Group discussion | Quiz, Written test, MCQ | SAQ, MCQ | Repertory |
| HomU G-PM I.1.15 | | SH | Demonstrate the process of selecting a homoeopathic remedy | Demonstrate remedy selection based on totality symptoms in case of pain | P2 | MK | Case studies | OSCE, Practical exam | Bedside examination, Viva voce | Materia Medica |
| HomU G-PM I.1.16 | | KH | Explain the principles of case management in homoeopathy | Discuss posology in pain treatment | C2 | Must Know | Lecture, Group discussion | Quiz, Written test, MCQ | SAQ, MCQ | Organon, Homoeopathic Pharmacy |

6.1.2. Fever-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority - | T-L Methods | Assessment | | Integration |
|-----------------|----------------------|---------------|---|--|---------------------------------|------------|---------------------------------|---|----------------------|--|
| | | | | | | | | F | S | |
| HomU G-PM I.2.1 | K&S | K | Define fever and its significance | Define fever and explain its role in the body's immune response | C1 | MK | Lecture, Group discussion | Quiz, Written test | | Physiology, Pathology |
| HomU G-PM I.2.2 | | KH | Describe the types of fever and their characteristics | Describe different types of fever, such as intermittent and continuous | C2 | MK | Lecture, Group discussion | Quiz, Written test | | Physiology, Pathology |
| HomU G-PM I.2.3 | | | Explain the causes of fever | Explain the causes of fever, including infection and inflammation | C2 | MK | Lecture, Group discussion | Quiz, Written test | | Microbiology, Immunology |
| HomU G-PM I.2.4 | | K | Define the different types of fever (e.g., intermittent, remittent, continuous, relapsing). | Explain the characteristics and patterns of different types of fever. | C1 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | Theory and Viva voce | Internal Medicine, Infectious Diseases |

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|-----------------------|--|----|---|--|----|----|---------------------------------|---|----------------------|---|
| HomU G-PM I.2.5 | | KH | Describe the etiology of each type of fever. | Explain the underlying causes of intermittent, remittent, continuous, and relapsing fevers. | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | Theory and Viva voce | Internal Medicine, Infectious Diseases |
| HomU G-PM I.2.6 | | | Discuss the clinical manifestations and symptoms associated with each type of fever. | Identify the clinical features and presentations of intermittent, remittent, continuous, and relapsing fevers. | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | Theory and Viva voce | Internal Medicine, Infectious Diseases |
| HomU G-PM I.2.7 | | K | Define fever with rash. | Explain the clinical presentation of fever accompanied by a rash. | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | Theory and Viva voce | Internal Medicine, Infectious Diseases, Dermatology |
| HomU G-PM I.2.8 | | K | Identify the common causes of fever with rash (e.g., viral infections, bacterial infections, allergic reactions). | Describe the etiological factors contributing to the development of fever with rash. | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | Theory and Viva voce | Internal Medicine, Infectious Diseases, Dermatology |

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|------------------------|--|----|--|---|----|-----------|---------------------------------|---|----------------------|---|
| HomU G-PM I.2.9 | | KH | Discuss the differential diagnosis of fever with rash. | Explain the process of differentiating between various infectious and non-infectious causes of fever with rash. | C2 | Must Know | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | Theory and Viva voce | Internal Medicine, Infectious Diseases, Dermatology |
| HomU G-PM I.2.10 | | K | Define Fever of Unknown Origin (FUO). | Explain the criteria/definition of FUO. | C1 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | Theory and Viva voce | Internal Medicine, Infectious Diseases |
| HomU G-PM I.2.11 | | KH | Discuss the etiology and pathophysiology of FUO. | Describe the possible causes and underlying mechanisms of FUO. | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | Theory and Viva voce | Internal Medicine, Infectious Diseases |
| HomU G-PM I.2.12 | | | Identify the diagnostic approach to FUO. | Explain the stepwise approach to diagnosing and investigating FUO. | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | Theory and Viva voce | Internal Medicine, Infectious Diseases |
| HomU G-PM I.2.13 | | | Discuss the differential diagnosis of FUO. | Explain how to differentiate between various causes of FUO. | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | Theory and Viva voce | Internal Medicine, Infectious Diseases |

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|------------------------|--|----|---|---|----|----|---------------------------------|---|----------------------|--|
| HomU G-PM I.2.14 | | | Describe the management strategies for FUO. | Explain the treatment options and approaches for patients with FUO. | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | Theory and Viva voce | Internal Medicine, Infectious Diseases |
| HomU G-PM I.2.15 | | K | Describe the fever totality. | Define how to erect a fever totality | C1 | MK | Lecture, Small group discussion | Tutorials, Assignments | | Organon, Repertory |
| HomU G-PM I.2.16 | | KH | Discuss the characteristic indications of various indicated drugs | List the PQRS symptoms of a drug in Fever | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | Theory & Viva voce | Materia Medica |

6.1.3. Neurological Symptoms-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority - | T-L Methods | Assessment | | Integration |
|-----------------------|----------------------|---------------|---|--|---------------------------------|------------|---------------------------------|---|-----------|--------------------------------|
| | | | | | | | | F | S | |
| HomU G-PM I.3.1 | K&S | K | Define the pathophysiology of neurological symptoms (e.g., weakness, numbness, tingling). | Explain the underlying mechanisms that lead to neurological symptoms. | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | MCQs | Anatomy, Physiology, Neurology |
| HomU G-PM I.3.2 | | KH | Describe the neuroanatomical basis of common neurological symptoms. | Explain how specific neurological structures are involved in producing symptoms such as weakness or sensory changes. | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | SAQ, MCQs | Anatomy, Physiology, Neurology |
| HomU G-PM I.3.3 | | | Discuss the pathophysiological processes underlying various neurological conditions. | Explain how different diseases and disorders affect the nervous system to produce specific symptoms. | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | SAQ, MCQs | Physiology, Pathology |

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|-----------------------|-----|----|--|--|----|----|---------------------------------|---|---------------------|-----------------------|
| HomU G-PM I.3.4 | | | Identify the role of neurotransmitters and receptors in neurological symptoms. | Explain how alterations in neurotransmission can lead to neurological symptoms. | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | SAQ, MCQs | Physiology, Pathology |
| HomU G-PM I.3.5 | K&S | KH | Define the principles of management for neurological symptoms. | Explain the basic approaches to managing common neurological symptoms. | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | SAQ, MCQs | Physiology |
| HomU G-PM I.3.6 | | K | Describe the complete symptom | Define the symptom under LSMC | C1 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | LAQ, SAQ, Viva voce | Organon |
| HomU G-PM I.3.7 | | S | Demonstrate the process of selecting a homoeopathic remedy for neurological symptoms based on totality of symptoms | Student should be able to demonstrate how to select a homoeopathic remedy based on the totality of symptoms in a case of neurological symptoms | P2 | MK | Lecture, Small group discussion | Assignments, Tutorials | SAQ, MCQs | Materia medica |

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|-----------------------|--|----|---|---|----|----|---------------------------------|---|----------------|----------------|
| HomU G-PM I.3.8 | | KH | Discuss the characteristic indications of various indicated drugs | List the PQRS symptoms of a drug in different Neurological symptoms | C1 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | SAQ, Viva voce | Materia medica |
|-----------------------|--|----|---|---|----|----|---------------------------------|---|----------------|----------------|

6.1.4. Circulatory and Respiratory Dysfunctions

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert 's Level | Priority - | T-L Methods | Assessment | | Integration |
|-----------------------|----------------------|---------------|-------------------------------------|--|----------------------------------|------------|---------------------------------|---|-----------|-------------|
| | | | | | | | | F | S | |
| HomU G-PM I.4.1 | K&S | K | Define dyspnea. | Define dyspnea as the sensation of difficult or uncomfortable breathing, often described as shortness of breath. | C1 | MK | Lecture, Small group discussion | Quizzes, Peer assessment | SAQ | Physiology |
| HomU G-PM I.4.2 | | KK | Describe the physiology of dyspnea. | Explain the physiological mechanisms that contribute to the sensation of dyspnea, including neural and mechanical factors. | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | SAQ, MCQs | Physiology |

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|-----------------------|--|----|--|--|----|----|---------------------------------|---|---|-----------------------|
| HomU G-PM I.4.3 | | | Discuss the etiology of dyspnea. | Explain the various conditions and diseases that can cause dyspnea, such as respiratory disorders, cardiovascular diseases, or metabolic conditions. | C2 | MK | Lecture, Small group discussion | Structured Oral Examination, Tutorials, Assignments, MCQs | SAQ, MCQs | Physiology, Pathology |
| HomU G-PM I.4.4 | | | Identify the clinical evaluation and diagnostic approach for patients presenting with dyspnea. | Explain the steps involved in assessing and diagnosing patients with dyspnea, including history taking, physical examination, and diagnostic tests. | C2 | MK | Lecture, Small group discussion | Observations, Simulations | OSCE, Bedside examination | Clinical Medicine |
| HomU G-PM I.4.5 | | K | Define cough. | Define cough as a protective reflex that helps clear the airways of mucus, irritants, or foreign particles. | C1 | MK | Lecture, Small group discussion | Quizzes, Peer assessment | Written examination, Objective Structured Clinical Examination (OSCE) | Clinical Medicine |
| HomU G-PM I.4.6 | | KH | Describe the physiology of cough. | Explain the neural and mechanical processes involved in the | C2 | MK | Lecture, Small group | Case studies, Role-playing | OSCE, Practical examination | Clinical Medicine |

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|------------------------|-----|---|---|---|----|----|---------------------------------|-------------------------------|--|-----------------------|
| | | | | generation of a cough reflex. | | | discussion | | | |
| HomU G-PM I.4.7 | | | Discuss the different types of cough. | Explain the characteristics and classification of cough, such as acute, subacute, or chronic. | C2 | MK | Lecture, Small group discussion | Problem-based learning | MCQs, Short-answer questions | Pathology |
| HomU G-PM I.4.8 | | | Identify the common causes of cough. | Describe the etiology and pathophysiology of cough, including respiratory infections, asthma, and GERD. | C2 | MK | Lecture, Small group discussion | Presentations, Group projects | Written examination, Case-based discussion | Physiology, Pathology |
| HomU G-PM I.4.9 | K&S | | Describe the characteristics of different types of cough. | Explain the differences between dry, wet, productive, and non-productive coughs, and their potential underlying causes. | C2 | MK | Lecture, Small group discussion | Quizzes, Peer assessment | Written examination, OSCE | |
| HomU G-PM I.4.10 | | K | Define hemoptysis. | Define hemoptysis as the expectoration of blood that originates from the respiratory tract. | C2 | MK | Lecture, Small group discussion | Quizzes, Peer assessment | Written examination, OSCE | Pathology |

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|------------------------|-----|----|--|--|----|----|---------------------------------|-------------------------------------|------------------------------|-----------|
| HomU G-PM I.4.11 | | KH | Describe the etiology of hemoptysis. | Explain the various causes of hemoptysis, including respiratory infections, pulmonary embolism, and lung cancer. | C2 | MK | Lecture, Small group discussion | Case studies, Role-playing | OSCE, Practical examination | Pathology |
| HomU G-PM I.4.12 | | | Discuss the clinical evaluation and diagnostic approach for patients presenting with hemoptysis. | Explain the steps involved in evaluating patients with hemoptysis, including history taking, physical examination, and diagnostic tests. | C2 | MK | Lecture, Small group discussion | Observations, Simulations | OSCE, Practical examination | Pathology |
| HomU G-PM I.4.13 | K&S | | Discuss the complications associated with hemoptysis. | Explain the potential complications of hemoptysis, such as respiratory compromise or hemorrhagic shock, and their management. | C2 | MK | Lecture, Small group discussion | Problem-based learning, Assignments | MCQs, Short-answer questions | Pathology |

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|------------------------|--|----|---|--|----|----|---------------------------------|--------------|---|---|
| HomU G-PM I.4.14 | | K | Define hypoxia and cyanosis. | Define hypoxia as a condition characterized by insufficient oxygen supply to tissues and cyanosis as a bluish discoloration of the skin and mucous membranes due to deoxygenated hemoglobin. | C1 | MK | Lecture, Small group discussion | Quizzes | Written examination, Objective Structured Clinical Examination (OSCE) | Pulmonology, Cardiology, Critical Care Medicine |
| HomU G-PM I.4.15 | | KH | Describe the pathophysiology of hypoxia and cyanosis. | Explain the mechanisms that lead to hypoxia and cyanosis, including impaired oxygen delivery or utilization. | C2 | MK | Lecture, Small group discussion | Case studies | OSCE, Practical examination | Pulmonology, Cardiology, Critical Care Medicine |
| HomU G-PM I.4.16 | | | Discuss the common causes of hypoxia and cyanosis. | Explain the various conditions and diseases that can manifest with hypoxia and cyanosis, such as respiratory disorders, cardiac conditions, or anemia. | C2 | MK | Lecture, Small group discussion | Case studies | MCQs, Short-answer questions | Pulmonology, Cardiology, Critical Care Medicine |

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|------------------------|----|----|--|---|----|----|---------------------------------|---------------------------|-----------------------------|---|
| HomU G-PM I.4.17 | PC | | Discuss the clinical evaluation and diagnostic approach for patients presenting with hypoxia and cyanosis. | Explain the steps involved in evaluating patients with hypoxia and cyanosis, including history taking, physical examination, and diagnostic tests. | C2 | MK | Lecture, Small group discussion | Tutorials, Group projects | OSCE, Practical examination | Pulmonology, Cardiology, Critical Care Medicine |
| HomU G-PM I.4.18 | | K | Define edema. | Define edema as the accumulation of excessive fluid in the interstitial spaces, leading to swelling and tissue enlargement. | C1 | MK | Lecture, Small group discussion | Quizzes, Peer assessment | SAQ | Cardiology, Nephrology, Internal Medicine |
| HomU G-PM I.4.19 | | KH | Describe the pathophysiology of edema. | Explain the mechanisms involved in the development of edema, including changes in hydrostatic pressure, oncotic pressure, and capillary permeability. | C2 | MK | Lecture, Small group discussion | Case studies, MCQs | LAQ, SAQ | Cardiology, Nephrology, Internal Medicine |

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|------------------------|--|--|---|--|----|----|---------------------------------|--|----------------|---|
| HomU G-PM I.4.20 | | | Discuss the causes and classification of edema. | Explain the various factors that can lead to edema, such as heart failure, kidney disease, liver cirrhosis, and venous insufficiency. Classify edema based on its location and underlying cause. | C2 | MK | Lecture, Small group discussion | Problem-based learning | MCQs, SAQ, LAQ | Cardiology, Nephrology, Internal Medicine |
| HomU G-PM I.4.21 | | | Describe the pathophysiology of edema. | Explain the mechanisms that lead to the accumulation of fluid in tissues, including increased capillary permeability and impaired lymphatic drainage. | C2 | MK | Lecture, Small group discussion | Tutorials, Assignments | SAQ, LAQ | Cardiology, Nephrology, Internal Medicine |
| HomU G-PM I.4.22 | | | Identify the clinical features of edema. | Describe the signs and symptoms associated with edema, including swelling, pitting, and changes in skin texture. | C2 | MK | Lecture, Small group discussion | Presentations, Group projects, Assignments | SAQ, LAQ | Cardiology, Nephrology, Internal Medicine |

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|------------------------|--|----|---|---|----|----|---------------------------------|------------------------------|------------------------------|-------------------------------|
| HomU G-PM I.4.23 | | K | Define palpitations. | Define palpitations as the sensation of a rapid, irregular, or forceful heartbeat that may be felt in the chest, throat, or neck. | C1 | MK | Lecture, Small group discussion | Quizzes | SAQ | Cardiology, Internal Medicine |
| HomU G-PM I.4.24 | | KH | Describe the pathophysiology of palpitations. | Explain the mechanisms that can lead to palpitations, including cardiac arrhythmias, structural heart disease, and stimulant use. | C2 | MK | Lecture, Small group discussion | Assignments | SAQ, MCQs | Cardiology, Internal Medicine |
| HomU G-PM I.4.25 | | | Discuss the common causes of palpitations. | Explain the various conditions and factors that can cause palpitations, such as atrial fibrillation, ventricular tachycardia, anxiety, and caffeine intake. | C2 | MK | Lecture, Small group discussion | Tutorials, Assignments, MCQs | MCQs, Short-answer questions | Cardiology, Internal Medicine |

| | | | | | | | | | | |
|------------------------|--|----|--|--|----|----|---------------------------------|------------------------------|------------------------------|--|
| HomU G-PM I.4.26 | | | Identify the clinical features of palpitations. | Describe the signs and symptoms associated with palpitations, including palpitations at rest, palpitations with exertion, and associated dizziness or syncope. | C2 | MK | Lecture, Small group discussion | Tutorials, Assignments, MCQs | MCQs, Short-answer questions | Cardiology, Internal Medicine |
| HomU G-PM I.4.27 | | K | Define the principles of homoeopathic management | Students should be able to define the basic principles of homoeopathic treatment | C1 | MK | Lecture, Group discussion | Quiz, Assignments | SAQ | Homoeopathic Materia Medica |
| HomU G-PM I.4.28 | | KH | Describe the concept of the simillimum in homoeopathy | Students should be able to describe how the selection of the simillimum is based on the totality of symptoms in homoeopathic treatment | C2 | MK | Lecture, Group discussion | Quiz, Assignments | SAQ | Homoeopathic Materia Medica |
| HomU G-PM I.4.29 | | SH | Demonstrate the process of selecting a homoeopathic remedy based | Students should be able to demonstrate how to select a homoeopathic remedy based on | C4 | MK | Case studies | Quiz, Assignments | SAQ | Homoeopathic Materia Medica, Repertory |

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|------------------------|--|----|--|---|----|----|---------------------------|-------------------|-----|-----------------------------|
| | | | on totality of symptoms | the totality of symptoms | | | | | | |
| HomU G-PM I.4.30 | | KH | Explain the principles of case management in homoeopathy | Students should be able to discuss the principles of case management, including the importance of follow-up and potency selection | C5 | MK | Lecture, Group discussion | Quiz, Assignments | LAQ | Homoeopathic Materia Medica |

6.1.5. Abdominal/GIT Dysfunctions

| Sl.No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority - | T-L Methods | Assessment | | Integration |
|-----------------------|----------------------|---------------|--|--|---------------------------------|------------|---------------------------------|--------------------------|----------|------------------------------|
| | | | | | | | | F | S | |
| HomU G-PM I.5.1 | K&S | KH | Describe the common causes of GIT dysfunctions. | Explain how factors such as diet, lifestyle, stress, and genetics can contribute to the development of GIT dysfunctions. | C2 | MK | Lecture, Small group discussion | Quizzes, Peer assessment | SAQ | Pathology, Microbiology, PSM |
| HomU G-PM I.5.2 | | | Discuss the pathophysiologic mechanisms underlying GIT dysfunctions. | Explain how disturbances in gastrointestinal motility, secretion, and | C2 | MK | Lecture, Small group discussion | Case studies, MCQ | LAQ, SAQ | Physiology, Pathology |

| | | | | | | | | | | |
|-----------------------|--|--|---|--|----|----|---------------------------------|---------------------------|------------------------------|-------------------------|
| | | | | absorption can lead to symptoms of GIT dysfunctions. | | | | | | |
| HomU G-PM I.5.3 | | | Identify the risk factors associated with GIT dysfunctions. | Describe how factors such as age, gender, diet, and medication use can increase the risk of developing GIT dysfunctions. | C2 | DK | Lecture, Small group discussion | Problem-based learning | MCQs, Short-answer questions | Physiology, Pathology |
| HomU G-PM I.5.4 | | | Explain the role of inflammation in GIT dysfunctions. | Describe how inflammatory processes can contribute to conditions such as gastritis, enteritis, and colitis. | C2 | MK | Lecture, Small group discussion | MCQ, Assignments | SAQ | Pathology, Microbiology |
| HomU G-PM I.5.5 | | | Discuss the role of the microbiome in GIT health. | Explain how alterations in the gut microbiome can impact GIT function and contribute to the development of GIT dysfunctions. | C2 | DK | Lecture, Small group discussion | Tutorials, Group projects | LAQ, SAQ | Physiology, Pathology |

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| HomU G-PM I.5.6 | | | Describe the pathophysiology of dysphagia. | Explain how dysphagia can result from structural abnormalities, neurological disorders, or muscular dysfunction. | C2 | MK | Lecture, Small group discussion | Quizzes, Peer assessment | LAQ, SAQ | Physiology, Pathology |
| HomU G-PM I.5.7 | | | Discuss the common causes of dysphagia. | Explain how conditions such as esophageal strictures, achalasia, and neurological diseases can lead to dysphagia. | C2 | MK | Lecture, Small group discussion | Case studies | SSQ | Pathology |
| HomU G-PM I.5.8 | | | Identify the key symptoms and clinical features of dysphagia. | Describe how symptoms such as difficulty swallowing, pain with swallowing, and regurgitation can help diagnose dysphagia. | C2 | MK | Lecture, Small group discussion | Problem-based learning | MCQs, Short-answer questions | Clinical medicine |

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| HomU G-PM I.5.9 | HO | | Discuss the role of homoeopathic remedies in the management of dysphagia. | Explain how remedies such as Lachesis, Phosphorus, and Belladonna can be used to treat symptoms of dysphagia. | C2 | MK | Lecture, Small group discussion | Assignments | MCQs, Short-answer questions | Homoeopathic Materia Medica |
| HomU G-PM I.5.11 | | | Describe the pathophysiology of nausea and vomiting. | Explain how various triggers, such as chemical stimulation, sensory input, and central nervous system disorders, can lead to nausea and vomiting. | C2 | MK | Lecture, Small group discussion | Quizzes, Peer assessment | MCQs, Short-answer questions | Physiology, Pathology |
| HomU G-PM I.5.12 | | | Discuss the common causes of nausea and vomiting. | Explain how conditions such as gastroenteritis, motion sickness, and pregnancy can cause nausea and vomiting. | C2 | MK | Lecture, Small group discussion | Case studies | MCQs, Short-answer questions | Physiology, Pathology |

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| HomU G-PM I.5.13 | | | Identify the key symptoms and clinical features of nausea and vomiting. | Describe how symptoms such as retching, hypersalivation, and pallor can help diagnose nausea and vomiting. | C2 | MK | Lecture, Small group discussion | Case studies | MCQs, Short-answer questions | Clinical medicine |
| HomU G-PM I.5.14 | HO | | Discuss the role of homoeopathic remedies in the management of nausea and vomiting. | Explain how remedies such as Ipecacuanha, Nux vomica, and Coccus indicus can be used to treat symptoms of nausea and vomiting. | C2 | MK | Lecture, Small group discussion | Observations, Assignments | MCQs, Short-answer questions | Homoeopathic Materia Medica |
| HomU G-PM I.5.15 | K&S | | Describe the importance of hydration and dietary modifications in the management of nausea and vomiting. | Explain how maintaining hydration and following a bland diet can help alleviate symptoms of nausea and vomiting. | C2 | DK | Lecture, Small group discussion | Tutorials, Group projects | MCQs, Short-answer questions | Physiology |

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| HomU G-PM I.5.16 | | | Define diarrhea and its characteristics. | Define diarrhea as the passage of loose or watery stools three or more times a day, often accompanied by abdominal cramping, bloating, and urgency. | C1 | MK | Lecture, Small group discussion | MCQ | SAQ | Physiology |
| HomU G-PM I.5.17 | | | Describe the pathophysiology of diarrhea. | Explain how disturbances in gastrointestinal motility, secretion, and absorption can lead to diarrhea. | C2 | MK | Lecture, Small group discussion | MCQ, Assignments | LAQ, SAQ | Physiology. Pathology |
| HomU G-PM I.5.18 | | | Discuss the common causes of diarrhea. | Explain how infections, dietary factors, medications, and stress can contribute to the development of diarrhea. | C2 | MK | Lecture, Small group discussion | Case studies | SAQ | Pathology, Microbiology |
| HomU G-PM I.5.19 | | | Identify the key symptoms and clinical features of diarrhea. | Describe how symptoms such as loose stools, abdominal cramping, and | C2 | MK | Lecture, Small group | SAQ, LAQ | LAQ, SAQ | Clinical medicine |

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| | | | | dehydration can help diagnose diarrhea. | | | discussion | | | |
| HomU G-PM I.5.20 | HO | | Discuss the role of homoeopathic remedies in the management of diarrhea. | Explain how remedies such as Podophyllum, Arsenicum album, and Chamomilla can be used to treat symptoms of diarrhea. | C2 | MK | Lecture, Small group discussion | Assignments, MCQ | MCQs, Short-answer questions | Homoeopathic Materia Medica |
| HomU G-PM I.5.21 | K&S | | Describe the importance of fluid and electrolyte management in the management of diarrhea. | Explain how maintaining hydration and electrolyte balance is crucial in the treatment of diarrhea. | C2 | MK | Lecture, Small group discussion | Tutorials, Group projects | LAQ, SAQ | Physiology |
| HomU G-PM I.5.22 | | | Define constipation and its characteristics. | Define constipation as infrequent bowel movements or difficulty passing stools, often associated with hard, dry stools and straining. | C1 | MK | Lecture, Small group discussion | Quizzes, Peer assessment | SAQ | Physiology |

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| HomU G-PM I.5.23 | | | Describe the pathophysiology of constipation. | Explain how factors such as slow colonic transit, pelvic floor dysfunction, and lifestyle factors can contribute to constipation. | C2 | MK | Lecture, Small group discussion | Tutorials, Group projects | LAQ, SAQ | Physiology |
| HomU G-PM I.5.24 | | | Discuss the common causes of constipation. | Explain how factors such as inadequate dietary fiber, dehydration, sedentary lifestyle, and certain medications can cause constipation. | C2 | MK | Lecture, Small group discussion | Tutorials, Assignments | MCQs, Short-answer questions | Physiology |
| HomU G-PM I.5.25 | | | Identify the key symptoms and clinical features of constipation. | Describe how symptoms such as straining, lumpy or hard stools, and a feeling of incomplete evacuation can help diagnose constipation. | C2 | MK | Lecture, Small group discussion | MCQ, Assignments | MCQs, Short-answer questions | Clinical medicine |

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| HomU G-PM I.5.26 | HO | | Discuss the role of homoeopathic remedies in the management of constipation. | Explain how remedies such as Bryonia, Nuxvomica, and Lycopodium can be used to treat symptoms of constipation. | C2 | MK | Lecture, Small group discussion | Observations | MCQs, Short-answer questions | Homoeopathic Materia Medica |
| HomU G-PM I.5.27 | K&S | | Describe the importance of lifestyle modifications in the management of constipation. | Explain how dietary changes, increased physical activity, and regular bowel habits can help alleviate constipation. | C2 | DK | Lecture, Small group discussion | Tutorials, Assignments | LAQ, SAQ | Physiology |
| HomU G-PM I.5.28 | | | Define dysentery and its characteristics. | Define dysentery as a type of diarrhea that contains blood or mucus, often accompanied by abdominal pain and fever. | C2 | MK | Lecture, Small group discussion | Quizzes, Peer assessment | SAQ | Physiology |
| HomU G-PM I.5.29 | | | Describe the pathophysiology of dysentery. | Explain how infections, particularly bacterial and parasitic, can lead to | C2 | MK | Lecture, Small group discussion | Tutorials, Assignments | LAQ, SAQ | Pathology |

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| | | | | inflammation of the intestines and the characteristic symptoms of dysentery. | | | | | | |
| HomU G-PM I.5.30 | | | Discuss the common causes of dysentery. | Explain how pathogens such as Shigella, Salmonella, and Entamoeba histolytica can cause dysentery. | C2 | MK | Lecture, Small group discussion | Case studies | SAQ | Pathology |
| HomU G-PM I.5.31 | | | Identify the key symptoms and clinical features of dysentery. | Describe how symptoms such as bloody diarrhea, abdominal cramps, and tenesmus can help diagnose dysentery. | C2 | MK | Lecture, Small group discussion | Problem-based learning | MCQs, Short-answer questions | Clinical medicine |
| HomU G-PM I.5.32 | HO | | Discuss the role of homoeopathic remedies in the management of dysentery. | Explain how remedies such as Merc sol, Aloe socotrina, and Podophyllum can be used to treat symptoms of dysentery. | C2 | MK | Lecture, Small group discussion | Observations | MCQs, Short-answer questions | Homoeopathic Materia Medica |

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| HomU G-PM I.5.33 | K&S | | Describe the importance of hydration and electrolyte management in the management of dysentery. | Explain how maintaining hydration and electrolyte balance is crucial in the treatment of dysentery. | C2 | MK | Lecture, Small group discussion | Tutorials, Assignments | LAQ, SAQ | Physiology |
| HomU G-PM I.5.34 | | | Define unintentional weight loss and its significance. | Define unintentional weight loss as a decrease in body weight that occurs without purposeful dieting or exercise, often indicating an underlying health issue. | C1 | MK | Lecture, Small group discussion | Quizzes, Peer assessment | SAQ | Physiology |
| HomU G-PM I.5.35 | | | Describe the pathophysiology of unintentional weight loss. | Explain how various factors, such as increased metabolism, reduced nutrient absorption, and chronic inflammation, can lead to unintentional weight loss. | C2 | MK | Lecture, Small group discussion | Tutorials, Assignments | LAQ, SAQ, MCQ | Physiology |

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| HomU G-PM I.5.36 | | | Discuss the common causes of unintentional weight loss. | Explain how conditions such as cancer, gastrointestinal disorders, hyperthyroidism, and depression can cause unintentional weight loss. | C2 | MK | Lecture, Small group discussion | Case studies | SAQ | Physiology, Pathology |
| HomU G-PM I.5.37 | | | Identify the key symptoms and clinical features associated with unintentional weight loss. | Describe how symptoms such as fatigue, weakness, and changes in appetite can help diagnose unintentional weight loss. | C2 | MK | Lecture, Small group discussion | Problem-based learning | MCQs, Short-answer questions | Clinical medicine |
| HomU G-PM I.5.38 | HO | | Discuss the role of homoeopathic remedies in the management of unintentional weight loss. | Explain how remedies such as Calcarea carbonica, Natrum muriaticum, and Phosphorus can be used to address underlying causes of unintentional weight loss. | C2 | MK | Lecture, Small group discussion | Assignments | MCQs, Short-answer questions | Homoeopathic Materia Medica |

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| HomU G-PM I.5.39 | K&S | | Describe the importance of a comprehensive evaluation in the management of unintentional weight loss. | Explain how assessing medical history, conducting physical examinations, and performing diagnostic tests are essential in identifying the cause of unintentional weight loss. | C2 | DK | Lecture, Small group discussion | Tutorials, Assignments | LAQ, SAQ | Clinical medicine |
| HomU G-PM I.5.40 | | | Describe the pathophysiology of gastrointestinal bleeding | Explain the mechanisms by which various conditions, such as peptic ulcers, esophageal varices, and inflammatory bowel disease, can lead to GI bleeding. | C2 | MK | Lecture, Small group discussion | Tutorials, Assignments | LAQ, SAQ | Pathology |
| HomU G-PM I.5.41 | | | Discuss the risk factors associated with GI bleeding | Identify and explain the risk factors, such as NSAID use, alcohol consumption, and coagulopathy, | C2 | MK | Lecture, Small group discussion | Case studies | MCQs, Short-answer questions | Physiology, Pathology |

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| | | | | that can predispose individuals to GI bleeding. | | | | | | |
| HomU G-PM I.5.42 | | | Explain the clinical presentation of GI bleeding | Describe the signs and symptoms, such as hematemesis, melena, and hematochezia, that are indicative of GI bleeding. | C2 | MK | Lecture, Small group discussion | Problem-based learning | MCQs, Short-answer questions | Clinical medicine |
| HomU G-PM I.5.43 | HO | | Describe the common homoeopathic remedies used in the management of GI bleeding | Explain the indications for remedies such as Phosphorus, Hamamelis, and Ferrummetallicum in treating various causes of GI bleeding. | C2 | MK | Lecture, Small group discussion | Case studies | MCQs, Short-answer questions | Homoeopathic Tteria Medica |
| HomU G-PM I.5.44 | | | Explain the concept of miasmatic prescribing in homeopathy | Describe how miasmatic factors are considered in chronic cases of GI bleeding for long-term management. | C2 | DK | Lecture, Small group discussion | Observations, Simulations | SAQ | Organon |

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| HomU G-PM I.5.45 | | | Define jaundice and its clinical significance | Define jaundice as the yellow discoloration of the skin and mucous membranes due to elevated bilirubin levels and explain its importance in clinical diagnosis. | C1 | MK | Lecture, Small group discussion | Quizzes, Peer assessment | SAQ | Physiology, Pathology |
| HomU G-PM I.5.46 | | | Describe the pathophysiology of jaundice | Explain the mechanisms of hyperbilirubinaemia, including hemolysis, hepatocellular dysfunction, and biliary obstruction, leading to jaundice. | C2 | MK | Lecture, Small group discussion | Case studies, Role-playing | LAQ, SAQ | Physiology, Surgery |
| HomU G-PM I.5.47 | | | Discuss the causes of jaundice | Identify and explain the various etiologies of jaundice, including viral hepatitis, alcoholic liver disease, and biliary tract obstruction. | C2 | MK | Lecture, Small group discussion | Problem-based learning | MCQs, Short-answer questions | Physiology, Surgery |

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| HomU G-PM I.5.48 | | | Explain the clinical features of jaundice | Describe the signs and symptoms of jaundice, such as yellowing of the skin, dark urine, and pale stools, and their significance in diagnosis. | C2 | MK | Lecture, Small group discussion | Observations, Simulations | MCQs, Short-answer questions | Clinical medicine |
| HomU G-PM I.5.49 | HO | | Describe the common homoeopathic remedies used in the management of jaundice | Explain the indications for remedies such as Chelidonium, Lycopodium, and Natrum sulphuricum in treating jaundice. | C2 | MK | Lecture, Small group discussion | Case studies, Role-playing | MCQs, Short-answer questions | Homoeopathic Tertia Medica |
| HomU G-PM I.5.50 | K&S | | Define ascites and its clinical significance | Define ascites as the abnormal accumulation of fluid in the peritoneal cavity and its importance in clinical diagnosis. | C1 | MK | Lecture, Small group discussion | Quizzes, Peer assessment | SAQ | Anatomy, Physiology |

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| HomU G-PM I.5.51 | | | Describe the pathophysiology of ascites | Explain the mechanisms of fluid accumulation in ascites, including portal hypertension, hypoalbuminemia, and lymphatic obstruction. | C2 | MK | Lecture, Small group discussion | Case studies, Role-playing | LAQ, SAQ | Physiology, Pathology |
| HomU G-PM I.5.52 | | | Discuss the causes of ascites | Identify the various etiologies of ascites, including liver cirrhosis, heart failure, and malignancy. | C2 | MK | Lecture, Small group discussion | Problem-based learning | MCQs, Short-answer questions | Pathology |
| HomU G-PM I.5.53 | | | Explain the clinical features of ascites | Describe the signs and symptoms of ascites, such as abdominal distension and shifting dullness, and their significance in diagnosis. | C2 | MK | Lecture, Small group discussion | Observations, Simulations | LAQ, SAQ | Surgery, Clinical Medicine |

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| HomU G-PM I.5.54 | | | Differentiate between transudative and exudative ascites | Define transudative and exudative ascites and the pathophysiological differences between them. | C1 | MK | Lecture, Small group discussion | Quizzes, Peer assessment | SAQ | Pathology |
| HomU G-PM I.5.55 | | | Discuss the classification of ascites based on the underlying cause | Explain the categorization of ascites as cirrhotic, cardiac, malignant, and tuberculous based on the underlying disease process. | C2 | MK | Lecture, Small group discussion | #NAME? | MCQs, Short-answer questions | Pathology |
| HomU G-PM I.5.56 | | | Describe the grading of ascites based on severity | Explain the use of imaging modalities, such as ultrasound, in grading ascites from mild to severe based on fluid accumulation. | C2 | MK | Lecture, Small group discussion | Problem-based learning | MCQs, Short-answer questions | Pathology, Surgery |
| HomU G-PM I.5.57 | | | Explain the role of ascitic fluid analysis in diagnosis | Describe the use of ascitic fluid analysis, including cell count, albumin gradient, and | C2 | MK | Lecture, Small group discussion | Presentations, Group projects | SAQ | Physiology, Laboratory Medicine |

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| | | | | culture, in diagnosing the cause of ascites. | | | | | | |
| HomU G-PM I.5.58 | HO | | Describe the common homoeopathic remedies used in the management of ascites | Explain the indications for remedies such as Apis mellifica, Lycopodium, and Carduus marianus in treating ascites. | C2 | MK | Lecture, Small group discussi on | Case studies, | MCQs, Short- answer questions | Homoeopathic Materia Medica |

6.1.6. Renal and Urinary Tract Dysfunctions

| Sl. No. | Domain of Compet ency | Millers Level | Content | SLO | Blooms Domai n/ Guilbe rt's Level | Priori ty | T-L Metho ds | Assessment | | Integration |
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| HomU G-PM I.6.1 | K&S | K | Define the terms "renal dysfunction" and "urinary tract dysfunction" | Students should be able to define these terms and differentiate between dysfunction of the kidneys and the urinary tract | C1 | MK | Lecture , Group discuss ion | MCQ, Written test | SAQ | Anatomy, Pathology |

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| HomU G-PM I.6.2 | | | Identify the various causes of renal dysfunction | Students should be able to list the factors that can lead to dysfunction of the kidneys | C1 | MK | Lecture , Group discussion | MCQ, Written test | SAQ | Medicine, Pathology |
| HomU G-PM I.6.3 | | | Identify the various causes of urinary tract dysfunction | Students should be able to list the factors that can lead to dysfunction of the urinary tract | C1 | MK | Lecture , Group discussion | MCQ, Written test | SAQ | Medicine, Pathology |
| HomU G-PM I.6.4 | | KH | Describe the underlying pathophysiology of renal dysfunction | Students should be able to describe the pathophysiological processes involved in renal dysfunction | C2 | NK | Lecture , Group discussion | MCQ, Written test | SAQ | Physiology, Pathology |
| HomU G-PM I.6.5 | | K | Define the terms "cystitis" and "bladder pain syndrome" | Students should be able to define these terms and differentiate between them | C1 | MK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Pathology, Surgery |
| HomU G-PM I.6.6 | | | Describe the symptoms and clinical presentation of cystitis/bladder pain syndrome | Students should be able to list the common symptoms associated with cystitis and bladder pain syndrome | C1 | MK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Surgery, Urology |

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| HomU G-PM I.6.7 | HO | KH | Discuss the causes and risk factors associated with cystitis/bladder pain syndrome | Students should be able to discuss the various factors that can lead to the development of cystitis and bladder pain syndrome | C2 | NK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Pathology, Urology |
| HomU G-PM I.6.8 | | | Describe the principles of homoeopathic management for cystitis/bladder pain syndrome | Students should be able to describe the basic principles of homoeopathic treatment for cystitis and bladder pain syndrome | C2 | MK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Homoeopathic Materia Medica |
| HomU G-PM I.6.9 | | SH | Demonstrate the process of selecting a homoeopathic remedy for cystitis/bladder pain syndrome based on the totality of symptoms | Students should be able to demonstrate how to select a homoeopathic remedy for a case of cystitis/bladder pain syndrome | P2 | MK | Role-playing , Simulation | MCQ, Written test | SAQ, MCQ | Homoeopathic Materia Medica |

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| HomU G-PM I.6.10 | K&S | K | Define the term "dysuria" and differentiate it from other urinary symptoms | Students should be able to define dysuria with its characteristic features | C1 | MK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Physiology, Urology |
| HomU G-PM I.6.11 | | | Describe the various causes of dysuria | Students should be able to list the factors that can lead to the development of dysuria | C1 | MK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Pathology, Urology |
| HomU G-PM I.6.12 | | KH | Explain the underlying pathophysiology of dysuria | Students should be able to explain the pathological processes that cause dysuria | C2 | NK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Physiology, Pathology |
| HomU G-PM I.6.13 | | | Discuss the clinical features and presentation of dysuria | Students should be able to describe the common symptoms and signs associated with dysuria | C2 | MK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Surgery, Pathology |
| HomU G-PM I.6.14 | HO | | Explain the principles of homoeopathic management for dysuria | Students should be able to describe the basic principles of homoeopathic treatment for dysuria | C2 | MK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Homoeopathic Materia Medica |

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| HomU G-PM I.6.15 | | | Demonstrate the process of selecting a homoeopathic remedy for dysuria based on the totality of symptoms | Students should be able to demonstrate how to select a homoeopathic remedy for a case of dysuria | P2 | MK | Role-playing, Simulation | MCQ, Written test | SAQ, MCQ | Homoeopathic Materia Medica |
| HomU G-PM I.6.16 | K&S | K | Define the term "azotemia" and explain its significance | Students should be able to 1.defineazotemia and 2. understand its clinical implications | C1 | MK | Lecture, Group discussion | MCQ, Written test | SAQ, MCQ | Physiology, Pathology, Nephrology |
| HomU G-PM I.6.17 | | | Describe the various causes and mechanisms leading to the development of azotemia | Students should be able to list the factors that can lead to the development of azotemia | C1 | MK | Lecture, Group discussion | MCQ, Written test | SAQ, MCQ | Pathology, Nephrology |
| HomU G-PM I.6.18 | | KH | Explain the underlying pathophysiologic al processes involved in the development of azotemia | Students should be able to explain the pathological processes that lead to elevated blood urea nitrogen (BUN) and creatinine levels in azotemia | C2 | NK | Lecture, Group discussion | MCQ, Written test | SAQ, MCQ | Physiology, Pathology, Nephrology |

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| HomU G-PM I.6.19 | | | Discuss the clinical presentation and signs associated with azotemia | Students should be able to describe the common clinical manifestations of azotemia | C2 | MK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Nephrology |
| HomU G-PM I.6.20 | | | Discuss the diagnostic tests and procedures used to evaluate and diagnose azotemia | Students should be able to discuss the clinical investigations used to evaluate azotemia | C2 | NK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Laboratory Medicine, Nephrology |
| HomU G-PM I.6.21 | HO | | Explain the principles of homoeopathic management for azotemia | Students should be able to describe the basic principles of homoeopathic treatment for azotemia | C2 | MK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Homoeopathic Materia Medica |
| HomU G-PM I.6.22 | | | Demonstrate the process of selecting a homoeopathic remedy for azotemia based on the totality of symptoms | Students should be able to demonstrate how to select a homoeopathic remedy for a case of azotemia | P2 | MK | Role-playing , Simulation | MCQ, Written test | SAQ, MCQ | Homoeopathic Materia Medica |
| KHom UG-PM I.6.23 | | K | Define the terms "fluid imbalance" and "electrolyte imbalance" | Students should be able to define these terms | C1 | MK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Physiology |

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| HomU G-PM I.6.24 | | | Describe the various causes and factors contributing to fluid and electrolyte imbalances | Students should be able to list the factors that lead to the development of fluid and electrolyte imbalances | C1 | MK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Medicine, Physiology |
| HomU G-PM I.6.25 | | KH | Explain the underlying pathophysiological processes involved in the development of fluid and electrolyte imbalances | Students should be able to explain the pathological mechanisms that lead to fluid and electrolyte imbalance | C2 | NK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Physiology, Pathology |
| HomU G-PM I.6.26 | | | Discuss the clinical signs and symptoms associated with fluid and electrolyte imbalances | Students should be able to describe the common clinical manifestations seen in patients with fluid and electrolyte imbalances | C2 | MK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Physiology |
| HomU G-PM I.6.27 | | | Identify the various risk factors that predispose individuals to the development of | Students should be able to discuss the factors that influence the fluid and | C2 | NK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Physiology, Pathology |

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| | | | fluid and electrolyte imbalances | electrolyte imbalances | | | | | | |
| HomU G-PM I.6.28 | HO | | Explain the principles of homoeopathic management for fluid and electrolyte imbalances | Students should be able to describe the basic principles of homoeopathic treatment for fluid and electrolyte imbalances | C2 | MK | Lecture , Group discussion | MCQ, Written test | SAQ, MCQ | Homoeopathic Materia Medica |
| HomU G-PM I.6.29 | | | Demonstrate the process of selecting a homoeopathic remedy for fluid and electrolyte imbalance based on symptoms | Students should be able to demonstrate how to select a homoeopathic remedy in case of fluid and electrolyte imbalance | P2 | MK | Role-playing , Simulation | MCQ, Written test | SAQ, MCQ | Homoeopathic Materia Medica |
| HomU G-PM I.6.30 | K&S | | Discuss the impact of lifestyle factors such as diet and fluid intake on fluid and electrolyte balance | Students should be able to discuss how lifestyle changes can help manage fluid and electrolyte imbalances | C2 | NK | Lecture , Group discussion | MCQ, Written test | LAQ, SAQ, MCQ | Nutrition, Lifestyle Medicine |

6.1.7. Hematological alterations-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|-----------------------|----------------------|---------------|---|---|---------------------------------|----------|---------------------------|--------------------|----------|-----------------------|
| | | | | | | | | F | S | |
| HomU G-PM I.7.1 | K&S | K | Define the terminologies used. | Students should be able to define following hematological alterations with their characteristics | C1 | MK | Lecture, Group discussion | Quiz, Written test | MCQ, SAQ | Physiology, Pathology |
| 7.1a | | | | 1. Anemia, | | | | | | |
| 7.1a | | | | 2. Leukocytosis, | | | | | | |
| 7.1a | | | | 3. Leucopenia, | | | | | | |
| 7.1a | | | | 4. Bleeding diatheses | | | | | | |
| HomU G-PM I.7.2 | | KH | Identify the various risk factors that predispose individuals to the development of hematological alterations | Students should be able to discuss the factors that increase the likelihood of developing the above hematological alterations | C2 | MK | Lecture, Group discussion | Quiz, Written test | MCQ, SAQ | Physiology, Pathology |

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|-----------------------|--|--|--|---|----|----|---------------------------|---------------------------------|---------------|-----------------------|
| HomU G-PM I.7.3 | | | Explain the underlying pathophysiological processes involved in the development of hematological alterations | Students should be able to explain the pathological mechanisms that lead to the following hematological disorders | C2 | MK | Lecture, Group discussion | Quiz, Assignments, Written test | MCQ, SAQ | Physiology, Pathology |
| 7.3a | | | | 1. Anemia, | | | | | | |
| 7.3a | | | | 2. Leukocytosis, | | | | | | |
| 7.3a | | | | 3. Leucopenia, | | | | | | |
| 7.3a | | | | 4. Bleeding diatheses | | | | | | |
| HomU G-PM I.7.4 | | | Discuss the common signs and symptoms associated with hematological alterations | Students should be able to describe the typical clinical manifestations observed in patients with following hematological disorders | C2 | MK | Lecture, Group discussion | Quiz, Assignments, Written test | MCQ, LAQ, SAQ | Pathology, Hematology |
| 7.4a | | | | 1. Anemia, | | | | | | |
| 7.4a | | | | 2. Leukocytosis, | | | | | | |
| 7.4a | | | | 3. Leucopenia, | | | | | | |
| 7.4a | | | | 4. Bleeding diatheses | | | | | | |

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|-----------------------|--|----|--|--|----|----|------------------------------|---------------------------------|----------|--|
| HomU G-PM I.7.5 | | | Discuss the diagnostic tests and procedures used to evaluate and diagnose hematological alterations | Students should be able to discuss the various tests and procedures used to evaluate hematological disorders | C2 | MK | Lecture, Group discussion | Quiz, Assignments, Written test | MCQ, SAQ | Pathology, Laboratory Medicine, Hematology |
| HomU G-PM I.7.6 | | | Explain the principles of homoeopathic management for hematological alterations | Students should be able to describe the basic principles of homoeopathic treatment for hematological disorders | C2 | MK | Lecture, Group discussion | Quiz, Assignments, Written test | SAQ | Organon of Medicine |
| HomU G-PM I.7.7 | | | Explain how homoeopathic remedies are selected for hematological alterations | Students should be able to explain the process of selection homoeopathic remedies for hematological alterations | C2 | MK | Lecture, Group discussion | Quiz, Assignments, Written test | SAQ | Organon, Materia medica |
| HomU G-PM I.7.8 | | SH | Demonstrate the process of selecting a homoeopathic remedy for hematological alterations based on symptoms | Students should be able to demonstrate how to select a homoeopathic remedy for a case of hematological dysfunction | P2 | MK | Group Discussion, Case study | Assignments | SAQ | Organon, Materia medica |

6.1.8. Psychological symptoms-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain / Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|-----------------------|----------------------|---------------|---|---|----------------------------------|----------|----------------------------|--------------------|-----|------------------------|
| | | | | | | | | F | S | |
| HomU G-PM I.8.1 | K&S | K | Define the terms "psychological symptoms" and explain their relevance | 1. Psychological disorders are patterns of behavioral or psychological symptoms that impact multiple areas of life. 2. These disorders create distress for the person experiencing the symptoms. 3. They can be temporary or lifelong, and affect how you think, feel, and behave | C1 | MK | Lecture , Group discussion | Quiz, Written test | SAQ | Psychiatry, Psychology |
| HomU G-PM I.8.2 | | | Define the term "fatigue" and explain its relevance | Define fatigue and its significance | C1 | MK | Lecture , Group discussion | Quiz, Written test | SAQ | Physiology, Medicine |
| HomU G-PM I.8.3 | | | Describe the various factors and conditions that can lead to fatigue | List the factors that can contribute to the onset of fatigue | C1 | MK | Lecture , Group discussion | Quiz, Written test | SAQ | Physiology, Medicine |

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|-----------------------|--|----|--|--|----|----|----------------------------|--------------------|-----|------------------------|
| HomU G-PM I.8.4 | | KH | Explain the underlying physiological processes involved in the development of fatigue | Explain the physiological mechanisms that underlie the manifestation of fatigue | C2 | NK | Lecture , Group discussion | Quiz, Written test | SAQ | Physiology, Medicine |
| HomU G-PM I.8.5 | | K | Define the term "asthenia" | Define asthenia and its significance | C1 | MK | Lecture , Group discussion | Quiz, Written test | SAQ | Physiology, Medicine |
| HomU G-PM I.8.6 | | | Describe the various factors and conditions that can lead to asthenia | List the factors that can contribute to the onset of asthenia | C2 | MK | Lecture , Group discussion | Quiz, Written test | SAQ | Physiology, Medicine |
| HomU G-PM I.8.7 | | KH | Explain the underlying physiological processes involved in the development of asthenia | Explain the physiological mechanisms that underlie the manifestation of asthenia | C2 | NK | Lecture , Group discussion | Quiz, Written test | SAQ | Physiology, Medicine |
| HomU G-PM I.8.8 | | K | Define the term "anxiety" | Define anxiety and its significance | C1 | MK | Lecture , Group discussion | Quiz, Written test | SAQ | Psychiatry, Psychology |
| HomU G-PM I.8.9 | | | Describe the various factors and conditions that can lead to anxiety | List the factors that can contribute to the onset of anxiety | C2 | MK | Lecture , Group discussion | Quiz, Written test | SAQ | Psychiatry, Psychology |

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|------------------------|--|----|---|---|----|----|----------------------------|--------------------|-----|------------------------|
| HomU G-PM I.8.10 | | KH | Explain the underlying physiological processes involved in the development of anxiety | Explain the physiological mechanisms that underlie the manifestation of anxiety | C2 | NK | Lecture , Group discussion | Quiz, Written test | SAQ | Physiology, Psyc |
| HomU G-PM I.8.11 | | K | Define the term "sadness" | Define sadness and its significance | C1 | MK | Lecture , Group discussion | Quiz, Written test | SAQ | Psychiatry, Psychology |
| HomU G-PM I.8.12 | | KH | Describe the various factors and conditions that can lead to sadness | List the factors that can contribute to the onset of sadness | C2 | MK | Lecture , Group discussion | Quiz, Written test | SAQ | Psychiatry, Psychology |
| HomU G-PM I.8.13 | | K | Define the term "disorders of thought" and explain its relevance | Define disorders of thought and understand their significance | C1 | MK | Lecture , Group discussion | Quiz, Written test | SAQ | Psychiatry, Psychology |
| HomU G-PM I.8.14 | | KH | Describe the various factors and conditions that can lead to disorders of thought | List the factors that can contribute to the onset of disorders of thought | C2 | MK | Lecture , Group discussion | Quiz, Written test | SAQ | Psychiatry, Psychology |
| HomU G-PM I.8.15 | | K | Define the term "disorders of perception" and explain its relevance | Define disorders of perception and their significance | C1 | MK | Lecture , Group discussion | Quiz, Written test | SAQ | Psychiatry, Psychology |

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|------------------------|--|----|---|---|----|----|----------------------------|--------------------|-----|------------------------|
| HomU G-PM I.8.16 | | KH | Describe the various factors and conditions that can lead to disorders of perception | List the factors that can contribute to the onset of disorders of perception | C2 | MK | Lecture , Group discussion | Quiz, Written test | SAQ | Psychiatry, Psychology |
| HomU G-PM I.8.17 | | K | Define the term "sleep disorders" and explain its relevance | Define sleep disorders. | C1 | MK | Lecture , Group discussion | Quiz, Written test | SAQ | Psychiatry, Psychology |
| HomU G-PM I.8.18 | | KH | Describe the various factors and conditions that can lead to sleep disorders | List the factors that can contribute to the onset of sleep disorders | C2 | MK | Lecture , Group discussion | Quiz, Written test | SAQ | Psychiatry, Psychology |
| HomU G-PM I.8.19 | | | Explain the underlying physiological processes involved in the development of sleep disorders | Explain the physiological mechanisms that underlie the manifestation of sleep disorders | C2 | NK | Lecture , Group discussion | Quiz, Written test | SAQ | Physiology, Psychiatry |

6.2. Competency tables for immunity and susceptibility – general considerations

6.2.1. Introduction and primary & secondary immunodeficiency states-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|-----------------------|----------------------|---------------|--|--|---------------------------------|----------|-------------------------------|----------------------------------|----------|-------------------------------------|
| | | | | | | | | F | S | |
| HomU G-PM I.9.1 | K&S | K | Explanation of primary and secondary immunodeficiency states | Understanding the difference between primary and secondary immunodeficiency | C1 | MK | Lecture, Discussion | Quizzes, Written test | SAQ | Physiology, Pathology, Microbiology |
| HomU G-PM I.9.2 | | | Overview of common genetic and acquired causes | Recognition of common primary immunodeficiency disorders | C2 | MK | Cases, Group work | Quizzes, Written test | MCQ, SAQ | Pathology, Microbiology |
| HomU G-PM I.9.3 | | KH | Description of clinical signs and symptoms | Identification of clinical features suggestive of immunodeficiency | C2 | MK | Group Discussion, Assignments | Quizzes, Written test, Tutorials | MCQ, SAQ | Pathology, Microbiology |
| HomU G-PM I.9.4 | | | Description of therapeutic interventions and preventive measures | Demonstration of appropriate management plans for immunodeficiency disorders | C3 | DK | Debates | Tutorials | SAQ | Pathology, Microbiology |

6.2.2. Hypersensitivity reactions: I,II,III,IV-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|------------------------|----------------------|---------------|---|--|---------------------------------|----------|---------------------|------------------|-----|-------------------------|
| | | | | | | | | F | S | |
| HomU G-PM I.10.1 | K&S | K | Explanation of hypersensitivity reaction types | Understanding the classification and mechanisms of hypersensitivity reactions | C1 | MK | Lecture, Discussion | MCQ | SAQ | Pathology, Microbiology |
| 01a | | | | Type I hypersensitivity reactions | | | | | | |
| 01b | | | | Type II hypersensitivity reactions | | | | | | |
| 01c | | | | Type III hypersensitivity reactions | | | | | | |
| 01d | | | | Type IV hypersensitivity reactions | | | | | | |
| HomU G-PM I.10.2 | | | Overview of common allergens and mediators such as histamine, and cytokines | Recognition of allergens and mediators associated with type I hypersensitivity | C2 | MK | Group discussion | Assignments, MCQ | SAQ | Pathology, Microbiology |

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|------------------------|--|----|--|--|----|----|----------------------------|------------------|--------------------------|--|
| HomU G-PM I.10.3 | | KH | Explanation of IgE-mediated mast cell degranulation | Understanding the sequence of events leading to type I hypersensitivity reactions | C2 | NK | Lecture, Group Discussion | Assignments, MCQ | SAQ | Physiology, Pathology |
| HomU G-PM I.10.4 | | | Description of allergic rhinitis, asthma, anaphylaxis, and atopic dermatitis | Identification of clinical features suggestive of type I hypersensitivity | C2 | MK | Lectures, Group discussion | MCQ | SAQ, Bedside examination | Physiology, Pathology, Clinical medicine |
| HomU G-PM I.10.5 | | | Explanation of skin prick tests and serum IgE assays | Application of diagnostic strategies for type I hypersensitivity assessment | C2 | DK | Debates | Tutorials | SAQ | Physiology, Pathology, Clinical medicine |
| HomU G-PM I.10.6 | | K | Overview of common antigens and antibodies such as blood group antigens and autoantibodies | Identify common antigens and antibodies involved in type II hypersensitivity reactions | C1 | MK | Lecture | Assignments, MCQ | SAQ, Viva voce | Pathology, Microbiology |
| HomU G-PM I.10.7 | | KH | Explanation of antibody-mediated cell destruction and complement activation | Understanding the sequence of events leading to type II hypersensitivity reactions | C2 | MK | Lecture | Assignments, MCQ | SAQ | Physiology, Pathology |

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|-------------------------|--|----|--|---|----|----|------------------------------|------------------|----------------|------------------------------|
| HomU G-PM I.10.8 | | | Description of autoimmune hemolytic anemia, Goodpasture syndrome, and hemolytic disease of the newborn | Identification of clinical features suggestive of type II hypersensitivity | C2 | MK | Lecture, case based learning | Assignments, MCQ | SAQ, Viva voce | Pathology, clinical medicine |
| HomU G-PM I.10.9 | | | Explanation of direct and indirect Coombs tests | Application of diagnostic strategies for type II hypersensitivity assessment | C2 | DK | Debates | Tutorials | SAQ, Viva voce | Physiology, pathology |
| HomU G-PM I.10.10 | | K | Overview of common antigens and antibodies such as immune complexes and autoantibodies | Identify common antigens and antibodies involved in type III hypersensitivity reactions | C1 | MK | Lecture | Assignments, MCQ | SAQ, Viva voce | Pathology, Microbiology |
| HomU G-PM I.10.11 | | KH | Explanation of immune complex deposition and complement activation | Understanding the sequence of events leading to type III hypersensitivity reactions | C2 | MK | Lecture | Assignments, MCQ | SAQ | Physiology, Pathology |

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|-------------------------|--|----|--|--|----|----|------------------------------|------------------|----------------|------------------------------|
| HomU G-PM I.10.12 | | | Description of serum sickness, Arthus reaction, and systemic lupus erythematosus | Identification of clinical features suggestive of type III hypersensitivity | C2 | MK | Lecture, case based learning | Assignments, MCQ | SAQ, Viva voce | Pathology, clinical medicine |
| HomU G-PM I.10.13 | | | Explanation of laboratory tests such as complement levels and immunofluorescence | Application of diagnostic strategies for type III hypersensitivity assessment | C2 | DK | Debates | Tutorials | SAQ, Viva voce | Physiology, pathology |
| HomU G-PM I.10.14 | | K | Overview of common antigens and cells such as haptens and T cells | Identify common antigens and cells involved in type IV hypersensitivity reactions | C1 | MK | Lecture | Assignments, MCQ | SAQ, Viva voce | Pathology, Microbiology |
| HomU G-PM I.10.15 | | KH | Explanation of T cell-mediated inflammation and cytokine release | Understanding the sequence of events leading to type IV hypersensitivity reactions | C2 | MK | Lecture | Assignments, MCQ | SAQ | Physiology, Pathology |
| HomU G-PM I.10.16 | | | Description of contact dermatitis, tuberculin reaction, and | Identification of clinical features suggestive of type | C2 | MK | Lecture, case based | Assignments, MCQ | SAQ, Viva voce | Pathology, clinical medicine |

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| | | | autoimmune diseases | hypersensitivity | | | learning | | | |
| HomU G-PM I.10.17 | | | Explanation of patch testing and lymphocyte proliferation assays | Application of diagnostic strategies for type IV hypersensitivity assessment | C2 | DK | Debates | Tutorials | SAQ, Viva voce | Physiology, pathology |

6.2.3. Autoimmune Diseases-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|------------------------|----------------------|---------------|--|--|---------------------------------|----------|---------------------|------------------|----------------|--|
| | | | | | | | | F | S | |
| HomU G-PM I.11.1 | K&S | K | Explanation of autoimmune disease etiology and pathogenesis | Understanding the basics of autoimmune diseases and their mechanisms | C1 | MK | Lecture, Discussion | MCQ | SAQ | Pathology, Microbiology |
| HomU G-PM I.11.2 | | | Overview of common autoimmune disorders such as rheumatoid arthritis, systemic lupus erythematosus, and multiple sclerosis | Recognition of autoimmune diseases and their clinical presentations | C1 | MK | Lecture, Discussion | Assignments, MCQ | SAQ, Viva voce | Pathology, Microbiology, Clinical medicine |

| | | | | | | | | | | |
|------------------------|--|----|--|---|----|----|------------------------|----------------|----------------|------------------------------|
| HomU G-PM I.11.3 | | KH | Explanation of immune dysregulation in autoimmune disorders | Understanding the involvement of autoantibodies and T cells in autoimmune pathophysiology | C2 | MK | Problem-based learning | Tutorials, MCQ | SAQ, Viva voce | Physiology, pathology |
| HomU G-PM I.11.4 | | | Description of systemic symptoms and organ involvement in autoimmune disorders | Identification of systemic and organ-specific manifestations of autoimmune diseases | C2 | MK | Lecture, Discussion | Tutorials, MCQ | SAQ, Viva voce | Pathology, Clinical medicine |

6.2.4. HIV Disease-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|------------------------|----------------------|---------------|---|--|---------------------------------|----------|---------------------------|------------|-----|-------------------------|
| | | | | | | | | F | S | |
| HomU G-PM I.12.1 | K&S | K | Explanation of HIV virus and its transmission | Understanding the basics of HIV/AIDS and its causative agent | C1 | MK | Lecture, Group Discussion | MCQ | SAQ | Pathology, Microbiology |

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|------------------------|--|----|---|--|----|----|--------------------------------|-----------------------------|----------------|---|
| HomU G-PM I.12.2 | | | Overview of HIV transmission routes such as sexual contact, blood exposure, and vertical transmission | Identify common risk factors and modes of transmission for HIV infection | C1 | MK | Lecture, Group Discussion | Assignments, MCQ | SAQ, Viva voce | Pathology, Microbiology, PSM |
| HomU G-PM I.12.3 | | KH | Explanation of HIV progression from acute infection to AIDS | Understanding the stages and clinical course of HIV disease | C2 | MK | Lectures, case based learning | Tutorials, Assignments, MCQ | SAQ, Viva voce | Clinical medicine |
| HomU G-PM I.12.4 | | | Description of HIV-related symptoms and AIDS-defining illnesses | Identification of clinical features suggestive of HIV infection and AIDS | C2 | MK | Workshops, Case-based learning | Assignments, MCQ | SAQ, Viva voce | Clinical medicine |
| HomU G-PM I.12.5 | | | Explanation of HIV replication and immune depletion | Understand the pathophysiology of HIV infection and its effects on the immune system | C2 | DK | Lectures, Group Discussion | Assignments, MCQ | SAQ, Viva voce | Pathology, Microbiology |
| HomU G-PM I.12.6 | | SH | Description of HIV prevention methods and harm reduction approaches | Demonstration of appropriate prevention strategies for HIV infection | P2 | DK | Seminars | Tutorials, Assignments, MCQ | SAQ, Viva voce | Community outreach programs on HIV prevention |

6.2.5. Transplants and graft rejection-

| Sl. No | Domain of Competency | Millers Level | Content | SLO | Blooms Domain / Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|------------------|----------------------|---------------|--|--|----------------------------------|----------|--------------------------------|-----------------------------|----------------|-------------------------|
| | | | | | | | | F | S | |
| HomU G-PM I.13.1 | K&S | K | Explanation of transplantation and immune response against grafts | Understanding the basics of transplantation and graft rejection | C1 | MK | Lecture, Group Discussion | MCQ | SAQ | Pathology, Microbiology |
| HomU G-PM I.13.2 | | | Overview of different types of transplants and their sources | Recognition of various transplantation methods and their differences | C1 | MK | Lecture, Group Discussion | Assignments, MCQ | SAQ, Viva voce | Pathology, Microbiology |
| HomU G-PM I.13.3 | | KH | Explanation of the alloimmune response and mechanisms of graft rejection | Understanding the immune-mediated rejection process | C2 | MK | Lectures, case based learning | Tutorials, Assignments, MCQ | SAQ, Viva voce | Pathology, Microbiology |
| HomU G-PM I.13.4 | | | Description of acute and chronic rejection symptoms | Identification of clinical features suggestive of graft rejection | C2 | MK | Workshops, Case-based learning | Assignments, MCQ | SAQ, Viva voce | Pathology, Microbiology |

6.2.6. Homoeopathic relation of immunity and susceptibility-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|------------------|----------------------|---------------|---|--|---------------------------------|----------|--|---------------------------------------|--------------------------|-----------------------------|
| | | | | | | | | F | S | |
| HomU G-PM I.14.1 | K&S | K | Overview of factors such as genetic predisposition, miasmatic influence, and constitutional characteristics | Recognition of factors influencing individual's susceptibility according to homeopathic principles | C2 | MK | Lecture, Group Discussion | Case presentations, MCQ | SAQ, Viva voce | Organon and Hom. Philosophy |
| HomU G-PM I.14.3 | | KH | Description of the individualized approach in homeopathy | Identification of the importance of individualization in homeopathic treatment based on susceptibility | C2 | MK | Lectures, Case-based learning | Quiz competitions, Tutorials | SAQ, Bedside examination | Organon and Hom. Philosophy |
| HomU G-PM I.14.4 | | | Explanation of homeopathic remedies and constitutional treatment for improving vitality | Explain the role of homeopathic treatment strategies in enhancing immunity | C2 | DK | Problem-solving scenarios, Group discussions | Case presentation, Guided discussions | Viva voce | Organon and Hom. Philosophy |

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| HomU G-PM I.14.5 | | | Description of the principle of similars and its role in strengthening immunity | Discuss the concept of the similimum in homeopathy and its relation to immunity and susceptibility | C2 | DK | Group Discussions | Tutorials, Assignments | | Organon and Hom. Philosophy |
| HomU G-PM I.14.6 | | SH | Analysis of patient outcomes and changes in susceptibility following homeopathic treatment | Evaluation of the effectiveness of homeopathic interventions on immunity | P1 | DK | Patient encounters - OPD | | Objective Structured Clinical Examination (OSCE) | Organon and Hom. Philosophy |

6.3. Competency tables for medical genetics – an introduction

6.3.1. Introduction-

| Sl. No. | Domain of Competency | Miller's Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|--------------------|----------------------|----------------|--|--|------------------------------------|----------|------------------------|-------------------|-----------|----------------------------|
| | | | | | | | | F | S | |
| HomUG-PM I.15.1 | K&S | K | Explanation of medical genetics and its scope | Understanding the definition and scope of medical genetics | C1 | MK | Lecture, Discussion | MCQ | SAQ | Physiology, Biochemistry , |
| HomUG-PM I.15.2 | | | Overview of Mendelian principles, non-Mendelian inheritance, and genetic variation | Identify the basic principles of inheritance | C2 | MK | Lecture, Discussion | MCQ, Assignemnts | Viva voce | Physiology, Pathology |
| HomUG-PM I.15.3 | | KH | Explanation of DNA structure, gene expression, and regulation | Describe the structure and function of DNA and genes | C2 | MK | Problem-based learning | Assignments , MCQ | SAQ , | Physiology, Biochemistry |

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|------------------------|--|-----------|--|--|----|----|---|------------------------|-----------------|----------------------------------|
| HomUG -PM I.15.4 | | | Description of inheritance patterns (autosomal dominant, autosomal recessive, X-linked, etc.) and common genetic disorders | Describe the patterns of inheritance and genetic disorders | C2 | MK | Interactive workshops , Case-based learning | MCQ, Assignments | SAQ | Pathology, Clinical medicine |
| HomUG -PM I.15.5 | | | Explanation of genetic testing methods, indications, and implications | Application of genetic counseling principles | C3 | DK | Problem-solving scenarios, Group Discussion | Tutorials, MCQ | SAQ , Viva voce | Biochemistry , Clinical Medicine |
| HomUG -PM I.15.6 | | Shows how | Description of ELSI (ethical, legal, and social implications) issues in clinical practice | Demonstration of understanding ELSI principles | P1 | DK | Seminars | Tutorials, Assignments | | Clinical Medicine, PSM |

6.3.2. Cytogenetics-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|------------------------|----------------------|---------------|---|--|---------------------------------|----------|----------------------|------------------|-----------|-------------------------|
| | | | | | | | | F | S | |
| HomU G-PM I.16.1 | K&S | K | Explanation of cytogenetics and its role in studying chromosomes and their abnormalities | Understanding the definition and scope of cytogenetics | C1 | MK | Lecture, Discussion | MCQ | SAQ | Pathology |
| HomU G-PM I.16.2 | | | Overview of chromosome structure, function, and organization | Identify the basic structure and function of chromosomes | C1 | MK | Lecture, Discussion | MCQ, Assignments | Viva voce | Biochemistry, pathology |
| HomU G-PM I.16.3 | | KH | Explanation of cytogenetic techniques such as karyotyping, FISH, and chromosomal microarray | Understanding the principles and applications of cytogenetic methods | C2 | MK | Lecture, Assignments | Assignments, MCQ | SAQ, | Pathology |

| | | | | | | | | | | |
|------------------------|--|--|--|---|----|----|--|------------------|----------------|-------------------------------------|
| HomU G-PM I.16.4 | | | Description of different types of chromosomal abnormalities (numerical and structural) and their subtypes (e.g., trisomy, translocation, deletion) | Identification and categorization of chromosomal abnormalities | C2 | MK | Workshops, Case-based learning | MCQ, Assignments | SAQ | Pathology |
| HomU G-PM I.16.5 | | | Explanation of inheritance patterns for chromosomal abnormalities (e.g., autosomal dominant, autosomal recessive, X-linked) | Recognize patterns of inheritance for chromosomal abnormalities | C2 | MK | Interactive workshops, Case-based learning | Tutorials, MCQ | SAQ, Viva voce | Physiology, Biochemistry, pathology |

6.3.3. Down's Syndrome-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|------------------------|----------------------|---------------|---|--|---------------------------------|----------|----------------------|------------------------------|----------------|------------------------|
| | | | | | | | | F | S | |
| HomU G-PM I.17.1 | K&S | K | Explanation of Down's Syndrome, its causes, and characteristics | Understanding the definition and basic features of Down's Syndrome | C1 | MK | Lecture, Discussion | Quizzes, Class participation | SAQ | Pathology |
| HomU G-PM I.17.2 | | KH | Overview of trisomy 21 and the genetic mechanisms leading to Down's Syndrome | Describe the genetic basis of Down's Syndrome | C2 | MK | Lecture, Discussion | MCQ, Assignments | SAQ, Viva voce | Pathology |
| HomU G-PM I.17.3 | | Knows how | Description of physical characteristics, developmental delays, and medical issues associated with Down's Syndrome | Identification of clinical features suggestive of Down's Syndrome | C3 | MK | Lecture, Assignments | Assignments, MCQ | SAQ, MCQ | Pathology, Paediatrics |

| | | | | | | | | | | |
|------------------------|--|--------------|--|--|----|----|--|------------------|----------------|----------------------------------|
| HomU G-PM I.17.4 | | Knows how | Explanation of prevalence, risk factors, and screening methods for Down's Syndrome | Application of knowledge regarding Down's Syndrome epidemiology and risk assessment | C4 | DK | Workshops | MCQ, Assignments | SAQ | Pathology, ObG, PSM, Paediatrics |
| HomU G-PM I.17.5 | | Shows how | Description of medical interventions, therapies, and support services for individuals with Down's Syndrome | Discuss the medical and developmental management of individuals with Down's Syndrome | C5 | DK | Interactive workshops, Case-based learning | Tutorials, MCQ | SAQ, Viva voce | Paediatrics |

6.3.4. Turner's Syndrome-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|------------------------|----------------------|---------------|---|--|---------------------------------|----------|---------------------|------------------------------|-----|-------------|
| | | | | | | | | F | S | |
| HomU G-PM I.18.1 | K&S | K | Explanation of Turner's Syndrome, its causes, and characteristics | Understanding the definition and basic features of Turner's Syndrome | C1 | MK | Lecture, Discussion | Quizzes, Class participation | SAQ | Pathology |

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|------------------------|--|----|---|---|----|----|--|------------------|----------------|----------------------------------|
| HomU G-PM I.18.2 | | KH | Overview of monosomy X and the genetic mechanisms leading to Turner's Syndrome | Describe the genetic basis of Turner's Syndrome | C2 | MK | Lecture, Discussion | MCQ, Assignments | SAQ, Viva voce | Pathology |
| HomU G-PM I.18.3 | | | Description of physical characteristics, developmental issues, and medical conditions associated with Turner's Syndrome | Identification of clinical features suggestive of Turner's Syndrome | C3 | MK | Lecture, Assignments | Assignments, MCQ | SAQ, MCQ | Pathology, Paediatrics |
| HomU G-PM I.18.4 | | | Explanation of prevalence, risk factors, and screening methods for Turner's Syndrome | Understand the epidemiology and risk factors for Turner's Syndrome | C4 | DK | Workshops | MCQ, Assignments | SAQ | Pathology, ObG, PSM, Paediatrics |
| HomU G-PM I.18.5 | | | Description of medical interventions, hormone therapy, and support | Discuss the medical and developmental management of | C5 | DK | Interactive workshops, Case-based learning | Tutorials, MCQ | SAQ, Viva voce | Paediatrics |

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|--|--|--|---|------------------------------------|--|--|--|--|--|--|
| | | | services for individuals with Turner's Syndrome | individuals with Turner's Syndrome | | | | | | |
|--|--|--|---|------------------------------------|--|--|--|--|--|--|

6.3.5. Klinefelter's Syndrome-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|------------------------|----------------------|---------------|---|---|---------------------------------|----------|---------------------|------------------------------|----------------|-------------|
| | | | | | | | | F | S | |
| HomU G-PM I.19.1 | K&S | K | Explanation of Klinefelter's Syndrome, its causes, and characteristics | Understanding the definition and basic features of Klinefelter's Syndrome | C1 | MK | Lecture, Discussion | Quizzes, Class participation | SAQ | Pathology |
| HomU G-PM I.19.2 | | KH | Overview of aneuploidy (47, XXY) and the genetic mechanisms leading to Klinefelter's Syndrome | Describe the genetic basis of Klinefelter's Syndrome | C2 | MK | Lecture, Discussion | MCQ, Assignments | SAQ, Viva voce | Pathology |

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|------------------------|--|--|--|---|----|----|--|------------------|----------------|-----------------------------------|
| HomU G-PM I.19.3 | | | Description of physical characteristics, developmental issues, and medical conditions associated with Klinefelter's Syndrome | Identification of clinical features suggestive of Klinefelter's Syndrome | C3 | MK | Lecture, Assignments | Assignments, MCQ | SAQ, MCQ | Pathology , Paediatrics |
| HomU G-PM I.19.4 | | | Explanation of prevalence, risk factors, and screening methods for Klinefelter's Syndrome | Understand the epidemiology and risk factors for Klinefelter's Syndrome | C4 | DK | Workshops | MCQ, Assignments | SAQ | Pathology , ObG, PSM, Paediatrics |
| HomU G-PM I.19.5 | | | Description of medical interventions, hormone therapy, and support services for individuals with Klinefelter's Syndrome | Discuss the medical and developmental management of individuals with Klinefelter's Syndrome | C5 | DK | Interactive workshops, Case-based learning | Tutorials, MCQ | SAQ, Viva voce | Paediatrics |

6.3.6. Cystic Fibrosis-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|------------------|----------------------|---------------|--|--|---------------------------------|----------|----------------------|------------------------------|----------------|----------------------------------|
| | | | | | | | | F | S | |
| HomU G-PM I.20.1 | K&S | K | Explanation of CF, its causes, and characteristics | Understanding the definition and basic features of CF | C1 | MK | Lecture, Discussion | Quizzes, Class participation | SAQ | Pathology |
| HomU G-PM I.20.2 | | | Overview of mutations in the CFTR gene and their effects on chloride transport | Describe the genetic basis of CF | C1 | MK | Lecture, Discussion | MCQ, Assignments | SAQ, Viva voce | Pathology |
| HomU G-PM I.20.3 | | KH | Description of respiratory, digestive, and other symptoms associated with CF | Identification of clinical features suggestive of CF | C2 | MK | Lecture, Assignments | Assignments, MCQ | SAQ, MCQ | Pathology, Paediatrics |
| HomU G-PM I.20.4 | | | Explanation of the mechanisms leading to mucus buildup and organ damage in CF | Understanding the pathophysiological processes underlying CF | C2 | MK | Workshops | MCQ, Assignments | SAQ | Pathology, ObG, PSM, Paediatrics |

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|------------------------|--|--|---|--------------------------------------|----|----|--|----------------|----------------|-------------|
| HomU G-PM I.20.5 | | | Description of treatment modalities including airway clearance techniques, medications, and nutritional support | Discuss the medical management of CF | C2 | DK | Interactive workshops, Case-based learning | Tutorials, MCQ | SAQ, Viva voce | Paediatrics |
|------------------------|--|--|---|--------------------------------------|----|----|--|----------------|----------------|-------------|

6.3.7. Huntington's disease-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|------------------------|----------------------|---------------|--|---|------------------------------------|----------|---------------------|------------------------------|----------------|-------------|
| | | | | | | | | F | S | |
| HomU G-PM I.21.1 | K&S | K | Explanation of HD, its causes, and characteristics | Understanding the definition and basic features of HD | C1 | MK | Lecture, Discussion | Quizzes, Class participation | SAQ | Pathology |
| HomU G-PM I.21.2 | | | Overview of the mutation in the HTT gene and its inheritance pattern | Describe the genetic basis of HD | C1 | MK | Lecture, Discussion | MCQ, Assignments | SAQ, Viva voce | Pathology |

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|------------------------|--|----|--|--|----|----|----------------------|-----------------------|----------|----------------------------------|
| HomU G-PM I.21.3 | | KH | Description of motor, cognitive, and psychiatric symptoms associated with HD | Identification of clinical features suggestive of HD | C2 | MK | Lecture, Assignments | Assignments, MCQ | SAQ, MCQ | Pathology, Paediatrics |
| HomU G-PM I.21.4 | | | Explanation of the mechanisms leading to neuronal dysfunction and degeneration in HD | Understanding the physiological processes underlying HD | C2 | MK | Workshops | MCQ, Assignments | SAQ | Pathology, ObG, PSM, Paediatrics |
| HomU G-PM I.21.5 | | | Explanation of genetic counseling services, predictive testing, and family planning options for HD | Explain the importance of genetic counseling and testing in HD | C2 | DK | Workshop, Seminar | Tutorials, assignment | | Psychology, PSM |

6.3.8. Marfan's syndrome-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|------------------|----------------------|---------------|---|---|---------------------------------|----------|----------------------|------------------------------|----------------|----------------------------------|
| | | | | | | | | F | S | |
| HomU G-PM I.22.1 | K&S | K | Explanation of Marfan Syndrome, its causes, and characteristics | Understanding the definition and basic features of Marfan Syndrome | C1 | MK | Lecture, Discussion | Quizzes, Class participation | SAQ | Pathology |
| HomU G-PM I.22.2 | | | Overview of mutations in the FBN1 gene and their effects on connective tissue | Describe the genetic basis of Marfan Syndrome | C1 | MK | Lecture, Discussion | MCQ, Assignments | SAQ, Viva voce | Pathology |
| HomU G-PM I.22.3 | | KH | Description of skeletal, cardiovascular, and ocular manifestations associated with Marfan Syndrome | Identification of clinical features suggestive of Marfan Syndrome | C2 | MK | Lecture, Assignments | Assignments, MCQ | SAQ, MCQ | Pathology, Paediatrics |
| HomU G-PM I.22.4 | | | Explanation of the mechanisms leading to connective tissue abnormalities and organ dysfunction in Marfan Syndrome | Understanding the pathophysiological processes underlying Marfan Syndrome | C2 | MK | Workshops | MCQ, Assignments | SAQ | Pathology, ObG, PSM, Paediatrics |

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|------------------------|--|--|---|---|----|----|---|------------------------|----------------|-----------------|
| HomU G-PM I.22.5 | | | Description of treatments including medications, surgery, and lifestyle modifications for managing Marfan Syndrome symptoms | Discuss the medical management of Marfan Syndrome | C2 | DK | Interactive workshops , Case-based learning | Tutorials, MCQ | SAQ, Viva voce | Paediatrics |
| HomU G-PM I.22.6 | | | Explanation of genetic counseling services, family screening, and prenatal testing for Marfan Syndrome | Explain the importance of genetic counseling and screening in Marfan Syndrome | C2 | DK | Workshop , Seminar | Tutorials, assignments | | Psychology, PSM |

6.3.9. Polycystic kidney disease-

| Sl. No. | Competency | Millers Level: | Content | SLO | Blooms Domain / Guilber t's Level | Priority | T-L Methods | Assessment | | Integration |
|------------------------|------------|----------------|---|--|-----------------------------------|----------|---------------------|------------------------------|-----|-------------|
| | | | | | | | | F | S | |
| HomU G-PM I.23.1 | K&S | K | Explanation of PKD, its causes, and characteristics | Understanding the definition and basic features of PKD | C1 | MK | Lecture, Discussion | Quizzes, Class participation | SAQ | Pathology |

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|------------------------|--|----|--|--|----|----|--|------------------|----------------|----------------------------------|
| HomU G-PM I.23.2 | | | Overview of mutations in the PKD1 and PKD2 genes and their effects on kidney development | Describe the genetic basis of PKD | C1 | MK | Lecture, Discussion | MCQ, Assignments | SAQ, Viva voce | Pathology |
| HomU G-PM I.23.3 | | KH | Description of renal and extrarenal manifestations associated with PKD | Identification of clinical features suggestive of PKD | C2 | MK | Lecture, Assignments | Assignments, MCQ | SAQ, MCQ | Pathology, Paediatrics |
| HomU G-PM I.23.4 | | | Explanation of the mechanisms leading to cyst formation, kidney enlargement, and renal dysfunction in PKD | Understanding the physiological processes underlying PKD | C2 | MK | Workshops | MCQ, Assignments | SAQ | Pathology, ObG, PSM, Paediatrics |
| HomU G-PM I.23.5 | | | Description of treatments including blood pressure control, pain management, and dialysis/transplantation for managing PKD complications | Discuss the medical management of PKD | C2 | DK | Interactive workshops, Case-based learning | Tutorials, MCQ | SAQ, Viva voce | Paediatrics |

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| HomU G-PM I.23.6 | | | Explanation of genetic counseling services, family screening, and prenatal testing for PKD | Explain the importance of genetic counseling and screening in PKD | C2 | DK | Workshop, Seminar | Tutorials, assignments | | Psychology, PSM |
|------------------------|--|--|--|---|----|----|-------------------|------------------------|--|-----------------|

6.3.10. Neoplasia-

| Sl. No. | Domain of Competency | Millers Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
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| | | | | | | | | F | S | |
| HomU G-PM I.24.1 | K&S | K | Explanation of neoplasia, its definition, and characteristics | Understanding the definition and basic features of neoplasia | C1 | MK | Lecture, Discussion | Quizzes, Class participation | SAQ | Pathology |
| HomU G-PM I.24.2 | | | Overview of benign and malignant neoplasms, including carcinomas, sarcomas, and hematologic malignancies | Recognition of different types of neoplasms based on histological and molecular characteristics | C1 | MK | Lecture, Discussion | MCQ, Assignments | SAQ, Viva voce | Pathology |

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|------------------------|--|----|---|--|----|----|--|------------------|----------------|------------------------|
| HomU G-PM I.24.3 | | KH | Description of the multistep process of carcinogenesis, including initiation, promotion, and progression | Understanding the molecular and cellular events leading to the development of cancer | C2 | MK | Lecture, Assignments | Assignments, MCQ | SAQ, MCQ | Pathology |
| HomU G-PM I.24.4 | | | Identification of environmental, genetic, and lifestyle factors contributing to cancer risk | Recognition of modifiable and non-modifiable risk factors for cancer | C2 | MK | Workshops | MCQ, Assignments | SAQ | PSM, Clinical medicine |
| HomU G-PM I.24.5 | | | Description of screening tests and preventive measures for various types of cancer | Discuss the principles of cancer screening and prevention | C2 | DK | Interactive workshops, Case-based learning | Tutorials, MCQ | SAQ, Viva voce | PSM, Clinical medicine |
| HomU G-PM I.24.6 | | | Description of common signs and symptoms associated with cancer, including pain, weight loss, and fatigue | Identification of clinical features suggestive of cancer | C2 | MK | Interactive workshops, Case-based learning | Tutorials, MCQ | SAQ, Viva voce | Clinical medicine |

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| HomUG-PM I.24.7 | | | Explanation of diagnostic tests such as imaging, biopsy, and tumor markers used in cancer diagnosis | Discuss the diagnostic workup for cancer | C2 | DK | Assignments | Tutorials, MCQ | SAQ, Viva voce | Clinical Medicine, Radiology, Laboratory medicine, Pathology |
|--------------------|--|--|---|--|----|----|-------------|----------------|----------------|--|

6.4. Competency Tables for Infectious Diseases and Tropical Diseases

| Sl. No. | Domain of Competency | Miller's Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|--------------------|----------------------|----------------|--|---|---------------------------------|----------|--|---|-------------------------------|---|
| | | | | | | | | F | S | |
| HomUG-PM I.25.1 | K&S | K | Herpes simplex viruses [HSV] infections | Define Herpes simplex viruses [HSV] infections | C1 | MK | Lecture, Multimedia presentation, Case Based | MCQ, Quiz, Case Based, Morphology Chart, Viva | LQ, SQ, MCQ, Case Based, Viva | Pathology, Community Medicine, Paediatrics, Dermatology |
| | | | | Discuss etiopathogenesis for HSV Infections | C2 | MK | Lecture, Case Based | | | |
| | | | | Identify the epidemiology dimension of HSV Infections | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | | Explain how HSV Infections | C2 | MK | Lecture, field visit | | | Community Medicine |

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| | | | spreads from person to person | | | | | | |
| | | | Describe the different clinical spectrum of HSV Infections | C2 | MK | Lecture, Case Based | | | |
| | | | State the investigations to be done for the patient suffering from different clinical spectrum of HSV Infections | C1 | MK | Lecture, Case Based | | | |
| | | KH | Enumerate the diagnostic features for HSV Infections | C1 | MK | Lecture, Case Based | | | |
| | | | Describe the differential diagnosis of HSV Infections | C2 | MK | Lecture, Case Based | | | |
| | | K | Describe the potential complications of HSV Infections | C2 | MK | Lecture, Case Based | | | |
| | | KH | Discuss the prognosis of HSV Infections | C2 | MK | Lecture, Case Based | | | |
| | | | | | | | | | Pathology |

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| | | | | Summarize the treatment and management options for HSV Infections | C2 | MK | Lecture, Case Based | | | Organon |
| | | K | | Enumerate the indications of homoeopathic medicines for the HSV Infections | C1 | MK | Lecture, Case Based | | | Materia Medica |
| | | KH | | Describe the strategies to prevent HSV Infections transmission | C2 | MK | Lecture, Case Based | | | Community Medicine |
| HomUG -PM I.25.2 | K&S | K | Varicella-zoster virus (VZV) infection | Define Varicella-zoster virus infection (VZV) | C1 | MK | Lecture, Multimedia presentation, Case Based | MCQ, Quiz, Case Based, Morphology Chart, Viva | LQ, SQ, MCQ, Case Based, Viva | Pathology, Community Medicine, Pediatrics, Dermatology |
| | | | | Discuss etiopathogenesis for Varicella-zoster virus (VZV) infection | C2 | MK | Lecture, Case Based | | | |
| | | | | Identify the epidemiology dimension of Varicella-zoster virus (VZV) infection | C2 | MK | Lecture, field visit | | | Community Medicine |

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| | | | Explain how Varicella-zoster virus (VZV) infection spreads from person to person | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | Describe the different clinical spectrum of Varicella-zoster virus (VZV) infection | C2 | MK | Lecture, Case Based | | | |
| | | | State the investigations to be done for the patient suffering from Varicella-zoster virus (VZV) infection | C1 | MK | Lecture, Case Based | | | Pathology |
| | | KH | Enumerate the diagnostic features for Varicella-zoster virus (VZV) infection | C1 | MK | Lecture, Case Based | | | |
| | | | Describe the differential diagnosis of Varicella-zoster virus (VZV) infection | C2 | MK | Lecture, Case Based | | | |

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| | | | Describe the potential complications arising from Varicella-zoster virus (VZV) infection as per the different clinical spectrum | C2 | MK | Lecture, Case Based | | | |
| | | | Discuss the prognosis of different clinical spectrum of Varicella-zoster virus (VZV) infection | C2 | MK | Lecture, Case Based | | | |
| | | | Summarize the treatment and management options for different clinical spectrum of Varicella-zoster virus (VZV) infection | C2 | MK | Lecture, Case Based | | | Organon |
| | | K | Enumerate the indications of homoeopathic medicines for different clinical spectrum of Varicella-zoster | C1 | MK | Lecture, Case Based | | | Materia Medica |

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| | | | | virus (VZV) infection | | | | | | |
| | | KH | | Describe the strategies to prevent Varicella-zoster virus (VZV) infection | C2 | MK | Lecture, Case Based | | | Community Medicine |
| HomUG -PM I.25.3 | K&S | K | Epstein-Barr virus [EBV] Infections | Define EBV Infections | C1 | MK | Lecture, Multimedia presentation, Assignment - Literature Review | MCQ, Quiz, Viva | LQ, SQ, MCQ, Viva | Pathology, Community Medicine, Pediatrics, Dermatology |
| | | | | Discuss etiopathogenesis for EBV Infections | C2 | MK | Lecture | | | |
| | | | | Identify the epidemiology dimension of EBV Infections | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | | Explain how EBV Infections spreads from person to person | C2 | MK | Lecture, field visit | | | Community Medicine |

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| | | | | Describe the clinical presentations of EBV Infections - infectious mononucleosis | C2 | MK | Lecture | | | | |
| | | | | State the investigations to be done for the patient suffering from EBV Infections | C1 | MK | Lecture | | | Pathology | |
| | | KH | | Enumerate the diagnostic features for EBV Infections | C1 | MK | Lecture | | | | |
| | | K | | Describe the differential diagnosis of EBV Infections | C2 | MK | Lecture | | | | |
| | | | | Describe the potential complications of EBV Infections | C2 | MK | Lecture | | | | |
| | | KH | | Discuss the prognosis of EBV Infections | C2 | MK | Lecture | | | | |
| | | | | Summarize the treatment and management options for EBV Infections | C2 | MK | Lecture | | | Organon | |

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| | | K | | Enumerate the indications of homoeopathic medicines for the EBV Infections | C1 | MK | Lecture | | | Materia Medica |
| | | KH | | Describe the strategies to prevent EBV Infections transmission | C2 | MK | Lecture | | | Community Medicine |
| HomUG -PM I.25.4 | K&S | K | Poliovirus Infections | Define Poliovirus Infections | C1 | DK | Lecture, Multimedia presentation, Assignment - Literature Review | MCQ, Quiz, Viva | LQ, SQ, MCQ, Viva | Pathology, Community Medicine, Pediatrics, Dermatology |
| | | | | Discuss etiopathogenesis for Poliovirus Infections | C2 | DK | Lecture, Case Based | | | |
| | | | | Identify the epidemiology dimension of Poliovirus Infections | C2 | DK | Lecture, field visit | | | Community Medicine |
| | | | | Describe the clinical presentations of Poliovirus Infections | C2 | DK | Lecture, Case Based | | | |

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| | | | State the investigations to be done for the patient suffering from Poliovirus Infections | C1 | DK | Lecture, Case Based | | | Pathology |
| | | KH | Enumerate the diagnostic features for Poliovirus Infections | C1 | DK | Lecture, Case Based | | | |
| | | | Describe the differential diagnosis of Poliovirus Infections | C2 | DK | Lecture, Case Based | | | |
| | | K | Describe the potential complications of Poliovirus Infections | C2 | DK | Lecture, Case Based | | | |
| | | KH | Discuss the prognosis of Poliovirus Infections | C2 | DK | Lecture, Case Based | | | |
| | | | Summarize the treatment and management options for Poliovirus Infections | C2 | DK | Lecture, Case Based | | | Organon, Immunology |

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| | | K | | Enumerate the indications of homoeopathic medicines for the Poliovirus Infections | C1 | DK | Lecture, Case Based | | | Materia Medica |
| | | KH | | Describe the strategies to prevent Poliovirus Infections transmission | C2 | MK | Lecture, Case Based | | | Community Medicine, Immunology |
| HomUG -PM I.25.5 | K&S | K | Measles | Define Measles | C1 | MK | Lecture, Multimedia presentation, Case Based | MCQ, Quiz, Case Based, Morphology Chart, Viva | LQ, SQ, MCQ, Case Based, Viva | Pathology, Virology Community Medicine |
| | | | | Discuss etiopathogenesis for measles | C2 | MK | Lecture, Case Based | | | |
| | | | | Identify the epidemiology dimension of measles | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | | Explain how measles Infections spreads from person to person | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | | Describe the clinical features of measles | C2 | MK | Lecture, Case Based | | | |

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| | | | | State the investigations to be done for the patient suffering from Measles | C1 | MK | Lecture, Case Based | | | Pathology |
| | | KH | | Enumerate the diagnostic features for Measles | C1 | MK | Lecture, Case Based | | | |
| | | K | | Describe the potential complications of measles | C2 | MK | Lecture, Case Based | | | |
| | | KH | | Describe the differential diagnosis of measles | C2 | MK | Lecture, Case Based | | | |
| | | | | Discuss the prognosis of Measles | C2 | MK | Lecture, Case Based | | | |
| | | | | Summarize the treatment and management options for Measles | C2 | MK | Lecture, Case Based | | | Organon, Immunology |
| | | K | | Enumerate the indications of homoeopathic medicines for the Measles | C1 | MK | Lecture, Case Based | | | Materia Medica |

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| | | KH | | Describe the strategies to prevent Measles | C1 | MK | Lecture, Case Based | | | Community Medicine, Immunology |
| HomUG-PM I.25.6 | K&S | K | Mumps | Define Mumps | C1 | MK | Lecture, Multimedia presentation, Case Based | MCQ, Quiz, Case Based, Morphology Chart, Viva | LQ, SQ, MCQ, Case Based, Viva | Pathology, Virology Community Medicine |
| | | | | Discuss etiopathogenesis for Mumps | C2 | MK | Lecture, Case Based | | | |
| | | | | Identify the epidemiology dimension of mumps | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | | Explain how mumps infections spreads from person to person | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | | Describe the clinical manifestations of Mumps | C2 | MK | Lecture, Case Based | | | |
| | | | | State the investigations to be done for the patient suffering from Mumps | C1 | MK | Lecture, Case Based | | | Pathology |

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| | | KH | | Enumerate the diagnostic features for Mumps | C1 | MK | Lecture, Case Based | | | |
| | | K | | Describe the potential complications of Mumps | C2 | MK | Lecture, Case Based | | | |
| | | KH | | Describe the differential diagnosis of Mumps | C2 | MK | Lecture, Case Based | | | |
| | | | | Discuss the prognosis of Mumps | C2 | MK | Lecture, Case Based | | | |
| | | | | Summarize the treatment and management options for Measles | C2 | MK | Lecture, Case Based | | | Organon, Immunology |
| | | K | | Enumerate the indications of homoeopathic medicines for the Mumps | C1 | MK | Lecture, Case Based | | | Materia Medica |
| | | K | | Describe the strategies to prevent Mumps | C1 | MK | Lecture, Case Based | | | Community Medicine, Immunology |

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| HomUG -PM I.25.7 | K&S | K | Rabies | Define Rabies | C1 | DK | Lecture, Multimedia presentation, Assignment - Literature Review | MCQ, Quiz, Viva | SQ, MCQ, Viva | Pathology, Virology Community Medicine |
| | | | | Discuss etiopathogenesis for Rabies | C2 | DK | Lecture | | | |
| | | | | Identify the epidemiology dimension of mumps | C2 | DK | Lecture | | | Community Medicine |
| | | | | Explain how rabies infections spreads from person to person | C2 | DK | Lecture | | | Community Medicine |
| | | | | Describe the different clinical spectrum of Rabies | C2 | DK | Lecture | | | |
| | | | | State the investigations to be done for the patient suffering from Rabies | C1 | DK | Lecture | | | Pathology |
| | | KH | | Enumerate the diagnostic features for different | C1 | DK | Lecture | | | |

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|------------------|-----|----|-------------------------------|--|----|----|---------------------------------|-----------------|-------------|--------------------------------|
| | | | | spectrum of Rabies | | | | | | |
| | | K | | Describe the potential complications of Rabies | C2 | DK | Lecture | | | |
| | | KH | | Describe the differential diagnosis of Rabies | C2 | DK | Lecture | | | |
| | | | | Discuss the prognosis of Rabies | C2 | DK | Lecture | | | |
| | | | | Summarize the treatment and management options for Rabies | C2 | DK | Lecture | | | Organon, Immunology |
| | | K | | Enumerate the indications of homoeopathic medicines for the Rabies | C1 | DK | Lecture | | | Materia Medica |
| | | K | | Describe the strategies to prevent Rabies | C1 | DK | Lecture | | | Community Medicine, Immunology |
| HomUG -PM I.25.8 | K&S | K | Dengue Virus Infection | Define Dengue | C1 | MK | Lecture, Multimedia presentatio | MCQ, Quiz, Case | LQ, SQ, MCQ | Pathology, Virology, |

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| | | | | | | | n, Case Based | based, Viva | Case Based Viva | Community Medicine |
| | | | | Discuss etiopathogenesis for dengue infection | C2 | MK | Lecture, Case Based | | | |
| | | | | Identify the epidemiology dimension of dengue infection | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | | State the risk factors and high risk patients for dengue infection | C1 | MK | Lecture, Case Based | | | |
| | | | | Describe the different clinical spectrum of dengue infection | C2 | MK | Lecture, Case Based | | | |
| | | | | State the investigations to be done for the patient suffering from Dengue infection | C1 | MK | Lecture, Case Based | | | Pathology |
| | | KH | | Enumerate the diagnostic features for dengue infection | C1 | MK | Lecture, Case Based | | | |

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| | | K | | Describe the complications of dengue infections as per the different clinical spectrum | C2 | MK | Lecture, Case Based | | | |
| | | KH | | Describe the differential diagnosis of dengue infection | C2 | MK | Lecture, Case Based | | | |
| | | | | Discuss the prognosis of dengue infection as per the different clinical spectrum | C2 | MK | Lecture, Case Based | | | |
| | | | | Summarize the treatment and management options for dengue infection | C2 | MK | Lecture, Case Based | | | Organon |
| | | K | | Enumerate the indications of homoeopathic medicines for the dengue infections as per the different clinical spectrum | C1 | MK | Lecture, Case Based | | | Materia Medica |
| | | K | | Describe the preventive strategies for the dengue infection | C1 | MK | Lecture, Case Based | | | Community Medicine |

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| HomUG -PM I.25.9 | K&S | K | Japanese encephalitis virus [JEV] Infection | Define JEV Infection | C1 | NK | Lecture, Multimedia presentation, Assignment - Literature Review | MCQ, Quiz, Viva | SQ, MCQ, Viva | Pathology, Virology, Community Medicine |
| | | | | Discuss etiopathogenesis for JEV infection | C2 | NK | Lecture | | | |
| | | | | Identify the epidemiology dimension of JEV infection | C2 | NK | Lecture | | | Community Medicine |
| | | | | Explain how JEV infections spreads from person to person | C2 | NK | Lecture | | | Community Medicine |
| | | | | Describe the different clinical spectrum of JEV infection | C2 | NK | Lecture | | | |
| | | | | State the investigations to be done for the patient suffering from JEV infection | C1 | NK | Lecture | | | Pathology |

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| | | KH | | Enumerate the diagnostic features for different spectrum of JEV infection | C1 | NK | Lecture | | | |
| | | K | | Describe the potential complications of JEV infection | C2 | NK | Lecture | | | |
| | | KH | | Describe the differential diagnosis of JEV infection | C2 | NK | Lecture | | | |
| | | | | Discuss the prognosis of JEV infection | C2 | NK | Lecture | | | |
| | | | | Summarize the treatment and management options for JEV infection | C2 | NK | Lecture | | | Organon |
| | | K | | Enumerate the indications of homoeopathic medicines for the JEV infection | C1 | NK | Lecture | | | Materia Medica |
| | | | | Describe the strategies to prevent JEV infection | C1 | NK | Lecture | | | Community Medicine |

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| HomUG -PM I.25.10 | K&S | K | BIRD FLU | Define BIRD FLU Infection | C1 | NK | Lecture, Multimedia presentation, Assignment - Literature Review | MCQ, Quiz, Viva | SQ, MCQ , Viva | Pathology, Virology, Community Medicine |
| | | | | Discuss etiopathogenesis for BIRD FLU infection | C2 | NK | Lecture | | | |
| | | | | Identify the epidemiology dimension of BIRD FLU infection | C2 | NK | Lecture, field visit | | | Community Medicine |
| | | | | Explain how BIRD FLU Infections spreads from person to person | C2 | NK | Lecture, field visit | | | Community Medicine |
| | | | | Describe the clinical spectrum of BIRD FLU infection | C2 | NK | Lecture | | | |
| | | | | State the investigations to be done for the patient suffering | C1 | NK | Lecture | | | Pathology |

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| | | | | from BIRD FLU infection | | | | | | |
| | | KH | | Enumerate the diagnostic features for different spectrum of BIRD FLU infection | C1 | NK | Lecture | | | |
| | | K | | Describe the potential complications of BIRD FLU infection | C2 | NK | Lecture | | | |
| | | KH | | Describe the differential diagnosis of BIRD FLU infection | C2 | NK | Lecture | | | |
| | | | | Discuss the prognosis of BIRD FLU infection | C2 | NK | Lecture | | | |
| | | | | Summarize the treatment and management options for BIRD FLU infection | C2 | NK | Lecture | | | Organon |

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| | | K | | Enumerate the indications of homoeopathic medicines for the BIRD FLU infection | C1 | NK | Lecture | | | Materia Medica |
| | | | | Describe the strategies to prevent JEV infection | C1 | NK | Lecture | | | Community Medicine |
| HomUG -PM I.25.11 | K&S | K | Influenza A H1N1 virus | Define Influenza A H1N1 virus Infection - Swine Flu | C1 | MK | Lecture, Multimedia presentation, Case based, Assignment - Literature Review | MCQ, Quiz, Case based, Viva | SQ, MCQ, Case Based, Viva | Pathology, Virology, Community Medicine |
| | | | | Discuss etiopathogenesis for Influenza A H1N1 virus Infection | C2 | MK | Lecture, Case Based | | | |
| | | | | Identify the epidemiology dimension of Influenza A H1N1 virus Infection | C2 | MK | Lecture, field visit | | | Community Medicine |

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| | | | Explain how iH1N1 Infections spreads from person to person | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | Describe the clinical spectrum of Influenza A H1N1 virus Infection | C2 | MK | Lecture, Case Based | | | |
| | | | State the investigations to be done for the patient suffering from Influenza A H1N1 virus Infection | C1 | MK | Lecture, Case Based | | | Pathology |
| | | K | Enumerate the diagnostic features for different spectrum of Influenza A H1N1 virus Infection | C1 | MK | Lecture, Case Based | | | |
| | | K | Describe the potential complications of Influenza A H1N1 virus Infection | C2 | MK | Lecture, Case Based | | | |

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| | | KH | | Describe the differential diagnosis of Influenza A H1N1 virus Infection | C2 | MK | Lecture, Case Based | | | |
| | | | | Discuss the prognosis of Influenza A H1N1 virus Infection | C2 | MK | Lecture, Case Based | | | |
| | | | | Summarize the treatment and management options for Influenza A H1N1 virus Infection | C2 | MK | Lecture, Case Based | | | Organon |
| | | K | | Enumerate the indications of homoeopathic medicines for the Influenza A H1N1 virus Infection | C1 | MK | Lecture, Case Based | | | Materia Medica |
| | | | | Describe the strategies to prevent Influenza A H1N1 virus Infection | C1 | MK | Lecture, Case Based | | | Community Medicine |

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| HomUG -PM I.25.12 | K&S | K | Chikungunya virus Infection | Define Chikungunya virus Infection - Chikungunya virus Disease | C1 | MK | Lecture, Multimedia presentation, Case based, Assignmen t - Literature Review | MCQ, Quiz, Case based, Viva | SQ, MCQ , Case Based , Viva | Pathology, Virology, Community Medicine |
| | | | | Discuss etiopathogeneis for Chikungunya virus Infection | C2 | MK | Lecture, Case Based | | | |
| | | | | Identify the epidemiological dimensions of Chikungunya virus Infection, and Explain how it spreads from person to person | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | | Describe the clinical features of Chikungunya virus Infection | C2 | MK | Lecture, Case Based | | | |
| | | | | State the investigations to be done for the patient suffering from Chikungunya virus Infection | C1 | MK | Lecture, Case Based | | | Pathology |

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| | | KH | | Enumerate the diagnostic features for Chikungunya virus Infection | C1 | MK | Lecture, Case Based | | | |
| | | K | | Describe the potential complications of Influenza A H1N1 virus Infection | C2 | MK | Lecture, Case Based | | | |
| | | KH | | Describe the differential diagnosis of Chikungunya virus Infection | C2 | MK | Lecture, Case Based | | | |
| | | | | Discuss the prognosis of Chikungunya virus Infection | C2 | MK | Lecture, Case Based | | | |
| | | | | Summarize the treatment and management options for Chikungunya virus Infection | C2 | MK | Lecture, Case Based | | | Organon |
| | | K | | Enumerate the indications of homoeopathic medicines for the Chikungunya virus Infection | C1 | MK | Lecture, Case Based | | | Materia Medica |

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| | | | | Describe the strategies to prevent Chikungunya virus Infection | C1 | MK | Lecture, Case Based | | | Community Medicine |
| HomUG -PM I.25.13 | K&S | K | COVID 19 Virus Infection | Define COVID 19 Virus Infection | C1 | MK | Lecture, Multimedia presentation, Case based, Assignment - Literature Review | MCQ, Quiz, Case based, Viva | SQ, MCQ, Case Based, Viva | Pathology, Virology, Community Medicine |
| | | | | Discuss etiopathogenesis for COVID 19 Virus Infection | C2 | MK | Lecture, Case Based | | | |
| | | | | Identify the epidemiology dimension of COVID 19 Virus Infection | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | | Explain how COVID 19 Virus Infections spreads from person to person | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | | Describe the different clinical spectrum of | C2 | MK | Lecture, Case Based | | | |

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| | | | | COVID 19 Virus Infection | | | | | | |
| | | | | State the investigations to be done for the patient suffering from different clinical spectrum of COVID 19 Virus Infection | C1 | MK | Lecture, Case Based | | | Pathology |
| | | KH | | Enumerate the diagnostic features for different spectrum of COVID 19 Virus Infection | C1 | MK | Lecture, Case Based | | | |
| | | K | | Describe the potential complications of COVID 19 Virus Infection | C2 | MK | Lecture, Case Based | | | |
| | | KH | | Describe the differential diagnosis of COVID 19 Virus Infection | C2 | MK | Lecture, Case Based | | | |
| | | | | Discuss the prognosis of | C2 | MK | Lecture, Case Based | | | |

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| | | | | COVID 19 Virus Infection | | | | | | |
| | | | | Summarize the treatment and management options for COVID 19 Virus Infection | C2 | MK | Lecture, Case Based | | | Organon |
| | | K | | Enumerate the indications of homoeopathic medicines for the COVID 19 Virus Infection | C1 | MK | Lecture, Case Based | | | Materia Medica |
| | | | | Describe the strategies to prevent COVID 19 Virus Infection | C1 | MK | Lecture, Case Based | | | Community Medicine |
| HomUG -PM I.25.14 | K&S | K | Yellow Fever virus [YFV] Infection | Define Yellow Fever virus [YFV] Infection | C1 | NK | Lecture, Multimedia presentation | MCQ, Quiz, Viva | SQ, MCQ, Viva | Pathology, Virology, Community Medicine |
| | | | | Discuss etiopathogenesis for Yellow Fever virus [YFV] Infection | C2 | NK | Lecture, Case Based | | | |

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| | | | Identify the epidemiology dimension of Yellow Fever virus [YFV] Infection | C2 | NK | Lecture, field visit | | | Community Medicine |
| | | | Explain how Yellow Fever virus [YFV] Infection spreads from person to person | C2 | NK | Lecture, field visit | | | Community Medicine |
| | | | Describe the clinical spectrum of Yellow Fever virus [YFV] Infection | C2 | NK | Lecture, Case Based | | | |
| | | | State the investigations to be done for the patient suffering from Yellow Fever virus [YFV] Infection | C1 | NK | Lecture, Case Based | | | Pathology |
| | | KH | Enumerate the diagnostic features for Yellow Fever virus [YFV] Infection | C1 | NK | Lecture, Case Based | | | |

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| | | K | | Describe the potential complications of Yellow Fever virus [YFV] Infection | C2 | NK | Lecture, Case Based | | | |
| | | K | | Describe the differential diagnosis of Yellow Fever virus [YFV] Infection | C2 | NK | Lecture, Case Based | | | |
| | | | | Discuss the prognosis of Yellow Fever virus [YFV] Infection | C2 | NK | Lecture, Case Based | | | |
| | | | | Summarize the treatment and management options for Yellow Fever virus [YFV] Infection | C2 | NK | Lecture, Case Based | | | Organon |
| | | K | | Enumerate the indications of homoeopathic medicines for the Yellow Fever virus [YFV] Infection | C1 | NK | Lecture, Case Based | | | Materia Medica |

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| | | | | Describe the strategies to prevent Yellow Fever virus [YFV] Infection | C1 | NK | Lecture, Case Based | | | Community Medicine |
| HomUG -PM I.25.15 | K&S | K | Smallpox (variola) poxvirus infection | Define Smallpox (variola) - poxvirus infection | C1 | NK | Lecture, Multimedia presentation, Assignment - Literature Review | MCQ, Quiz, Viva | SQ, MCQ, Viva | Pathology, Virology, Community Medicine |
| | | | | Discuss etiopathogenesis for Smallpox (variola) - poxvirus infection | C2 | NK | Lecture | | | |
| | | | | Identify the epidemiology dimension of Smallpox (variola) - poxvirus infection | C2 | NK | Lecture | | | Community Medicine |
| | | | | Explain how Smallpox (variola) - poxvirus infection spreads | C2 | NK | Lecture | | | Community Medicine |

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| | | | | from person to person | | | | | | |
| | | | | Describe the clinical spectrum of Smallpox (variola) - poxvirus infection | C2 | NK | Lecture | | | |
| | | | | State the investigations to be done for the patient suffering from clinical spectrum of Smallpox (variola) - poxvirus infection | C1 | NK | Lecture | | | Pathology |
| | | KH | | Enumerate the diagnostic features of Smallpox (variola) - poxvirus infection | C1 | NK | Lecture | | | |
| | | K | | Describe the potential complications of Smallpox (variola) - poxvirus infection | C2 | NK | Lecture | | | |

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| | | KH | | Describe the differential diagnosis of Smallpox (variola) - poxvirus infection | C2 | NK | Lecture | | | |
| | | | | Discuss the prognosis of Smallpox (variola) - poxvirus infection | C2 | NK | Lecture | | | |
| | | | | Summarize the treatment and management options for Smallpox (variola) - poxvirus infection | C2 | NK | Lecture | | | Organon |
| | | K | | Enumerate the indications of homoeopathic medicines for the different stages related to Smallpox (variola) - poxvirus infection | C1 | NK | Lecture | | | Materia Medica |

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| | | | | Describe the strategies to prevent Smallpox (variola) - poxvirus infection | C1 | NK | Lecture | | | Community Medicine |
| HomUG -PM I.25.16 | K&S | K | HIV Infection | Define the terms "HIV Infection" and "AIDS Syndrome" | C1 | MK | Lecture, Multimedia presentation, Case based, Assignment - Literature Review | MCQ, Quiz, Case based, Chart, Model, Viva | LQ, SQ, MCQ, Case Based, Viva | Pathology, Virology, Community Medicine |
| | | | | Discuss etiopathogenesis for HIV Infection | C2 | MK | Lecture, Case Based | | | |
| | | | | Identify the epidemiology dimension of HIV Infection | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | | Explain how HIV Infections spreads from person to person | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | | Describe the different clinical spectrum of HIV Infection | C2 | MK | Lecture, Case Based | | | |

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| | | | | State the investigations to be done for the patient suffering from different clinical spectrum of HIV Infection | C1 | MK | Lecture, Case Based | | | Pathology |
| | | KH | | Enumerate the diagnostic features for different spectrum of HIV Infection | C1 | MK | Lecture, Case Based | | | |
| | | K | | Describe the potential complications of HIV Infection | C2 | MK | Lecture, Case Based | | | |
| | | KH | | Describe the differential diagnosis of HIV Infection | C2 | MK | Lecture, Case Based | | | |
| | | | | Discuss the prognosis of HIV Infection | C2 | MK | Lecture, Case Based | | | |
| | | | | Summarize the treatment and management options for HIV Infection | C2 | MK | Lecture, Case Based | | | Organon, Immunology |

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| | | K | | Enumerate the indications of homoeopathic medicines for the HIV Infection | C1 | MK | Lecture, Case Based | | | Materia Medica |
| | | | | Describe the strategies to prevent HIV Infection | C1 | MK | Lecture, Case Based | | | Community Medicine |
| HomUG -PM I.25.17 | K&S | K | Zika virus infection | Define Zika virus infection | C1 | NK | Lecture, Multimedia presentation | MCQ, Quiz, Viva | SQ, MCQ, Viva | Pathology, Virology, Community Medicine |
| | | | | Discuss etiopathogenesis for Zika virus infection | C2 | NK | Lecture | | | |
| | | | | Identify the epidemiology dimension of Zika virus infection | C2 | NK | Lecture | | | Community Medicine |
| | | | | Explain how Zika virus infection spreads from person to person | C2 | NK | Lecture | | | Community Medicine |
| | | | | Describe the different clinical spectrum of Zika virus infection | C2 | NK | Lecture | | | |

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| | | | | State the investigations to be done for the patient suffering from clinical spectrum of Zika virus infection | C1 | NK | Lecture | | | Pathology |
| | | KH | | Enumerate the diagnostic features for Zika virus infection | C1 | NK | Lecture | | | |
| | | K | | Describe the potential complications of Zika virus infection | C2 | NK | Lecture | | | |
| | | KH | | Describe the differential diagnosis of Zika virus infection | C2 | NK | Lecture | | | |
| | | | | Discuss the prognosis of Zika virus infection | C2 | NK | Lecture | | | |
| | | | | Summarize the treatment and management options for Zika virus infection | C2 | NK | Lecture | | | Organon |

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| | | K | | Enumerate the indications of homoeopathic medicines for the Zika virus infection | C1 | NK | Lecture | | | Materia Medica |
| | | | | Describe the strategies to prevent HIV Infection | C1 | NK | Lecture | | | Community Medicine |
| HomUG-PM I.25.18 | K&S | K | Rickettsial infection | Define Rickettsial infection | C1 | NK | Lecture, Multimedia presentation | MCQ, Quiz, Viva | SQ, MCQ, Viva | Pathology, Virology, Community Medicine |
| | | | | Discuss etiopathogenesis for Rickettsial infection | C2 | NK | Lecture | | | |
| | | | | Identify the epidemiology dimension of Rickettsial infection | C2 | NK | Lecture | | | Community Medicine |
| | | | | Explain how Rickettsial infection spreads from person to person | C2 | NK | Lecture | | | Community Medicine |
| | | | | Describe the common clinical spectrum of Rickettsial infection | C2 | NK | Lecture | | | |

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| | | | State the investigations to be done for the patient suffering from different clinical spectrum of Rickettsial infection | C1 | NK | Lecture | | | Pathology |
| | | KH | Enumerate the diagnostic features for different spectrum of Rickettsial infection | C1 | NK | Lecture | | | |
| | | K | Describe the potential complications of Rickettsial infection | C2 | NK | Lecture | | | |
| | | KH | Describe the differential diagnosis of Rickettsial infection | C2 | NK | Lecture | | | |
| | | | Discuss the prognosis of Rickettsial infection | C2 | NK | Lecture | | | |

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| | | | | Summarize the treatment and management options for Rickettsial infection | C2 | NK | Lecture | | | Organon |
| | | K | | Enumerate the indications of homoeopathic medicines for the Rickettsial infection | C1 | NK | Lecture | | | Materia Medica |
| | | | | Describe the strategies to prevent Rickettsial infection | C1 | NK | Lecture | | | Community Medicine |
| HomUG-PM I.25.19 | K&S | K | Staphylococcus aureus infection | Define Staphylococcus aureus infection | C1 | DK | Lecture, Multimedia presentation, Case Based | MCQ, Quiz, Case Based, Morphology Chart, Viva | SQ, MCQ, Case Based, Viva | Pathology, Bacteriology, Community Medicine |
| | | | | State the factors predisposing to S. aureus colonisation and its infections / disease | C1 | DK | Lecture, Case Based | | | |
| | | | | Discuss etiopathogenesis for S. aureus infection | C2 | DK | Lecture, Case Based | | | |

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| | | | | Identify the epidemiology dimension of S. aureus infection | C2 | DK | Lecture, field visit | | | Community Medicine |
| | | | | Explain how S. aureus infection spreads from person to person | C2 | DK | Lecture, field visit | | | Community Medicine |
| | | | | Enumerate the common clinical illness caused by S. aureus infection | C1 | DK | Lecture, Case Based | | | |
| | | | | Describe the clinical manifestation of common clinical illness which are caused by S. aureus infection | C2 | DK | Lecture, Case Based | | | |
| | | | | State the investigations to be done for the patient suffering from common clinical illness caused by S. aureus infection | C1 | DK | Lecture, Case Based | | | Pathology |

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| | | KH | | Enumerate the diagnostic features for common clinical illness caused by S. aureus infection | C1 | DK | Lecture, Case Based | | | | |
| | | K | | Describe the potential complications of common clinical illness caused by S. aureus infection | C2 | DK | Lecture, Case Based | | | | |
| | | KH | | Describe the differential diagnosis of common clinical illness caused by S. aureus infection | C2 | DK | Lecture, Case Based | | | | |
| | | | | Discuss the prognosis of common clinical illness caused by S. aureus infection | C2 | DK | Lecture, Case Based | | | | |
| | | | | Summarize the treatment and management options for common clinical | C2 | DK | Lecture, Case Based | | | Organon | |

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| | | | | illness caused by S. aureus infection | | | | | | |
| | | K | | Enumerate the indications of homoeopathic medicines for the common clinical illness caused by S. aureus infection | C1 | DK | Lecture, Case Based | | | Materia Medica |
| | | | | Describe the strategies to prevent common clinical illness caused by S. aureus infection | C1 | DK | Lecture, Case Based | | | Community Medicine |
| HomUG -PM I.25.20 | K&S | K | Streptococcal infections | Define Streptococcal infections | C1 | DK | Lecture, Multimedia presentation, Case Based | MCQ, Quiz, Case Based, Morphology Chart, Viva | SQ, MCQ, Case Based, Viva | Pathology, Bacteriology, Community Medicine |
| | | | | Discuss etiopathogenesis for Streptococcal infections | C2 | DK | Lecture, Case Based | | | |
| | | | | Identify the epidemiology dimension of Streptococcal infections | C2 | DK | Lecture, field visit | | | Community Medicine |

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| | | | Explain how Streptococcal infections spreads from person to person | C2 | DK | Lecture, field visit | | | Community Medicine |
| | | | Enumerate the common clinical illness caused by Streptococcal infections | C1 | DK | Lecture, Case Based | | | |
| | | | Describe the clinical manifestation of comon clinical illness which are caused by Streptococcal infections | C2 | DK | Lecture, Case Based | | | |
| | | | State the investigations to be done for the patient suffering from common clinical illness caused by Streptococcal infections | C1 | DK | Lecture, Case Based | | | Pathology |
| | | KH | Enumerate the diagnostic features for common clinical illness caused by S. aureus infection | C1 | DK | Lecture, Case Based | | | |

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| | | K | | Describe the potential complications of common clinical illness caused by S. aureus infection | C2 | DK | Lecture, Case Based | | | |
| | | KH | | Describe the differential diagnosis of common clinical illness caused by Streptococcal infections | C2 | DK | Lecture, Case Based | | | |
| | | | | Discuss the prognosis of common clinical illness caused by S. aureus infection | C2 | DK | Lecture, Case Based | | | |
| | | | | Summarize the treatment and management options for common clinical illness caused by Streptococcal infection | C2 | DK | Lecture, Case Based | | | Organon |

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| | | K | | Enumerate the indications of homoeopathic medicines for the common clinical illness caused by Streptococcal infection | C1 | DK | Lecture, Case Based | | | Materia Medica |
| | | | | Describe the strategies to prevent common clinical illness caused by Streptococcal infection | C1 | DK | Lecture, Case Based | | | Community Medicine |
| HomUG -PM I.25.21 | K&S | K | Typhoid Fever | Define Typhoid Fever | C1 | MK | Lecture, Multimedia presentation, Case based, Assignment - Literature Review | MCQ, Quiz, Case based, Viva | LQ, SQ, MCQ, Case Based, Viva | Pathology, Bacteriology, Community Medicine |
| | | | | Discuss etiopathogenesis for Typhoid Fever | C2 | MK | Lecture, Case Based | | | |
| | | | | Identify the epidemiology dimension of Typhoid Fever | C2 | MK | Lecture, field visit | | | Community Medicine |

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|--|--|----|--|----|----|----------------------|--|--|--------------------|
| | | | Explain how Typhoid Fever spreads from person to person | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | Describe the clinical course of clinical manifestation of Typhoid Fever | C2 | MK | Lecture, Case Based | | | |
| | | | State the investigations to be done for the patient suffering from Typhoid Fever | C1 | MK | Lecture, Case Based | | | Pathology |
| | | KH | Enumerate the diagnostic features for Typhoid Fever | C1 | MK | Lecture, Case Based | | | |
| | | K | Describe the potential complications of Typhoid Fever | C2 | MK | Lecture, Case Based | | | |
| | | KH | Describe the differential diagnosis of Typhoid Fever | C2 | MK | Lecture, Case Based | | | |
| | | | Discuss the prognosis of Typhoid Fever | C2 | MK | Lecture, Case Based | | | |

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|-------------------|-----|---|------------------------------------|---|----|----|--|-----------------------------|---------------------------|---|
| | | K | | Summarize the treatment and management options for Typhoid Fever | C2 | MK | Lecture, Case Based | | | Organon |
| | | | | Enumerate the indications of homoeopathic medicines for Typhoid Fever | C1 | MK | Lecture, Case Based | | | Materia Medica |
| | | | | Describe the strategies to prevent Typhoid Fever | C1 | MK | Lecture, Case Based | | | Community Medicine |
| HomUG -PM I.25.22 | K&S | K | Acute Viral Gastroenteritis | Define Acute Viral Gastroenteritis | C1 | MK | Lecture, Multimedia presentation, Case based, Assignment - Literature Review | MCQ, Quiz, Case based, Viva | SQ, MCQ, Case Based, Viva | Pathology, Bacteriology, Community Medicine |
| | | | | Discuss etiopathogenesis for Acute Viral Gastroenteritis | C2 | MK | Lecture, Case Based | | | |
| | | | | Identify the epidemiology dimension of Acute Viral Gastroenteritis | C2 | MK | Lecture, field visit | | | Community Medicine |

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|--|--|----|--|----|----|----------------------|--|--|--------------------|
| | | | Explain how infection of Acute Viral Gastroenteritis spreads from person to person | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | Describe the clinical manifestation of Acute Viral Gastroenteritis | C2 | MK | Lecture, Case Based | | | |
| | | | State the investigations to be done for the patient suffering from Acute Viral Gastroenteritis | C1 | MK | Lecture, Case Based | | | Pathology |
| | | KH | Enumerate the diagnostic features for Acute Viral Gastroenteritis | C1 | MK | Lecture, Case Based | | | |
| | | K | Describe the potential complications of Acute Viral Gastroenteritis | C2 | MK | Lecture, Case Based | | | |
| | | KH | Describe the differential diagnosis of Acute Viral Gastroenteritis | C2 | MK | Lecture, Case Based | | | |

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|-------------------|-----|---|----------------|---|----|----|--|-----------------------------|-------------------------------|--|
| | | K | | Discuss the prognosis of Acute Viral Gastroenteritis | C2 | MK | Lecture, Case Based | | | |
| | | | | Summarize the treatment and management options for Acute Viral Gastroenteritis | C2 | MK | Lecture, Case Based | | | |
| | | | | Enumerate the indications of homoeopathic medicines for Acute Viral Gastroenteritis | C1 | MK | Lecture, Case Based | | | |
| | | | | Describe the strategies to prevent Acute Viral Gastroenteritis | C1 | MK | Lecture, Case Based | | | |
| HomUG -PM I.25.23 | K&S | K | Cholera | Define Cholera | C1 | MK | Lecture, Multimedia presentation, Case based, Assignment - Literature Review | MCQ, Quiz, Case based, Viva | LQ, SQ, MCQ, Case Based, Viva | Pathology, Bacteriology Community Medicine |

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|--|--|----|--|----|----|----------------------|--|--|--|--|
| | | | Discuss etiopathogeneis for Cholera | C2 | MK | Lecture, Case Based | | | | |
| | | | Identify the epidemiology dimension of Cholera | C2 | MK | Lecture, field visit | | | | |
| | | | Explain how infection of Cholera spreads from person to person | C2 | MK | Lecture, field visit | | | | |
| | | | Describe the clinical manisfestation of Cholera | C2 | MK | Lecture, Case Based | | | | |
| | | | State the investigations to be done for the patient suffering from Cholera | C1 | MK | Lecture, Case Based | | | | |
| | | | Enumerate the diagnostic features for Cholera | C1 | MK | Lecture, Case Based | | | | |
| | | KH | Describe the potential complications of Cholera | C2 | MK | Lecture, Case Based | | | | |
| | | K | Describe the differential | C2 | MK | Lecture, Case Based | | | | |
| | | KH | | | | | | | | |

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|-------------------|-----|---|----------------|---|----|----|----------------------------------|-----------------|---------------|---|
| | | | | diagnosis of Cholera | | | | | | |
| | | | | Discuss the prognosis of Cholera | C2 | MK | Lecture, Case Based | | | |
| | | | | Summarize the treatment and management options for Cholera | C2 | MK | Lecture, Case Based | | | |
| | | | | Enumerate the indications of homoeopathic medicines for Cholera | C1 | MK | Lecture, Case Based | | | Organon |
| | | | | Describe the strategies to prevent Cholera | C1 | MK | Lecture, Case Based | | | Materia Medica |
| HomUG -PM I.25.24 | K&S | K | Tetanus | Define Tetanus | C1 | NK | Lecture, Multimedia presentation | MCQ, Quiz, Viva | SQ, MCQ, Viva | Pathology, Bacteriology, Community Medicine |
| | | | | Discuss etiopathogenesis for Tetanus | C2 | NK | Lecture | | | |
| | | | | Describe the clinical manifestation of Tetanus | C2 | NK | Lecture | | | |

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|--|--|----|--|--|----|----|---------|--|--|--------------------|
| | | KH | | Enumerate the diagnostic features for Tetanus | C1 | NK | Lecture | | | |
| | | K | | Describe the potential complications of Tetanus | C2 | NK | Lecture | | | |
| | | KH | | Describe the differential diagnosis of Tetanus | C2 | NK | Lecture | | | |
| | | | | Discuss the prognosis of Tetanus | C2 | NK | Lecture | | | |
| | | | | Summarize the treatment and management options for Tetanus | C2 | NK | Lecture | | | Organon |
| | | K | | Enumerate the indications of homoeopathic medicines for Tetanus | C1 | NK | Lecture | | | Materia Medica |
| | | | | Describe the strategies to prevent and / or prophylaxis in the wound management of Tetanus | C1 | NK | Lecture | | | Community Medicine |

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|-------------------------|-----|----|----------------|--|----|----|--|--------------------|----------------------|---|
| HomUG -PM I.25.25 | K&S | K | Anthrax | Define Anthrax | C1 | NK | Lecture, Multimedia presentation | MCQ, Quiz, Viva | SQ, MCQ , Viva | Pathology, Bacteriology Community Medicine |
| | | | | Discuss etiopathogeneis for Anthrax | C2 | NK | Lecture | | | |
| | | | | Identify the epidemiology dimension of Anthrax | C2 | NK | Lecture | | | Community Medicine |
| | | | | Explain how infection of Anthrax spreads from person to person | C2 | NK | Lecture | | | Community Medicine |
| | | | | Describe the clinical manisfestation of Anthrax / brucellosis / plague | C2 | NK | Lecture | | | |
| | | | | State the investigations to be done for the patient suffering from Anthrax | C1 | NK | Lecture | | | Pathology |
| | | KH | | Enumerate the diagnostic features for Anthrax | C1 | NK | Lecture | | | |

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|-------------------|-----|----|-------------|---|----|----|----------------------------------|-----------------|----------------|--|
| | | K | | Describe the potential complications of Anthrax | C2 | NK | Lecture | | | |
| | | KH | | Describe the differential diagnosis of Anthrax | C2 | NK | Lecture | | | |
| | | | | Discuss the prognosis of Anthrax | C2 | NK | Lecture | | | |
| | | | | Summarize the treatment and management options for Anthrax | C2 | NK | Lecture | | | Organon |
| | | K | | Enumerate the indications of homoeopathic medicines for Anthrax | C1 | NK | Lecture | | | Materia Medica |
| | | | | Describe the strategies to prevent Anthrax | C1 | NK | Lecture | | | Community Medicine |
| HomUG -PM I.25.26 | K&S | K | Brucellosis | Define Brucellosis | C1 | NK | Lecture, Multimedia presentation | MCQ, Quiz, Viva | SQ, MCQ , Viva | Pathology, Bacteriology Community Medicine |
| | | | | Discuss etiopathogeneis for Brucellosis | C2 | NK | Lecture | | | |

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|--|--|----|--|----|----|---------|--|--|--------------------|
| | | | Identify the epidemiology dimension of Brucellosis | C2 | NK | Lecture | | | Community Medicine |
| | | | Explain how infection of Brucellosis spreads from person to person | C2 | NK | Lecture | | | Community Medicine |
| | | | Describe the clinical manifestation of Brucellosis | C2 | NK | Lecture | | | |
| | | | State the investigations to be done for the patient suffering from Brucellosis | C1 | NK | Lecture | | | Pathology |
| | | KH | Enumerate the diagnostic features for Brucellosis | C1 | NK | Lecture | | | |
| | | K | Describe the potential complications of Brucellosis | C2 | NK | Lecture | | | |
| | | KH | Describe the differential diagnosis of Brucellosis | C2 | NK | Lecture | | | |

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|-------------------------|-----|---|---------------|---|----|----|--|-----------------|-------------------|---|
| | | K | | Discuss the prognosis of Brucellosis | C2 | NK | Lecture | | | |
| | | | | Summarize the treatment and management options for Brucellosis | C2 | NK | Lecture | | | |
| | | | | Enumerate the indications of homoeopathic medicines for Brucellosis | C1 | NK | Lecture | | | |
| | | | | Describe the strategies to prevent Brucellosis | C1 | NK | Lecture | | | |
| HomUG -PM I.25.27 | K&S | K | Plague | Define Plague | C1 | DK | Lecture, Multimedia presentation, Assignment - Literature Review | MCQ, Quiz, Viva | LQ, SQ, MCQ, Viva | Pathology, Bacteriology, Community Medicine |
| | | | | Discuss etiopathogenesis for Plague | C2 | DK | Lecture | | | |
| | | | | Identify the epidemiology dimension of Plague | C2 | DK | Lecture | | | Community Medicine |

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|--|--|----|---|----|----|---------|--|--|--------------------|
| | | | Explain how infection of Plague spreads from person to person | C2 | DK | Lecture | | | Community Medicine |
| | | | Describe the clinical manifestation of Plague | C2 | DK | Lecture | | | |
| | | | State the investigations to be done for the patient suffering from Plague | C1 | DK | Lecture | | | Pathology |
| | | KH | Enumerate the diagnostic features for Plague | C1 | DK | Lecture | | | |
| | | K | Describe the potential complications of Plague | C2 | DK | Lecture | | | |
| | | KH | Describe the differential diagnosis of Plague | C2 | DK | Lecture | | | |
| | | | Discuss the prognosis of Plague | C2 | DK | Lecture | | | |

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|---------------------|-----|---|----------------|--|----|----|--|---|-------------------------------|---|
| | | | | Summarize the treatment and management options for Plague | C2 | DK | Lecture | | | Organon |
| | | K | | Enumerate the indications of homoeopathic medicines for Plague | C1 | DK | Lecture | | | Materia Medica |
| | | | | Describe the strategies to prevent Plague | C1 | DK | Lecture | | | Community Medicine |
| HomUG-PM I.25.28 | K&S | K | Leprosy | Define Leprosy | C1 | MK | Lecture, Multimedia presentation, Case based, Assignment - Literature Review | MCQ, Quiz, Case Based, Model, Chart, Viva | LQ, SQ, MCQ, Case Based, Viva | Pathology, Bacteriology, Community Medicine |
| | | | | Discuss etiopathogenesis for Leprosy | C2 | MK | Lecture, Case Based | | | |
| | | | | Identify the epidemiology dimension of Leprosy | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | | Explain how infection of Leprosy spreads from person to person | C2 | MK | Lecture, field visit | | | Community Medicine |

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|--|--|----|--|---|----|----|---------------------|--|--|-----------|
| | | | | Describe the different clinical manifestation of different types of Leprosy | C2 | MK | Lecture, Case Based | | | |
| | | | | State the investigations to be done for the patient suffering from Leprosy | C1 | MK | Lecture, Case Based | | | Pathology |
| | | KH | | Enumerate the diagnostic features for different types of Leprosy | C1 | MK | Lecture, Case Based | | | |
| | | K | | Describe the potential complications of different types of Leprosy | C2 | MK | Lecture, Case Based | | | |
| | | KH | | Describe the differential diagnosis of different types of Leprosy | C2 | MK | Lecture, Case Based | | | |
| | | | | Discuss the prognosis of different types of Leprosy | C2 | MK | Lecture, Case Based | | | |

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|-------------------|-----|---|---------------------|--|----|----|--|---|-------------------------------|---|
| | | | | Summarize the treatment and management options for different types of Leprosy | C2 | MK | Lecture, Case Based | | | Organon |
| | | K | | Enumerate the indications of homoeopathic medicines for different types of Leprosy | C1 | MK | Lecture, Case Based | | | Materia Medica |
| | | | | Describe the strategies to prevent different types of Leprosy | C1 | MK | Lecture, Case Based | | | Community Medicine |
| HomUG -PM I.25.29 | K&S | K | Tuberculosis | Define Tuberculosis | C1 | MK | Lecture, Multimedia presentation, Case based, Assignment - Literature Review | MCQ, Quiz, Case Based, Model, Chart, Viva | LQ, SQ, MCQ, Case Based, Viva | Pathology, Bacteriology, Community Medicine |
| | | | | Discuss etiopathogenesis for Tuberculosis | C2 | MK | Lecture, Case Based | | | |
| | | | | Identify the epidemiology dimension of Tuberculosis | C2 | MK | Lecture, field visit | | | Community Medicine |

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|--|--|----|--|----|----|----------------------|--|--|--------------------|
| | | | Explain how infection of Tuberculosis spreads from person to person | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | Describe the different clinical manifestation of different types of Tuberculosis | C2 | MK | Lecture, Case Based | | | |
| | | | State the investigations to be done for the patient suffering from different types of Tuberculosis | C1 | MK | Lecture, Case Based | | | Pathology |
| | | KH | Enumerate the diagnostic features of different types of Tuberculosis | C1 | MK | Lecture, Case Based | | | |
| | | K | Describe the potential complications of of different types of Tuberculosis | C2 | MK | Lecture, Case Based | | | |
| | | KH | Describe the differential diagnosis of of different types of Tuberculosis | C2 | MK | Lecture, Case Based | | | |

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|----------------------|-----|---|---------------|---|----|----|--|---|-------------------------------|---|
| | | K | | Discuss the prognosis of different types of Tuberculosis | C2 | MK | Lecture, Case Based | | | |
| | | | | Summarize the treatment and management options for different types of Tuberculosis | C2 | MK | Lecture, Case Based | | | |
| | | | | Enumerate the indications of homoeopathic medicines for different types of Tuberculosis | C1 | MK | Lecture, Case Based | | | |
| | | | | Describe the strategies to prevent different types of Tuberculosis | C1 | MK | Lecture, Case Based | | | |
| HomUG -PM I.25.30 | K&S | K | Malaria Fever | Define Malaria Fever | C1 | MK | Lecture, Multimedia presentation, Case Based | MCQ, Quiz, Case Based, Model, Chart, Viva | LQ, SQ, MCQ, Case Based, Viva | Pathology, Parasitology, Community Medicine |
| | | | | Discuss etiopathogenesis for different types of Malaria Fever | C2 | MK | Lecture, Case Based | | | |

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|--|--|----|---|----|----|----------------------|--|--|--------------------|
| | | | Identify the epidemiology dimension of Malaria Fever | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | Explain how infection of Malaria spreads from person to person | C2 | MK | Lecture, field visit | | | Community Medicine |
| | | | Describe the different clinical manifestation of different types of Malaria Fever | C2 | MK | Lecture, Case Based | | | |
| | | | State the investigations to be done for the patient suffering from different types of Malaria Fever | C1 | MK | Lecture, Case Based | | | Pathology |
| | | KH | Enumerate the diagnostic features of different types of Malaria Fever | C1 | MK | Lecture, Case Based | | | |
| | | K | Describe the potential complications of different types of Malaria Fever | C2 | MK | Lecture, Case Based | | | |

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|--|--|----|--|--|----|----|---------------------|--|--|--------------------|
| | | KH | | Describe the differential diagnosis of different types of Malaria Fever | C2 | MK | Lecture, Case Based | | | |
| | | | | Discuss the prognosis of different types of Malaria Fever | C2 | MK | Lecture, Case Based | | | |
| | | | | Summarize the treatment and management options for different types of Malaria Fever | C2 | MK | Lecture, Case Based | | | Organon |
| | | K | | Enumerate the indications of homoeopathic medicines for different types of Malaria Fever | C1 | MK | Lecture, Case Based | | | Materia Medica |
| | | | | Describe the strategies to prevent different types of Malaria Fever | C1 | MK | Lecture, Case Based | | | Community Medicine |
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6.5. Competency Tables for Bedside Clinics

| Sl. No. | Domain of Competency | Miller's Level | Content | SLO | Blooms Domain/ Guilbert's Level | Priority | T-L Methods | Assessment | | Integration |
|--------------------|----------------------|----------------|--|---|------------------------------------|----------|------------------------------------|---|------|---|
| | | | | | | | | F | S | |
| HomUG-PM I.26.1 | K&S | SH | Taking patient history including chief complaints, present illness, past medical history, family history, and personal history | Demonstration of effective communication and questioning skills | A1/2 | MK | Simulated patient encounters | Observation of history-taking sessions, Peer feedback | OSCE | Case discussions with clinical preceptors |
| HomUG-PM I.26.2 | PC | | Conducting a systematic physical examination including general examination, systemic examination, and regional examination | Demonstration of proficiency in physical examination techniques | P2 | MK | Simulation, Bedside demonstrations | Observation of physical examination sessions, Peer feedback | OSCE | Clinical rotations with supervision |

| | | | | | | | | | | |
|------------------------|--|--|---|--|-------|----|--|--|--------------------------------|--|
| HomU G-PM I.26.3 | | | Analyzing patient history, physical examination findings, and relevant investigations to develop a list of possible diagnoses | Demonstration of critical thinking and clinical reasoning skills | P2/A2 | MK | Case-based discussions, Problem-solving scenarios | Case analyses, Guided discussions | Viva voce, Bedside examination | Interactive case-based learning with faculty |
| HomU G-PM I.26.4 | | | Developing appropriate management strategies including pharmacological, non-pharmacological, and lifestyle interventions | Demonstration of knowledge of evidence-based medicine and treatment guidelines | P2/A2 | MK | Small group discussions, Clinical case presentations | Group Discussions | OSCE | Clinical rotations with treatment planning exercises |
| HomU G-PM I.26.5 | | | Demonstrating empathetic communication, active listening, and professionalism in patient interactions and team communication | Demonstration of interpersonal and communication skills | A2 | MK | Simulated patient encounters | Observation of communication skills, Peer feedback | OSCE | Communication exercises |

| | | | | | | | | | | |
|------------------------|--|--|--|--|----|----|---------------------------------------|--|------|--|
| HomU G-PM I.26.6 | | | Recording patient history, examination findings, assessments, and management plans in a clear and organized manner | Demonstration of effective documentation skills | P3 | MK | Charting exercises, Case note writing | Review of documentation, Peer feedback | OSCE | Clinical rotations with documentation review |
| HomU G-PM I.26.7 | | | Adhering to professional standards, maintaining patient confidentiality, and respecting patient autonomy and diversity | Demonstration of ethical decision-making and professionalism | A3 | MK | Group Discussions | Observations of professional conduct, Peer evaluations | OSCE | Reflection exercises and discussions |

7. Teaching learning methods

| Lectures | Non-lectures (clinical / practical / demonstrative) |
|---|--|
| Classroom lectures with oral presentation/ AV aid | Clinical Demonstration |
| Integrated teaching | Case Based Discussion |
| | PBL - Problem Based Learning |
| | Simulation – with mannequins |
| | OSCE – Objective Structure Clinical Examination |
| | Mini-CEX - mini clinical evaluation exercise |
| | Seminar: Integrated Medical Education Seminar |
| | Tutorials: Small Group Projects |
| | Chart and Model |
| | Assignment |

8. Details of assessment

Note- The assessment in II BHMS shall be done only as Internal Assessment (IA) in terms of Periodical Assessments (PA) and Term Tests (TT) as detailed below. There shall not be any Final University Examination (FUE) at this level. The marks obtained in IA during II BHMS will be added to the marks of IA in the IV BHMS University Examination.

Overall Scheme of Internal Assessment (IA)**

| Professional Course/ Subject | Term I (1-6 Months) | | Term II (7-12 Months) | |
|----------------------------------|------------------------|--|-------------------------|--|
| | PA I (end of 3 months) | TT I (end of 6 months) | PA II (end of 9 months) | TT II (end of 12 months) |
| II BHMS/ Practice of Medicine | 20 Marks Viva- A | 100 Marks Clinical/Practical and Viva - E i) Viva voce -50 marks ii) Clinical/practical*- 50 | 20 Marks Viva- B | 100 Marks Clinical/Practical and Viva - F i) Viva voce -50 marks ii) Clinical/practical*- 50 |

****Practical Examinations:***

- Case taking: 20 Marks for case taking, including history, symptoms of patient in detail.
- Examination skills: 10 marks for the proper demonstration of skills.
- Bedside Q n A session: 15 marks for demonstrating understanding of concepts and for applying knowledge to identify the problem.
- Spotters: 5 marks (Instruments: Identification and Indications; Reports: Observations, Causes, Diagnosis/Differential Diagnosis)

****Method of Calculation of Internal Assessment Marks in II BHMS for Final University Examination to be held in IV BHMS:**

| Marks of PA I | Marks of PA II | Periodical Assessment Average PA I+ PA II /2 | Marks of TT I | Marks of TT II | Terminal Test Average TT I + TT II / 200 x 20 | Final Internal Assessment Marks |
|---------------|----------------|---|---------------|----------------|--|---------------------------------|
| A | B | D | E | F | G | D+G/2 |

9. List of recommended text/reference books

- Alagappan, R. (2017). *Manual of Practical Medicine* (6th ed.). Jaypee Brothers Medical Publishers (P) Ltd.
- Penman I.D., Ralston S.H., Strachan M.W.J., & Hobson R. (2022). *Davidson's Principles and Practice of Medicine* (24th ed.) Elsevier Health Sciences.
- Anudeep, B. A. P. (2022). *Insider's guide to clinical medicine* (2nd ed.) Jaypee Brothers Medical (P) Ltd.
- Golwala, A. F., & Vakil, R. J. (2008). *Physical diagnosis A textbook of symptoms and signs* (16th ed.). Media Promoters & Publishers.
- Glynn, M., & Drake, W. M. (2017). *Hutchison's clinical methods: An Integrated Approach to Clinical Practice*. Saunders.
- *Harrison's principles of internal medicine* (2vols) (21st ed.). (2022). McGraw-Hill.
- Bickley. (2016). *Bates' pocket guide to physical exam & history taking* (8th ed.). Wolters Kluwer India Pvt. Ltd.
- Dover, A. R., Innes, J. A., & Fairhurst, K. (2023). *Macleod's clinical examination international edition*. (15th ed.). Elsevier.
- Allen, H. C. (1998). *Therapeutics of intermittent fever*. B. Jain Publishers
- Bell, J. B. (2016). *The homeopathic therapeutics of diarrhea, dysentery, cholera, cholera morbus, cholera infantum, and all other loose evacuations of the bowels (Classic reprint)*. Forgotten Books.

- Boericke, W. (2022). *New Manual of Homoeopathic Materia Medica and Repertory with Relationship of Remedies: Including Indian Drugs, Nosodes Uncommon, Rare Remedies, Mother Tinctures, Relationship, Sides of the Body, Drug Affinities and List of Abbreviation* (3rd ed.). B Jain Publishers Pvt Limited.
- Hahnemann, S. (2004). *Organon of Medicine*. B Jain Publishers Pvt Limited.
- Lilienthal, S. (2005). *Homoeopathic therapeutics*. B Jain Pub Pvt Limited.
- Nash, E. B. (2002). *Leaders in homoeopathic therapeutics*. B Jain Pub Pvt Limited.
- Tyler, M. L. (1993). *Pointers to the common remedies*. B. Jain Publishers

10. List of contributors:

A. Dr Dilipkumar G. Nandha

MD (Hom), MBA (Edu. Mgt.)

Professor and HOD, [Class – I], Dept of Practice of Medicine,
Government Homoeopathic Medical College & Hospital,
Dethali, Ta: Siddpur, Dist: Patan – 384151, Gujarat
M: 9376939631, email: drdgnandha@gmail.com

B. Dr M K Kamath, MD(Hom)

Professor and HOD, Dept of Practice of Medicine
Father Muller Homoeopathic Medical College & Hospital,
University Road, Deralakatte, Mangalore 575018

Subject name: Gynaecology and Obstetrics

Subject code: HomUG-ObGy-I

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1. Preamble

Obstetrics stands at the forefront of maternal health, emphasizing the care and well-being of expectant mothers throughout pregnancy, childbirth, and the postpartum period. From prenatal care to labour and delivery, obstetricians play a pivotal role in ensuring safe pregnancies and healthy births. Gynaecology encompasses the diagnosis and treatment of conditions affecting the female reproductive system, from adolescence through menopause, including menstrual disorders, fertility concerns, sexually transmitted infections, and gynecological cancers. Infant care extends beyond the moment of birth, encompassing the critical early stage of a newborn's life. From breastfeeding guidance to newborn screening and immunization.

The fields of Obstetrics, Infant care and Gynaecology intersect to provide holistic care to women across the reproductive lifespan. By addressing the physical, emotional and social aspects of women's health, healthcare providers empower individuals to make informed decisions about their bodies and well-being. In the realm of obstetrics and gynaecology, homoeopathy offers a holistic approach that seeks to address the physical, emotional and spiritual aspects of women's health.

Homoeopathy, a system of medicine based on the principle of "like cures like" and individualized treatment, can play a significant role in promoting well-being and managing various conditions in obstetrics and gynaecology. Homoeopathy offers safe and gentle remedies to support women throughout pregnancy. From alleviating common discomforts such as nausea, fatigue, and back pain to addressing emotional concerns like anxiety and mood swings, homoeopathic treatments can provide relief without adverse effects on the developing fetus. Additionally, homoeopathy can aid in preparing the mother's body for labor and delivery, promoting a smooth and natural

In the postpartum period, homeopathy offers support for new mothers as they navigate the physical and emotional changes following childbirth, and breastfeeding difficulties, promote lactation, and support the overall recovery of the mother. Homeopathy provides a holistic approach to managing various gynaecological conditions, including menstrual disorders, hormonal imbalances, polycystic ovarian syndrome (PCOS), endometriosis, and menopausal symptoms. Homeopathy considers the individual's unique constitution and emotional state.

In conclusion, homoeopathy offers a holistic and patient-centred approach to obstetrics and gynaecology, addressing the physical, emotional, and spiritual aspects of women's health.

2. Course outcomes

At the end of BHMS II course, the students should be able to-

- i. Understand applied anatomy, endocrinology and physiology including abnormality of female reproductive system during puberty, menstruation, menopause and in different stages of womanhood.
- ii. Learn skills in case taking, physical examination, diagnostic procedures and managements of benign and malignant conditions, trauma, infections and inflammations related with female genitalia, and pre-malignancy screening procedures.
- iii. Integrate the various knowledges to get a holistic understanding of disease evolution and approach to disease diagnosis and management.
- iv. Understand developmental anomalies, uterine displacements and Sex and intersexuality
- v. Understand the causes related with male and female Infertility, their diagnosis, Artificial Reproductive Techniques and skill in Homoeopathic management along with population dynamics and control of Conception.
- vi. Know skills required in case taking, clinical examination and common diagnostic modalities in Gynecology and Obstetrics.
- vii. Understand the process of normal pregnancy and minor ailments during pregnancy
- viii. Comprehend the process of diagnosis of normal pregnancy, prenatal, antenatal, postnatal maternal and fetal surveillance, care of newborn, care of puerperium
- ix. Understanding common problems during abnormal pregnancy and labour to manage it through Homoeopathic perspective including scope, limitations and timely referral.
- x. Comprehending postnatal, puerperal care, diseases of fetus, new-born and medico legal aspects with Homoeopathic perspective.
- xi. Learning general and homoeopathic management of common Gynecological and Obstetric conditions

3. Learning objectives

At the end of the II BHMS course the student shall be able to:

1. Understand the applied anatomy, endocrinology and physiology including abnormality of female reproductive system during puberty, menstruation, menopause and in different stages of womanhood.
2. Integrate the knowledge with Anatomy, Physiology, Organon of medicine, Practice of medicine and Homoeopathic materia medica to get a holistic
3. A understanding of disease evolution and approach to disease diagnosis and management.
4. Discuss the developmental anomalies, Uterine displacements and Sex and intersexuality to understand the Predisposition including fundamental miasm, personality type known to develop particular disease, causation and modifying factors like exciting and maintaining factors.
5. Acquire skill in case taking, clinical examination and common diagnostic modalities in Gynaecology and Obstetrics.
6. Describe anatomical, physiological, endocrinological changes and minor ailments during pregnancy
7. Understand prenatal, antenatal, postnatal maternal and foetal surveillance, care of new-born, care of puerperium
8. Integrate the knowledge with Organon of medicine and Homoeopathic Materia medica for eradicating genetic dyscrasias in the mother and foetus.
9. Describe the mechanism and stages of normal labour, and intra-partum management.
10. Discuss general and Homoeopathic management for the related conditions through integration with repertorisation and therapeutics.

4. Course content and its term-wise distribution

4.1 Unit 1: Gynaecology and Homoeopathic Therapeutics

| Sl. No. | List of Topics | Term |
|---------|--|------|
| 1.a | Introduction to Gynaecology with Definition of Hahnemannian classification of disease. Importance in the review of the Homoeopathic literature, Therapeutics and Repertory source books | I |
| 1.b | A review of the applied anatomy of female reproductive system, development and Developmental anomalies | I |
| 1.c | A review of the applied physiology of female reproductive system - Puberty, Menstruation and its disorders including, amenorrhea, dysmenorrhea, menorrhagia, metrorrhagia, epimenorrhoea, AUB, Postmenopausal bleeding and menopause with related ailments and its scope and management in Homoeopathy and integrate wherever necessary with other disciplines | I |
| 1.d | Gynaecological Case taking, physical examination, investigation and approach to clinical diagnosis and Differential diagnosis. | I |
| 1.e | Epidemiology -Predisposition including fundamental miasm: personality type known to develop particular disease | I |
| 1.f | Uterine displacements – Prolapse, Retroversion and inversion with its exciting and maintaining causes, disease manifestations, prognosis, management and scope in homoeopathic perspective. | II |
| 1.g | Sex & Intersexuality- Knowledge and scope to eradicate genetic Dyscrasias, predisposition, miasm and personality types known to develop particular diseases through Homoeopathic outlook. | II |
| 1.h | General and Homoeopathic Management, repertorisation, therapeutics, posology, Formulation of prognostic criteria and Prognosis of related topics in Gynecology. | II |

4.2 . Unit 2: Obstetrics, new born care & Homoeopathic therapeutics

| Sl. No. | List of topics | Term |
|---------|---|------|
| 2.a | Introduction to Obstetrics and Newborn care related with Homoeopathic Philosophy, Therapeutics and Repertorisation. | I |
| 2.b | Fundamentals of reproduction | I |
| 2.c | Development of intra uterine pregnancy | I |
| 2.d | Diagnosis of pregnancy, investigations & examinations, applied anatomy & physiology, Normal pregnancy – physiological changes | I |
| 2.e | Antenatal care – aims, objectives, visits, advise, procedures, investigations, identifying high risk cases, scope and limitation of management in Homoeopathy | I |
| 2.f | Common conditions such as Vomiting, backache, constipation in pregnancy and Homoeopathic management | I |
| 2.g | Normal labour with its causes of onset, anatomy, physiology, mechanism, stages, events and clinical course in each stage, importance of Homoeopathic scope and management | II |
| 2.h | Postnatal & puerperal cure - scope and limitation of management in Homoeopathy | II |
| 2.i | Care of new born in homoeopathic point of view | II |
| 2.j | General and Homoeopathic Management, repertorisation, therapeutics, posology, Formulation of prognostic criteria and Prognosis of related topics in Obstetrics and new-born care. | II |
| 2.k | Important Investigations for diagnosis in Obstetrics | II |

5. Teaching hours

5.1. Gross division of teaching hours

| Gynaecology and Obstetrics | | |
|----------------------------|--------------------------|------------------------------|
| Year | Teaching hours- Lectures | Teaching hours- Non-lectures |
| II BHMS | 100 | 24 |

5.2. Teaching hours theory

5.2.1 Unit 1: Gynaecology and Homoeopathic Therapeutics

| Sl. No. | List of topics | Lecture hours |
|---------|--|---------------|
| 1.a | Introduction to Gynecology with definition of Hahnemannian classification of disease. Importance in the review of the Homoeopathic literature, Therapeutics and Repertory source books | 02 hrs. |
| 1.b | A review of the applied anatomy of the female reproductive system. | 03 hrs. |
| | Developmental anomalies | 03 hrs. |
| 1.c | A review of the applied physiology of the female reproductive system HPO axis & Menstruation | 02 hrs. |
| | Puberty | 03 hrs. |
| | Disorders of Menstruation including – Amenorrhoea, Dysmenorrhoea, Menorrhagia, Metrorrhagia, Epimenorrhoea, AUB. | 09 hrs. |
| | Post-Menopausal Bleeding & Menopause with related ailments | 05 hrs. |

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|--------------|--|----------------|
| 1.d | Gynaecological case taking, Physical examination, investigation and approach to clinical diagnosis and differential diagnosis. | 04 hrs. |
| 1.e | Epidemiology – Predisposition including fundamental miasm; personality type known to develop particular disease. | 04 hrs. |
| 1.f | Uterine displacements- Prolapse, retroversion and inversion with its exciting and maintaining causes, disease manifestations, prognosis, management and scope in homoeopathic perspective | 08 hrs. |
| 1.g | Sex & Intersexuality – Knowledge and scope to eradicate genetic dyscrasians, predisposition, miasm and personality types known to develop particular diseases through Homoeopathic outlook | 05 hrs. |
| 1.h | Correlate homoeopathic remedies, Therapeutics, posology. Formulation of prognostic criteria and prognosis related to Gynaecological conditions. | 02 hrs |
| Total | | 50 hrs. |

5.2.2. Unit 2: Obstetrics, new born care & Homoeopathic therapeutics

| Sl. No. | List of topics | Teaching hours |
|----------------|--|-----------------------|
| 2.a | Introduction to Obstetrics and Newborn Care Related with Homoeopathic Philosophy. Therapeutics and Repertorisation. | 02 hr. |
| 2.b | Fundamentals of reproduction | 04 hrs. |
| 2.c | Development of intrauterine pregnancy- Placenta and foetus. | 04 hrs. |
| 2.d. | Diagnosis of pregnancy: Investigations & examinations, applied anatomy & physiology, Normal pregnancy – Physiological changes. | 07 hrs. |
| 2.e | Antenatal care – aims, objectives, visits, advice, procedures, investigations, identifying high-risk cases, scope and limitation of management in Homeopathy | 06 hrs. |

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|--------------|---|----------------|
| 2.f | Vomiting in pregnancy | 04 hrs. |
| 2.g | Normal labour with its causes of onset, anatomy, physiology, mechanism, stages, events and clinical course in each stage and management | 08 hrs. |
| 2.h | Postnatal & puerperal cure – scope and limitation of management in Homoeopathy | 06 hrs. |
| 2.i | Care of New-born in a homoeopathic point of view | 04 hrs. |
| 2.j | Correlate homoeopathic remedies, Therapeutics, posology. formulation of prognostic criteria and prognosis related to Obstetrical conditions | 02 hrs. |
| 2.k | Important investigations for diagnosis in Obstetrics | 03 hrs. |
| Total | | 50 hrs. |

5.2.3. Teaching hours Non-lecture

| S. No. | Non lecture activity | Hours |
|--------|--|-----------|
| 1. | Clinical | |
| a. | Gynaecological Case taking | 04 |
| b. | Obstetrical Case taking | 04 |
| c. | Gynaecological Examination | 04 |
| d. | Obstetrical Examination | 04 |
| e. | Investigations, Diagnosis , D/D | 04 |
| 2. | Demonstrative | |
| a. | Problem based / Case based learning- Foetal skull & maternal pelvis Demonstration of labour in Mannequin - skill lab | 04 |
| | Total | 24 |

6. Content mapping (competencies tables)

Unit 1: Gynaecology & Homoeopathic therapeutics

6.1. Introduction to Gynecology with definition of Hahnemannian classification of disease. Importance in the review of the Homoeopathic literature, Therapeutics and Repertory source books

| Sl. No. | Domain of Competency | Miller's level | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|------------------|----------------------|----------------|---|--|-----------------|----------|--|------------|-----------|---------------------|
| | | | | | | | | Formative | Summative | |
| HomUG-ObGy-1 1.1 | K & S | K | Introduction to Gynecology | Define Gynaecology | C1 | MK | Lecture Small group discussion | MCQ | | |
| HomUG-ObGy-1 1.2 | K & S | K | History of Gynaecology | Discuss the history of Gynaecology | C1 | NK | Lecture Small group discussion | MCQ | | |
| HomUG-ObGy-1 1.3 | H O | KH | Hahnemannian classification of disease. | Classify diseases according to Hahnemann | C1 | MK | Lecture Small group discussion | MCQ | | Organon of Medicine |
| HomUG-ObGy-1 1.4 | H O | KH | Homoeopathic literature | Discuss the Homoeopathic case taking in female complaints as per Organon of Medicine | C I | MK | Lecture/ Integrated Small Group discussion CBL | MCQ/ | | Organon of Medicine |

| | | | | | | | | | | |
|----------------------|-----|----|--|---|----|----|--|------|-----|------------------------------|
| HomUG-ObGy-1 1.5 | H O | KH | | Discuss Hahnemann's concept of case taking in females according to different Homoeopathic authors | C1 | MK | Lecture/ Small group discussion CBL PBL | MCQ/ | | Organon of Medicine |
| HomUG-ObGy-1 1.6 | H O | KH | Materia Medica & Therapeutics Materia | Discuss the list of indicated medicines for the gynaecological conditions | C2 | MK | Lecture / small group discussion PBL CBL | MCQ | SAQ | Materia Medica, |
| HomUG-ObGy-1 1.7 | H O | KH | | Discuss the characteristic indication of medicines mention in the list | C2 | MK | Lecture / small group discussion PBL CBL | MCQ | SAQ | Materia Medica, |
| HomUG-ObGy-1 1.8 | H O | KH | | Discuss the differentiation of the remedies | C2 | MK | Lecture / small group discussion PBL CBL | MCQ | SAQ | Materia Medica, Pathology |
| HomUG-ObGy-1 1.9 | H O | KH | | Discuss the remedy relationship wherever applicable | C2 | MK | Lecture / small group discussion PBL CBL | MCQ | | Materia Medica, Pathology |
| HomUG-ObGy-1 1.10 | H O | KH | Repertory | Describe the selection of repertories in different gynaecological conditions | C2 | MK | Lecture / small group discussion PBL CBL | MCQ | | Repertory |

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|----------------------|-----|----|--|--|----|----|--|-----|--|-----------|
| HomUG-ObGy-1 1.11 | H O | KH | | Explain how to convert symptoms into rubrics from different repertories in gynaecological conditions | C2 | MK | Lecture / small group discussion PBL CBL | MCQ | | Repertory |
| HomUG-ObGy-1 1.12 | H O | KH | | Explain the selection of rubrics from different gynaecological conditions. | C2 | MK | Lecture / small group discussion PBL CBL | MCQ | | Repertory |

6.2.1. Review of the applied anatomy of the female reproductive system.: Development of genital tract, malformations and their clinical significance

| Sl. No. | Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|------------------|------------|--------|---------------------------|--|--------------------|----------|----------------------------------|------------|-----------|-------------|
| | | | | | | | | Formative | Summative | |
| HomUG-ObGy-I-2.1 | K & S | K | External genitalia organs | Name the external genitalia organs | C I | MK | Small group discussion Models | MCQ | | |
| HomUG-ObGy-I-2.2 | K & S | K | Internal genitalia organs | Name the internal genitalia organs. | C I | MK | Small group discussion Charts | MCQ | | |
| HomUG-ObGy-I-2.3 | K & S | KH | Internal genitalia organs | Draw and label the anatomy of the uterus | P2 | MK | Small group discussion Charts | MCQ | | |

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|---------------------------|-------|----|---|--|-----|----|--|-----|-----|--|
| HomUG-ObGy-I-2.4 | K & S | K | Internal genitalia organs | Name the blood supply of the uterus | C I | MK | Small group discussion Charts | MCQ | | |
| Hom-UG ObGy-I-2.5 | K & S | KH | Internal genitalia organs | Draw & Label the normal anatomy of the fallopian tubes. | P2 | MK | Small group discussion Chars | MCQ | SAQ | |
| HomUG-ObGy-I-2.6 | K & S | KH | Gonads | Draw & Label the normal anatomy of the ovarian structures | P2 | MK | Small group discussion Charts | MCQ | SAQ | |
| HomUG-ObGy-I-2.7 | K & S | K | Pelvic fascia, cellular tissues & ligaments | Name the pelvic floor muscles, ligaments and fascia. | C I | MK | Small group discussion Charts | MCQ | SAQ | |
| HomUG-ObGy-I-2.8 | K & S | K | Malformation of the vagina | Discuss the vaginal abnormalities | CI | MK | Small group discussion Charts | MCQ | | |
| HomUG-ObGy-I-2.9 | K & S | K | | Describe the clinical features of vaginal abnormalities | CI | MK | Small group discussion CBL CBL | MCQ | | |
| HomUG-ObGy-I-2.10 | K & S | K | Malformation of the vagina | List the vaginal mal-developments | CI | MK | Small group discussion | MCQ | | |
| Hom-UG-ObGy-I-2.11 | K & S | K | | Discuss the aetiological factors for vaginal mal-development | CI | MK | Lecture Small group discussion Tutorials | MCQ | | |

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|--------------------------|-------|----|-------------------------------------|--|----|----|-----------------------------------|-----|-----|--|
| HomUG-ObGy-I-2.12 | K & S | KH | Malformation of the uterus | Describe the various malformations of the uterus. | CI | MK | Lecture Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-I-2.13 | K & S | K | | Discuss the clinical features of uterine anomalies | CI | MK | Small group discussion CBL | MCQ | SAQ | |
| HomUG-ObGy-I-2.14 | K & S | K | Malformation of the ovaries | List the anomalies of the ovaries | C2 | MK | Lecture Small group discussion | MCQ | | |
| HomUG-ObGy-I-2.15 | K & S | K | Malformation of the fallopian tubes | List the anomalies of the fallopian tubes | C2 | MK | Lecture Small group discussion | MCQ | | |

6.3. A review of the applied physiology of female reproductive system - Puberty, Menstruation and its disorders including, amenorrhea, dysmenorrhea, menorrhagia, metrorrhagia, epimenorrhoea, AUB, Postmenopausal bleeding and menopause with related ailments and its scope and management in Homoeopathy and integrate wherever necessary with other disciplines.

| Sl. No. | Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
|-------------------------|------------|--------|--------------------------|---|-----------------|----------|---|------------|-----------|-------------|
| | | | | | | | | Formative | Summative | |
| HomUG-ObGy-I-3.1 | K & S | K | Endocrinology in puberty | List the hormones of Hypothalamus. | C1 | MK | Lecture Small group discussion | MCQ | | Physiology |
| HomUG-ObGy-I-3.2 | K & S | K | | List the functions of hormones of Hypothalamus | C1 | MK | Lecture Small group discussion Tutorials | MCQ | | Physiology |
| HomUG-ObGy-I-3.3 | K & S | K | Endocrinology in puberty | Name the hormones of Anterior Pituitary. | C1 | MK | Lecture Small group discussion Tutorials | MCQ | | Physiology |
| HomUG-ObGy-I-3.4 | K & S | K | | List the functions of Anterior Pituitary hormones | C1 | MK | Lecture Small group discussion Tutorials | MCQ | | Physiology |
| HomUG-ObGy-I-3.5 | K & S | K | | Name the hormones of Posterior Pituitary | C1 | MK | Lecture Small group discussion Tutorials | MCQ | | Physiology |

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|-----------------------------------|----------|---|--|--|----|----|---|-----|-----|------------|
| HomUG -ObGy-I- 3.6 | K & S | K | | List the functions of Posterior Pituitary hormones | C1 | MK | Lecture Small group discussion Tutorials | MCQ | | Physiology |
| HomUG -ObGy-I- 3.7 | K & S | K | Endocrinology in puberty | Name the hormones of Ovary | C1 | MK | Lecture Small group discussion. | MCQ | | Physiology |
| HomUG -ObGy-I- 3.8 | K & S | K | Endocrinology in puberty | List the functions of ovarian hormones. | C1 | MK | Lecture Small group discussion | MCQ | SAQ | Physiology |
| HomUG -ObGy-I- 3.9 | K & S | K | | Discuss the Importance of HPO axis during Foetal life, Puberty & at Menopause | C1 | MK | Lecture Small group discussion | MCQ | SAQ | Physiology |
| HomUG -ObGy-I- 3.10 | K & S | K | Physiology of Menstruation | Define Menstruation | C1 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | Physiology |
| HomUG - ObGy-I- 3.11 | K & S | K | | What are the Phases of Menstruation | C1 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | Physiology |
| HomUG- ObGy- 13.12 | K & S | K | Hormonal changes during each phase of menstruation | Discuss the Hormonal Changes during each Phase of Menstruation | C1 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | Physiology |
| HomUG- ObGy-I 3.13 | K & S | K | Uterine changes during each phase of menstruation | Describe the Ovarian Changes during each phase of Menstruation | C1 | MK | Lecture Small group discussion | | SAQ | Physiology |

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|---------------------------|-------|---|--------------------|---|----|----|--|-----|-----|------------|
| HomUG-ObGy-I-3.14 | K & S | K | | Describe the Uterine Changes occurs during each phase of Menstruation | C1 | MK | Lecture Small group discussion Tutorials | | SAQ | Physiology |
| HomUG-ObGy-I-3.15 | K & S | K | Puberty | Define puberty | C1 | MK | Lecture Small group discussion | MCQ | | |
| HomUG-ObGy-I-3.16 | K & S | K | Precocious puberty | Describe the Pubertal changes as per Tanner's Classification | C1 | MK | Lecture Small group discussion Tutorials | | SAQ | |
| HomUG-ObGy-I-3.17 | K & S | K | | Define Precocious puberty | C1 | MK | Lecture Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-I-3.18 | K & S | K | | Discuss the causes of Precocious puberty | C1 | MK | Lecture Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-I-3.19 | K & S | K | | Find the diagnostic features of Precocious puberty | C1 | MK | Lecture Small group discussion CBL CBL | MCQ | | |
| Hom-UG ObGy-I-3.20 | K & S | K | Delayed puberty | Define Delayed puberty | C1 | MK | Lecture Small group discussion | MCQ | | |

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|---------------------------|-------|---|--------------------------------|---|----|----|---|-----|-----|-----------------------|
| HomUG-ObGy-I-3.21 | K & S | K | | Discuss the causes for Delayed puberty | C1 | MK | Lecture Small group discussion | | SAQ | |
| HomUG-ObGy-I-3.22 | K & S | K | | Discuss the characteristic features of delayed puberty | C1 | MK | Lecture Small group discussion Tutorials | | SAQ | |
| HomUG-ObGy-I-3.23 | K & S | K | Menorrhagia | Define puberty menorrhagia | C1 | MK | Lecture Small group discussion | MCQ | | |
| Hom-UG-ObGy-I-3.24 | K & S | K | | Discuss the causes of Puberty menorrhagia | C1 | MK | Lecture Small group discussion | | SAQ | |
| HomUG-ObGy-I-3.25 | K & S | K | | Discuss the Diagnostic features of Puberty menorrhagia | C1 | MK | Lecture Small group discussion CBL PBL | MCQ | | |
| HomUG-ObGy-I-3.26 | H O | K | Materia medica Therapeutics | Discuss the Homoeopathic remedies for delayed puberty | C1 | MK | Lecture Small group discussion CBL PBL | | SAQ | Materia medica |
| HomUG-ObGy-I-3.27 | H O | K | | Discuss the Homoeopathic remedies for puberty menorrhagia | C1 | MK | Lecture Small group discussion CBL PBL | | SAQ | Materia medica |

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|----------------------------------|----------|----|--------------------------|---|----|----|--|-----|-----|------------------------------------|
| HomUG -ObGy-I- 3.28 | H O | K | | Discuss the characteristic features of the indicated remedies | C1 | MK | Lecture Small group discussion CBL PBL | | SAQ | Materia medica |
| HomUG -ObGy-I- 3.29 | H O | K | Management | Explain the management for Anomalies of Gonadal Function | C1 | MK | Lecture Small group discussion CBL CBL | MCQ | | Organon of medicine |
| HomUG -ObGy-I- 3.26 | K & S | K | Amenorrhoea | Define Amenorrhoea | C1 | MK | Lecture Small group discussion CBL | MCQ | SAQ | |
| HomUG -ObGy-I- 3.30 | K & S | KH | | Classify Amenorrhoea | C1 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | |
| HomUG -ObGy-I- 3.31 | K & S | K | | Define Primary Amenorrhoea | C1 | MK | Lecture Small group discussion CBL PBL | MCQ | SAQ | |
| HomUG -ObGy-I- 3.32 | K & S | K | Primary amenorrhoea | Describe the causes of Primary amenorrhoea | C2 | MK | Lecture Small group discussion CBL Tutorials | MCQ | SAQ | |
| HomUG -ObGy-I- 3.33 | K & S | K | Secondary amenorrhoea | Define Secondary amenorrhoea | C1 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | |

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|--------------------------|-------|-------|------------------|---|----|----|--|-----|-----|--|
| HomUG-ObGy-I-3.34 | K & S | K | | Describe the causes of Secondary amenorrhoea | CI | MK | Lecture Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-I-3.35 | K & S | K | Cryptomenorrhoea | Define Cryptomenorrhoea | C1 | MK | Lecture Small group discussion CBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.36 | K & S | K | | Discuss the causes of Cryptomenorrhoea | C1 | MK | Lecture Small group discussion CBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.37 | K & S | Shows | Examinations | Demonstrate the general physical, systemic and per vaginal examination in Primary amenorrhoea | P3 | MK | Clinical examinations CBL PBL | | | |
| HomUG-ObGy-I-3.38 | K & S | KH | Investigations | Explain the clinical, laboratory and radiological investigations done in Primary amenorrhoea | C2 | MK | Lecture Small group discussion CBL | | | |
| HomUG-ObGy-I-3.39 | K & S | KH | | Discuss clinical, laboratory and radiological investigations done in secondary amenorrhoea | C2 | MK | Lecture Small group discussion CBL CBL | MCQ | | |

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|--------------------------|-------|----|--|---|----|----|---|------|-----|-----------------------|
| HomUG-ObGy-I-3.40 | H O | KH | Management | Discuss the general management for Primary amenorrhoea | C2 | MK | Lecture Small group discussion CBL | MCQ/ | | |
| HomUG-ObGy-I-3.41 | H O | KH | Homoeopathic Materia medica & therapeutics | Discuss the Homoeopathic remedies for Primary amenorrhoea | C2 | MK | Small group discussion PBL CBL | MCQ | | Materia medica |
| HomUG-ObGy-I-3.42 | H O | KH | | Discuss the Homeopathic remedies for Secondary Amenorrhoea | C2 | MK | Lecture Small group discussion CBL Tutorials | MCQ | | Materia Medica |
| HomUG-ObGy-I-3.43 | H O | K | | Discuss the characteristic features of the indicated remedies | C2 | MK | Lecture Small group discussion PBL CBL | MCQ | | Materia Medica |
| HomUG-ObGy-I-3.44 | K & S | K | Hypomenorrhoea | Define Hypomenorrhoea | C1 | MK | Lecture Small group discussion CBL | MCQ | | |
| HomUG-ObGy-I-3.45 | K & S | K | | Discuss the Causes of Hypomenorrhoea | C1 | MK | Lecture Small group discussion CBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.46 | K & S | K | Oligomenorrhoea | Define Oligomenorrhoea | C1 | MK | Lecture Small group discussion CBL | MCQ | SAQ | |

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|--------------------------|-------|----|----------------|---------------------------------------|----|----|--|-----|-----|--|
| HomUG-ObGy-I-3.47 | K & S | K | Polymenorrhoea | Discuss the causes of Oligomenorrhoea | C1 | MK | Lecture Small group discussion CBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.48 | K & S | K | | Define Polymenorrhoea | C1 | MK | Lecture Small group discussion CBL | MCQ | | |
| HomUG-ObGy-I-3.49 | K & S | K | | Discuss the causes of Polymenorrhoea | C1 | MK | Lecture Small group discussion CBL Tutorials | MCQ | SAQ | |
| HomUG-ObGy-I-3.50 | K & S | K | Metrorrhagia | Define Metrorrhagia | C1 | MK | Lecture Small group discussion CBL Tutorials | MCQ | | |
| HomUG-ObGy-I-3.51 | K & S | KH | | Discuss the causes of Metrorrhagia | C1 | MK | Lecture Small group discussion Tutorials CBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.52 | K & S | K | Menorrhagia | Define menorrhagia | C1 | MK | Lecture Small group discussion CBL Tutorials | MCQ | | |
| HomUG-ObGy-I-3.53 | K & S | K | | Discuss the causes of menorrhagia | C1 | MK | Lecture Small group discussion Tutorials CBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.54 | K & S | K | AUB | Define Abnormal Uterine Bleeding | C1 | MK | Lecture Small group discussion CBL Tutorials | MCQ | | |

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| HomUG-ObGy-I-3.55 | K & S | KH | | Classify Abnormal Uterine Bleeding | C1 | MK | Lecture Small group discussion CBL Tutorials | MCQ | SAQ | |
| HomUG-ObGy-I-3.56 | K & S | KH | | Discuss the causes of AUB | C1 | MK | Lecture Small group discussion CBL Tutorials | MCQ | SAQ | |
| HomUG-ObGy-I-3.57 | K & S | KH | Investigations for AUB | Discuss the important investigation to be done in AUB | C1 | MK | Lecture Small group discussion CBL Tutorials | MCQ | SAQ | |
| HomUG-ObGy-I-3.58 | K & S | KH | Management of AUB | Explain the general Management of AUB | C2 | MK | Lecture Small group discussion CBL Tutorials | MCQ | SAQ | |
| HomUG-ObGy-I-3.59 | K & S | K | Metropathia haemorrhagica | Define Metropathia haemorrhagica | C1 | MK | Lecture Small group discussion CBL Tutorials | MCQ | | |
| HomUG-ObGy-I-3.60 | K & S | KH | | Discuss the causes of metropathia hemorrhagica | C1 | MK | Lecture Small group discussion CBL Tutorials | | SAQ | |
| HomUG-ObGy-I-3.61 | H O | KH | Homoeopathic materia medica & therapeutics | Discuss the homoeopathic remedies for AUB | C1 | MK | Lecture Small group discussion CBL Tutorials | | SAQ | Materia Medica |

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| HomUG-ObGy-I-3.62 | H O | KH | | Discuss the characteristic features of the indicated remedies | C1 | MK | Lecture Small group discussion Tutorials CBL PBL | | SAQ | Materia Medica |
| HomUG-ObGy-I-3.63 | K & S | K | Dysmenorrhoea | Define dysmenorrhoea | C1 | MK | Lecture Small group discussion Tutorials CBL PBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.64 | K & S | KH | | Classify dysmenorrhoea | C1 | MK | Lecture Small group discussion Tutorials | SAQ/MCQ | SAQ | |
| HomUG-ObGy-I-3.65 | K & S | KH | | Discuss the causes of Primary Dysmenorrhoea | C1 | MK | Lecture Small group discussion Tutorials | SAQ/MCQ | SAQ | |
| HomUG-ObGy-I-3.66 | K & S | KH | | Discuss the causes of Secondary dysmenorrhoea | C I | | Lecture Small group discussion CBL Tutorials | | SAQ | |
| HomUG-ObGy-I-3.67 | K & S | KH | Dysmenorrhoea | Discuss the clinical features Primary Dysmenorrhoea | C1 | MK | Lecture Small group discussion Tutorials CBL PBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.68 | K & S | KH | | Discuss the clinical features Secondary Dysmenorrhoea | C1 | MK | Lecture Small group discussion Tutorials CBL PBL | MCQ | SAQ | |

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| HomUG-ObGy-I-3.69 | K & S | KH | | Differentiate Primary and Secondary Dysmenorrhoea | C1 | MK | Small group discussion Tutorials CBL PBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.70 | K & S | K | | Define Mittelschmerz's syndrome | C1 | MK | Lecture Small group discussion CBL PBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.71 | K & S | KH | | Discuss the causes for Mittelschmerz's syndrome | C1 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | |
| HomUG-ObGy-I-3.72 | K & S | KH | | Discuss the general Management of Dysmenorrhoea | C2 | MK | Small group discussion Tutorials CBL PBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.73 | H O | KH | Homoeopathic materia medica & therapeutics | Discuss the homoeopathic remedies in Spasmodic dysmenorrhoea | C2 | MK | Small group discussion Tutorials CBL PBL | MCQ | SAQ | Materia Medica |
| HomUG-ObGy-I-3.74 | H O | KH | | Discuss the homoeopathic remedies in Congestive dysmenorrhoea | C2 | MK | Small group discussion Tutorials PBL CBL | MCQ | SAQ | Materia Medica |

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| HomUG-ObGy-I-3.75 | H O | KH | | Discuss the homoeopathic remedies in Membranous dysmenorrhoea | C2 | MK | Small group discussion Tutorials CBL CBL | MCQ | SAQ | Materia Medica |
| HomU-G ObGy-I-3.76 | H O | KH | | Discuss the characteristic features of indicated remedies in dysmenorrhoea | C2 | MK | Lecture Small group discussion Tutorials CBL PBL | MCQ | SAQ | Materia Medica |
| HomUG-ObGy-I-3.77 | K & S | K | PMS | Define Premenstrual Syndrome | C1 | MK | Lecture Small group discussion Tutorials CBL PBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.78 | K & S | KH | | Discuss the causes for premenstrual syndrome | C1 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | |
| HomUG-ObGy-I-3.79 | K & S | K | | Discuss the clinical features of premenstrual syndrome | C1 | MK | Lecture Small group discussion CBL PBL Tutorials | MCQ | SAQ | |
| HomUG-ObGy-I-3.80 | K & S | KH | | Discuss the general management of premenstrual Syndrome | C1 | MK | Lecture Small group discussion Tutorials CBL | MCQ | SAQ | |

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| HomUG-ObGy-I-3.81 | H O | KH | Homoeopathic materia medica & therapeutics | Explain the Homoeopathic remedies in Premenstrual complaints | C1 | MK | Small group discussion Tutorials CBL PBL | MCQ | SAQ | Materia Medica |
| HomUG-ObGy-I-3.82 | H O | KH | | Discuss the characteristic features of indicated remedies in Premenstrual complaints | C1 | MK | Lecture Small group discussion CBL Tutorials | MCQ | SAQ | Materia Medica |
| HomUG-ObGy-I-3.83 | K & S | K | Menopause | Define Menopause | C1 | MK | Lecture Small group discussion Tutorials | MCQ | | |
| HomUG-ObGy-I-3.84 | K & S | K | | Discuss the Pathophysiology of Menopause | C1 | MK | Lecture Small group discussion CBL Tutorials | MCQ | SAQ | |
| HomUG-ObGy-I-3.85 | K & S | K | | Discuss the Anatomical Changes taking place during menopause | C1 | MK | Lecture Small 0 | MCQ | SAQ | |
| HomUG-ObGy-I-3.86 | K & S | K | | Discuss the clinical features of menopause | C1 | MK | Lecture Small group discussion PBL CBL | SAQ/MCQ | | |
| HomUG-ObGy-I-3.87 | K & S | K | | Define Menopausal syndrome | C1 | MK | Lecture small group discussion PBL CBL | MCQ | SAQ | |

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| HomUG-ObGy-I-3.88 | K & S | K | | Discuss the anatomical and metabolic changes taking place during menopause | C1 | MK | Lecture small group discussion PBL CBL | MCQ | SAQ | C1 |
| HomUG-ObGy-I-3.89 | K & S | K | Perimenopause | Define Perimenopause | C1 | MK | Lecture small group discussion PBL CBL | MCQ | SAQ | C1 |
| HomUG-ObGy-I-3.90 | K & S | K | Artificial menopause | Define Artificial menopause | C1 | MK | Lecture small group discussion PBL CBL | MCQ | SAQ | C1 |
| HomUG-ObGy-I-3.91 | K & S | K | Premature menopause | Define Premature Menopause | C1 | MK | Lecture/ Small group discussion | MCQ | | |
| HomUG-ObGy-I-3.92 | K & S | K | | Discuss aetiology of Premature Menopause | C1 | MK | Lecture/ Small group discussion | | SAQ | |
| HomUG-ObGy-I-3.93 | K & S | K | Delayed menopause | Define delayed menopause | C1 | MK | Lecture Small group discussion | MCQ | | |
| HomUG-ObGy-I-3.94 | K & S | K | | Discuss causes of delayed menopause | C1 | MK | Lecture Small group discussion | | SAQ | |
| HomUG-ObGy-I-3.95 | K & S | KH | Management | Discuss the general of management of Menopause | C1 | MK | Lecture small group discussion PBL CBL | | SAQ | |

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| HomUG-ObGy-I-3.96 | K & S | KH | Homoeopathic Materia medica & therapeutics | List the Homoeopathic remedies for Menopause. | C2 | MK | Ssmall group discussion PBL CBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.97 | K & S | KH | | Discuss the characteristic features of the indicated remedies. | C2 | MK | Lecture small group discussion PBL CBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.98 | K & S | K | Postmenopausal bleeding Investigations | Define Postmenopausal bleeding | C1 | MK | Lecture/ small group discussion PBL CBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.99 | K & S | KH | | Discuss the causes for Postmenopausal bleeding | C1 | MK | Lecture small group discussion PBL CBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.100 | K & S | KH | | Discuss the important investigations required for postmenopausal bleeding | C2 | MK | Lecture/ small group discussion PBL CBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.101 | K & S | KH | Investigations | Discuss what are the investigation required in case of post-menopausal bleeding | C2 | MK | Lecture/ small group discussion PBL CBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.102 | K & S | KH | Differential diagnosis | Discuss the differential diagnosis for postmenopausal bleeding | C1 | MK | Lecture / small group discussion PBL CBL | MCQ | SAQ | |

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| HomUG-ObGy-I-3.103 | K & S | KH | Materia Medica & therapeutics | Discuss the homoeopathic remedies for postmenopausal bleeding | C2 | MK | Lecture / small group discussion PBL CBL | MCQ | SAQ | |
| HomUG-ObGy-I-3.104 | K & S | KH | | Discuss the characteristic features of the indicated remedies. | C2 | MK | Lecture/ small group discussion PBL CBL | MCQ | SAQ | |

6.4 Gynaecological case taking, Physical examination, investigation and approach to clinical diagnosis and differential diagnosis

| Sl. No. | Domain Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | Formative | Summative | |
| HomUG-ObGy-1 4.1 | H O | K | Case taking | Discuss the format of history taking in gynaecological conditions. | C 2 | MK | Small group discussion CBL | | | |
| HomUG-ObGy-1 4.2 | H O | Shows | | Explain the importance of communication skills while case taking. | P2 | MK | Small group discussion CBL | | | |
| HomUG-ObGy-1 4.3 | H O | KH | | Explain the importance of clinical skills in case taking | C I | MK | Small group discussion CBL Clinical examination | VIVA | | |
| HomUG-ObGy-1 4.4 | H O | KH | | Discuss the Homoeopathic case | C 2 | MK | Small group discussion | VIVA | | |

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| | | | | taking in female complaints as per Organon of Medicine | | | Case based learning CBL | | | |
| HomUG-ObGy-1 4.5 | P C | Does | Physical examination | Demonstrate the general physical examination | P 2 | MK | Small group discussion Clinical demonstration | MCQ | | |
| HomUG-ObGy-1 4.6 | P C | Does | Abdominal examination | Describe how to perform per abdominal examination. | P 2 | MK | Small group discussion Tutorials CBL Bedside | MCQ | | |
| Hom-UG ObGy-1 4.7 | P C | Does | Vaginal examination | Describe how to perform per vaginal speculum examination. | P 2 | MK | Small group discussion Tutorials CBL Bedside | MCQ | | |
| HomUG-ObGy-1 4.8 | K & S | KH | Investigations | Discuss the investigations required in dysmenorrhea | C 2 | MK | Small group discussion Tutorials CBL PBL | MCQ | | |
| HomUG-ObGy-1 4.9 | K & S | KH | | Discuss the investigation required in Amenorrhoea | C 2 | MK | Small group discussion Tutorials CBL PBL | MCQ | | |
| HomUG-ObGy-1 | K & S | KH | | Discuss the investigations | C 2 | MK | Small group discussion | MCQ | | |

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| 4.10 | | | | required in AUB case. | | | Tutorials CBL PBL | | | |
| HomUG ObGy-1 4.11 | K & S | KH | | Discuss the investigation required in malformations of the FGT | C 2 | MK | Small group discussion CBL PBL | MCQ | | |
| Hom-UG- ObGy-1 4.12 | K & S | KH | Clinical diagnosis | Derive the clinical diagnosis from the signs & symptoms | C 2 | MK | Small group discussion CBL PBL | MCQ | | |
| HomUG- ObGy-1 4.13 | K & S | KH | Pathological diagnosis | Derive the pathological diagnosis with a help of laboratory and radiological findings. | C 2 | MK | Small group discussion CBL PBL | MCQ | | |
| HomUG- ObGy-1 4.14 | K & S | KH | Differential diagnosis | Discuss the differential diagnosis with relation to patient history & Signs & Symptoms, | C 2 | MK | Small group discussion CBL PBL | MCQ | | |

6.5 Epidemiology – Predisposition including fundamental miasm; personality type known to develop particular disease

| Sl. No. | Domain Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | Formative | Summative | |
| HomUG-ObGy-1 5.1 | H O | K | Predisposition | Define predisposition | C1 | MK | Lecture Small group discussion Tutorials | MCQ | | Organon of medicine |
| HomUG-ObGy-1 5.2 | H O | K | | Discuss the relevance of predisposing factors for the disease. | C1 | MK | Lecture Small group discussion Tutorials | MCQ | | Organon of medicine |
| HomUG-ObGy-1 5.3 | H O | K | Miasm | Define miasm | C1 | MK | Lecture Small group discussion Tutorials | MCQ | | Organon of medicine |
| HomUG-ObGy-1 5.4 | H O | K | | Discuss the types of miasms | C1 | MK | Lecture Small group discussion Tutorials | MCQ | | Organon of medicine |
| HomUG-ObGy-1 5.5 | H O | K | | Discuss the relevance of miasm for the disease conditions | C1 | MK | Lecture Small group discussion | MCQ | | Organon of medicine |

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| | | | | | | | Tutorials | | | |
| HomUG-ObGy-1 5.6 | H O | K | Fundamental miasm | Define fundamental miasm | C1 | MK | Lecture Small group discussion Tutorials | MCQ | | Organon of medicine |
| HomUG-ObGy-1 5.7 | H O | K | | Discuss the relevance of fundamental miasm for the disease | C1 | MK | Lecture Small group discussion Tutorials | MCQ | | Organon of medicine |
| HomUG-ObGy-1 5.8 | H O | K | Personality type | Discuss the importance of personality of the patient for developing Disease condition. | C1 | MK | Lecture Small group discussion Tutorials | MCQ | | Organon of medicine |

6.6 Uterine displacements- Prolapse, retroversion and inversion with its exciting and maintaining causes, disease manifestations, prognosis, management and scope in homoeopathic perspective.

| Sl. No. | Domain Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-ObGy-1 6.1 | K & S | K | Genital Prolapse | Define Genital prolapse | C1 | MK | Lecture Small group discussion Charts | MCQ | SAQ | |
| HomUG-ObGy-1 6.2 | K & S | K | | Discuss the aetiology of Genital prolapse | C1 | MK | Lecture Small group discussion Tutorials Charts | MCQ | SAQ | |
| HomUG-ObGy-1 6.3 | K & S | K | | Classify genital prolapses | C1 | MK | Lecture Small group discussion Tutorials Charts | MCQ | SAQ | |
| HomUG-ObGy-1 6.4 | K & S | K | Rectocele | Define Rectocele | C1 | MK | Lecture Small group discussion Tutorials Charts | MCQ | SAQ | |
| HomUG-ObGy-1 6.5 | K & S | K | Cystocele | Define cystocele | C1 | MK | Lecture Small group discussion | MCQ | SAQ | |

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| HomUG-ObGy-1 6.6 | K & S | K | | Discuss the degrees of cystocele | C1 | MK | Lecture Small group discussion CBL | MCQ | SAQ | |
| HomUG-ObGy-1 6.7 | K & S | K | Uterine prolapse | Discuss the degrees of uterine prolapse | C1 | MK | Lecture Small group discussion CBL PBL | MCQ | SAQ | |
| HomUG-ObGy-1 6.8 | K & S | K | Genital prolapse | Describe the aetiology of genital prolapse | C1 | MK | Lecture Small group discussion Tutorials Charts | MCQ | SAQ | |
| HomUG-ObGy-1 6.9 | K & S | K | | Discuss the Clinical Features of Genital prolapse | C2 | MK | Lecture Small g Clinical examination CBL CBL | MCQ | SAQ | |
| HomUG-ObGy-1 6.10 | K & S | K | | Discuss the Differential Diagnosis of Genital prolapse | C2 | MK | Lecture Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 6.11 | K & S | K | | Discuss the Prophylaxis of Genital prolapse | C2 | MK | Small group discussion Tutorials | MCQ | SAQ | |
| HomUG-ObGy-1 6.12 | K & S | K | | Discuss the general management for Genital prolapse | C2 | DK | Lecture Small group discussion Tutorials | MCQ | SAQ | |
| HomUG-ObGy-1 | K & S | K | | Define Procidentia | C2 | DK | Lecture | MCQ | SAQ | |

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| 6.13 | | | | | | | Small group discussion Tutorials | | | |
| HomUG-ObGy-1 6.14 | K & S | K | | Discuss the complications of genital prolapse | C2 | DK | Lecture Small group discussion Tutorials | MCQ | SAQ | |
| HomUG-ObGy-1 6.15 | K & S | K | Homoeopathic Materia medica & therapeutics | Discuss the Homoeopathic remedies for genital prolapse | C2 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | |
| HomUG-ObGy-1 6.16 | K & S | K | Discuss the | Discuss the Characteristic features of indicated remedies. | C2 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | |
| HomUG-ObGy-1 6.17 | K & S | K | Pessary treatment | Define Pessary treatment | C2 | MK | Lecture Small group discussion Tutorials Charts | MCQ | | |
| HomUG-ObGy-1 6.18 | K & S | K | | Discuss the indications & contraindications of pessary treatment | C2 | MK | Lecture Small group discussion Tutorials | MCQ/ | SAQ | |
| HomUG-ObGy-1 6.19 | K & S | K | Surgical management | List the surgical management for genital prolapse | C2 | DK | Lecture Small group discussion | MCQ | | |
| HomUG-ObGy-1 6.20 | K & S | K | | Define retroversion of uterus | C1 | MK | Lecture Small group discussion | MCQ | | |

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| HomUG-ObGy-1 6.21 | K & S | K | Retroversion | Discuss the causes of retroverted uterus | C2 | MK | Lecture Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 6.22 | K & S | K | | List the types of retroverted uterus | C1 | MK | Lecture Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 6.23 | K & S | K | | Discuss the clinical features of retroverted uterus | C1 | MK | Lecture Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 6.24 | K & S | K | Retroversion degrees | Discuss the degrees of retroversion of uterus | CI | MK | Lecture Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 6.25 | K & S | K | Differential diagnosis | Discuss the Differential Diagnosis of retroverted uterus | C2 | MK | Lecture Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 6.26 | K & S | K | Homoeopathic material medica & therapeutics | Discuss the Homoeopathic remedies for retroverted uterus | C2 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | |
| HomUG-ObGy-1 6.27 | K & S | K | | Discuss the characteristic features of indicated remedies. | C2 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | |
| HomUG-ObGy-1 6.28 | K & S | K | Inversion | Define inversion of uterus | C1 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | |
| HomUG-ObGy-1 6.29 | K & S | K | | Recall the aetiology of inverted uterus | C1 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | |

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| HomUG-ObGy-1 6.30 | K & S | K | Scope & Limitation of Homoeopathy | Classify the types of inversion of uterus | C2 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | |
| HomUG-ObGy-1 6.31 | K & S | K | | Discuss the Clinical Features of inverted uterus | C1 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | |
| HomUG-ObGy-1 6.32 | K & S | KH | | Discuss the scope & limitation of Homoeopathy in inversion of uterus | C2 | MK | Lecture Small group discussion Tutorials | MCQ | SAQ | |
| HomUG-ObGy-1 6.33 | K & S | KH | Homoeopathic materia medica & therapeutics | List the Homoeopathic remedies indicated in inversion of uterus | C2 | MK | Small group discussion CBL PBL | MCQ | SAQ | |

6.7 Sex & Intersexuality – Knowledge and scope to eradicate genetic Dyscrasias, predisposition, miasm and personality types known to develop particular diseases through Homoeopathic outlook

| Sl. No. | Domain Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | Formative | Summative | |
| HomUG-ObGy-1 7.1 | K & S | K | Sex & Intersexuality | Define Klinifelters syndrome | C1 | DK | Lecture Small group discussion Tutorials Charts | MCQ | | |
| HomUG -ObGy-1 7.2 | K & S | K | | Define Inter-sex | C2 | DK | Lecture Small group discussion Tutorials Charts | MCQ | | |
| HomUG-ObGy-1 7.3 | K & S | K | Turner's syndrome | Explain Turner's syndrome | C1 | DK | Lecture Small group discussion Tutorials Charts | | SAQ | |
| HomUG-ObGy-1 7.4 | K & S | K | Hermaphrodites | Discuss True Hermaphrodites & mention types | C2 | DK | Lecture Small group discussion Tutorials Charts | | SAQ | |
| HomUG-ObGy-1 | K & S | K | Male intersex | Discuss the male Inter-sex | C2 | DK | Lecture | VIVA | | |

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| 7.5 | | | | | | | Small group discussion Tutorials Charts | | | |
| HomUG-ObGy-1 7.6 | H O | K | Personality Type | Discuss the relevance of Predisposition with respect to Intersexuality | C2 | MK | Small group discussion Tutorials Charts | VIVA | | Organon of medicine |
| HomUG-ObGy-1 7.7 | H O | K | H O | Discuss the relevance of miasm with respect to intersexuality. | C2 | MK | Lecture Small group discussion Tutorials | VIVA | | Organon of medicine |
| HomUG-ObGy-1 7.8 | H O | K | H O | Discuss the relevance of predisposition with respect to intersexuality | C2 | MK | Lecture Small group discussion Tutorials | VIVA | | Organon of medicine |
| HomUG-ObGy-1 7.9 | H O | K | H O | Discuss the importance of personality of the patient for developing Disease condition | C2 | MK | Lecture Small group discussion Tutorials | VIVA | | Organon of medicine |
| HomUG-ObGy-1 7.10 | H O | K | Homoeopathic materia medica & therapeutics | Discuss the homoeopathic matria medica therapeutics for Intersexuality | C2 | DK | Lecture Small group discussion Tutorials | MCQ | | Materia Medica |

6.8 General & Homeopathic Management, Repertorisation, Therapeutics, Posology, Formulation of prognostic criteria and prognosis of related topics in Gynaecology

| Sl. No. | Domain Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-ObGy-1 8.1 | H O | KH | Management | Explain the general management in Dysmenorrhoea | C 2 | MK | Lecture Small group discussion Tutorials CBL | Viva | SAQ | |
| HomUG-ObGy-1 8.2 | H O | KH | | Explain the general management in Amenorrhoea | C 2 | MK | Lecture Small group discussion Tutorials CBL | Viva | SAQ | |
| HomUG-ObGy-1 8.3 | H O | KH | | Explain the general management in Genital prolapse | C 2 | MK | Lecture Small group discussion Tutorials CBL | VIVA | SAQ | |
| HomUG-ObGy-1 8.4 | H O | KH | | Explain the general management in retroversion of the uterus | C 2 | MK | Lecture Small group discussion Tutorials CBL | VIVA | SAQ | |

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| HomUG-ObGy-1 8.5 | H O | K | Repertory | Discuss the repertory medium used in different gynaecological conditions | C 2 | MK | Lecture Small group discussion Tutorials CBL | VIVA | | |
| HomUG-ObGy-1 8.6 | H O | KH | | Discuss the selection of repertory based on symptoms | C 2 | MK | Lecture Small group discussion Tutorials CBL | VIVA | | |
| HomUG-ObGy-1 8.7 | H O | K | Homoeopathic Materia medica & therapeutics and posology | Co-relate the homoeopathic remedies, potency selection and repetition of dose in relation to gynaecological conditions | C 2 | MK | Lecture Small group discussion Tutorials CBL | VIVA | | |

Unit 2: Obstetrics, Infant Care & Homoeopathic Therapeutics

6.9 Introduction to Obstetrics and Newborn care related with Homoeopathic Philosophy. Therapeutics and Repertorisation

| Sl. No. | Domain Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | Formative | Summative | |
| HomUG-ObGy-1 9.1 | K & S | K | Introduction to Obstetrics | Define Obstetrics | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 9.2 | K & S | K | Introduction to newborn care | Define the term New born Infant | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 9.3 | K & S | K | Introduction to newborn care | Define Still birth | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 9.4 | H O | K | Homoeopathic case taking | Explain the Homoeopathic case taking in female complaints as per Organon of Medicine. | P1 | MK | Lecture Tutorials Small group discussion | VIVA | | Organon of medicine |
| HomUG-ObGy-1 9.5 | H O | K | | Describe the Hahnemann's concept of action of homoeopathic medicines in pregnant women & infants. Foot note aphorism 284 | C2 | MK | Lecture Small group discussion Tutorials | VIVA | | Organon of medicine |

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| HomUG-ObGy-1 9.6 | H O | KH | Homoeopathic Materia Medica & Therapeutic source books | Discuss the Homoeopathic Materia Medica with Obstetrics and new born care from source books | C2 | MK | Lecture Small group discussion Tutorials | VIVA | | Organon of medicine |
| HomUG-ObGy-1 9.7 | H O | K | Repertory | Discuss the repertory medium used in different obstetrical and new born care. | C2 | MK | Lecture Small group discussion Tutorials | VIVA | | Repertory |
| HomUG-ObGy-1 9.8 | H O | K | Repertory | Discuss the selection of repertory based on symptoms in obstetrics. | C2 | MK | Lecture Small group discussion Tutorials CBL | MCQ | | Repertory |
| HomUG-ObGy-1 9.9 | H O | K | Repertory | Discuss the selection of repertory based on symptoms in new born care. | C2 | MK | Lecture Small group discussion Tutorials CBL | MCQ | | Repertory |

6.10 Fundamentals of reproduction

| Sl. No. | Domain Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-ObGy-1 10.1 | K & S | K | Gametogenesis | Define oogenesis | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 10.2 | K & S | KH | | Discuss the stages of oogenesis | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | Physiology, Anatomy |
| HomUG-ObGy-1 10.3 | K & S | KH | | Define Spermatogenesis | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 10.4 | K & S | KH | | Discuss the stages of spermatogenesis | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | Physiology, Anatomy |
| HomUG-ObGy-1 10.5 | K & S | KH | Ovulation | Define ovulation | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 10.6 | K & S | K | | Describe the mechanism of ovulation | C1 | MK | Lecture Tutorials | | SAQ | Physiology, Anatomy |

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| | | | | | | | Small group discussion | | | |
| HomUG-ObGy-1 10.7 | K & S | K | | Describe the hormonal regulation of ovulation | C1 | MK | Lecture Tutorials Small group discussion | | SAQ | Physiology, Anatomy |
| HomUG-ObGy-1 10.8 | K & S | K | Fertilization | Define Fertilization | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 10.9 | K & S | K | | Describe Morula | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 10.10 | K & S | K | | Describe Blastocyst | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 10.11 | K & S | K | Implantation | Define Implantation | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 10.12 | K & S | K | | Discuss the Stages of Implantation | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 10.13 | K & S | K | | Discuss the functions of Trophoblast | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 | K & S | K | Decidua | Define Decidua | C1 | MK | Lecture Tutorials | MCQ | | Physiology, Anatomy |

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| 10.14 | | | | | | | Small group discussion | | | |
| HomUG-ObGy-1 10.15 | K & S | K | | Define Decidual Reaction | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 10.16 | K & S | K | | Describe the layers of Decidua | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | Physiology, Anatomy |
| HomUG-ObGy-1 10.17 | K & S | K | | Describe the Functions of Decidua | C1 | MK | Lecture Tutorials Small group discussion | | SAQ | Physiology, Anatomy |
| HomUG-ObGy-1 10.18 | K & S | K | Chorion & Chorionic Villi | Define Chorion | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| Hom-UG ObGy-1 2.28 | K & S | K | | Describe the Chorionic Villi | C1 | MK | Lecture Tutorials Small group discussion | | SAQ | Physiology, Anatomy |
| HomUG-ObGy-1 10.19 | K & S | K | Inner Cell Mass | Describe the development of Inner Cell Mass | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | Physiology, Anatomy |

6.10.1 Development of Intra Uterine Pregnancy- Placenta and foetus.

| Sl. No. | Domain Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-ObGy-1 11.1 | K & S | K | Placenta | Define Placenta | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 11.2 | K & S | K | | Discuss the development of Placenta | C1 | DK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 11.3 | K & S | K | | Describe the Placenta at Term | C1 | DK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 11.4 | K & S | K | | Describe the Structure of Placenta | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | Physiology, Anatomy |
| HomUG-ObGy-1 11.5 | K & S | K | | Describe the Placental Circulation | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 11.6 | K & S | K | | Discuss the changes with Placental Ageing | C1 | DK | Lecture Tutorials | MCQ | | Physiology, Anatomy |

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| | | | | | | | Small group discussion | | | |
| HomUG-ObGy-1 11.7 | K & S | K | | List the Functions of Placenta | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | Physiology, Anatomy |
| HomUG-ObGy-1 11.8 | K & S | K | | List the Hormones of Placenta | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | Physiology, Anatomy |
| HomUG-ObGy-1 11.9 | K & S | K | | List Functions of the hormones of Placenta | C1 | DK | Lecture Tutorials Small group discussion | MCQ | SAQ | Physiology, Anatomy |
| HomUG-ObGy-1 11.10 | K & S | K | Foetal Membranes | Describe the Structure of Chorion | C1 | DK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 11.11 | K & S | K | | Describe Structure of Amnion | C1 | DK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 11.12 | K & S | K | | List the Functions of Foetal Membranes | C1 | DK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 11.13 | K & S | K | Amniotic Cavity, Amniotic Fluid | Discuss the development of Amniotic Cavity | C1 | DK | Lecture Tutorials Small group discussion | MCQ | | Physiology, Anatomy |
| HomUG-ObGy-1 | K & S | K | | Discuss the Circulation of Amniotic Fluid | C1 | DK | Lecture Tutorials | MCQ | | Physiology, Anatomy |

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| 11.14 | | | | | | | Small group discussion | | | |
| HomUG-ObGy-1 11.15 | K & S | K | | Discuss the Physical Features of Amniotic Fluid | C1 | DK | Lecture Tutorials Small group discussion | MCQ | SAQ | Physiology, Anatomy |
| HomUG-ObGy-1 11.16 | K & S | K | | Discuss the Composition of Amniotic Fluid | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | Physiology, Anatomy |
| HomUG-ObGy-1 11.17 | K & S | K | | Discuss the Functions of Amniotic Fluid | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | Physiology, Anatomy |
| HomUG-ObGy-1 11.18 | K & S | K | Umbilical Cord | Discuss the development of Umbilical Cord | C1 | DK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 11.19 | K & S | K | | Discuss the Structure of Umbilical Cord | C1 | MK | Lecture Tutorials Small group discussion Charts | MCQ | | |
| HomUG-ObGy-1 11.20 | K & S | K | | Discuss the Characteristics of Umbilical Cord | C1 | DK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 11.21 | K & S | K | The Foetus | List the periods of Prenatal Development of Foetus | C1 | DK | Lecture Tutorials Small group discussion | MCQ | | |

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| HomUG-ObGy-1 11.22 | K & S | K | | Discuss the Criteria for assessment of Growth of Foetus | C1 | NK | Lecture Tutorials Small group discussion Charts | MCQ | | |
| HomUG-ObGy-1 11.23 | K & S | K | | Discuss the Systemic & Physiological changes occurs during intra uterine life. | C1 | DK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 11.24 | K & S | K | | Discuss the Foetal Circulation | C1 | MK | Lecture Tutorials Small group discussion Charts | MCQ | SAQ | |
| HomUG-ObGy-1 11.25 | K & S | K | | Discuss the changes in Foetal Circulation at birth. | C1 | MK | Lecture Tutorials Small group discussion Charts | MCQ | SAQ | |
| HomUG-ObGy-1 11.26 | K & S | K | Foetus in Utero | Define Lie | C1 | MK | Lecture Tutorials Small group discussion Clinical | MCQ VIVA | | |
| HomUG-ObGy-1 11.27 | K & S | K | | Define Presentation | C1 | MK | Lecture Tutorials Small group discussion Manikin | MCQ VIVA | | |
| HomUG-ObGy-1 11.28 | K & S | K | | Define Presenting part | C1 | MK | Lecture Tutorials | MCQ VIVA | | |

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| | | | | | | | Small group discussion Manikin | | | |
| HomUG-ObGy-1 11.29 | K & S | K | | Define Attitude | C I P 2 | MK | Lecture Tutorials Small group discussion Manikin | MCQ VIVA | | |
| HomUG-ObGy-1 11.30 | K & S | K | | Define Denominator | C1 P 2 | MK | Lecture Tutorials Small group discussion Manikin | MCQ VIVA | | |
| HomUG-ObGy-1 11.31 | K & S | K | | Define Position | C1 P2 | MK | Lecture Tutorials Small group discussion Manikin | MCQ VIVA | | |
| HomUG-ObGy-1 11.32 | K & S | K | Foetal Skull and Maternal Pelvis | Demonstrate the Areas of Foetal Skull | CI P2 | MK | Lecture Tutorials Small group discussion Charts | MCQ VIVA | | |
| HomUG-ObGy-1 11.33 | K & S | K | | Demonstrate the Sutures of Foetal Skull | C1 P2 | MK | Lecture Tutorials Small group discussion Demonstration | MCQ VIVA | | |
| HomUG-ObGy-1 11.34 | K & S | K | | Demonstrate the Fontanelles of Foetal Skull | C1 P2 | MK | Lecture Tutorials Small group discussion | MCQ | | |

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| | | | | | | Demonstration | | | |
| HomUG-ObGy-1 11.35 | K & S | K | | Demonstrate the Diameters of Foetal Skull | C1 P2 | MK | Lecture Tutorials Small group discussion Demonstration | MCQ | SAQ |
| HomUG-ObGy-1 11.36 | K & S | K | | Define Moulding | C1 | MK | Lecture Tutorials Small group discussion | MCQ VIVA | |
| HomUG-ObGy-1 11.37 | K & S | K | | Describe Mechanism of Moulding | C1 | MK | Lecture Tutorials Small group discussion Charts | MCQ VIVA | |
| HomUG-ObGy-1 11.38 | K & S | K | | Discuss the Importance of Moulding | C1 | MK | Lecture Tutorials Small group discussion Dummy | VIVA | |
| HomUG-ObGy-1 11.30 | K & S | K | | Define Caput Succedaneum | C1 | MK | Lecture Tutorials Small group discussion | MCQ VIVA | SAQ |
| HomUG-ObGy-1 11.39 | K & S | K | | Describe Mechanism of formation of Caput Succedaneum | C1 | MK | Lecture Tutorials Small group discussion Dummy | MCQ VIVA | SAQ |
| HomUG-ObGy-1 11.40 | K & S | K | | Discuss Importance of Caput Succedaneum | C1 | MK | Lecture Tutorials | MCQ VIVA | SAQ |

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| | | | | | | | Small group discussion Dummy | | | |
| HomUG-ObGy-1 11.41 | K & S | K | | Define False Pelvis | C 1 P 2 | MK | Lecture Tutorials Small group discussion Charts | MCQ VIVA | | |
| HomUG-ObGy-1 11.42 | K & S | K | | Define True Pelvis | C1 P 2 | MK | Lecture Tutorials Small group discussion Pelvis | MCQ VIVA | | |
| HomUG-ObGy-1 11.43 | K & S | K | | Describe the Inlet of the Pelvis | C 1 P 2 | MK | Lecture Tutorials Small group discussion Pelvis | MCQ VIVA | | |
| HomUG-ObGy-1 11.44 | K & S | K | | Demonstrate the diameters of the Pelvis | C1 P2 | MK | Lecture Tutorials Small group discussion Pelvis | MCQ | | |
| HomUG-ObGy-1 11.45 | K & S | S | | Demonstrate Inlet & outlet of the Pelvis | C1 P2 | MK | Lecture Tutorials Small group discussion Pelvis | MCQ | | |
| HomUG-ObGy-1 11.46 | K & S | S | | Demonstrate Mid pelvis | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |

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| | | | | | | | Pelvis | | | |
| HomUG-ObGy-1 11.47 | K & S | S | | Demonstrate the anterior and transverse diameters of the pelvic inlet | C 1 P 2 | MK | Lecture Tutorials Small group discussion Manikin | MCQ | SAQ | |

6.11 Diagnosis of pregnancy, Investigations & examinations, applied anatomy & physiology, Normal pregnancy – Physiological Changes

| Sl. No. | Domain Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | Formative | Summative | |
| HomUG-ObGy-1 12.1 | K & S | K | Diagnosis of Pregnancy | Define Gestational age of Foetus | C1 | DK | Lecture Tutorials Small group discussion Manikin | MCQ | | |
| HomUG-ObGy-1 12.2 | K & S | K | | Define Ovulatory age of Foetus | C1 | MK | Lecture Tutorials Small group discussion Manikin | MCQ | | |
| HomUG-ObGy-1 12.3 | K & S | K | | Discuss the subjective symptoms in 1 st trimester of pregnancy. | C1 | MK | Lecture Tutorials Small group discussion Manikin | MCQ | | |

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| HomUG-ObGy-1 12.4 | K & S | K | | Discuss the objective signs in 1 st trimester pregnancy. | C1 | MK | Lecture Tutorials Small group discussion Manikin | MCQ | SAQ | |
| HomUG-ObGy-1 12.5 | K & S | K | | List the Immunological tests for diagnosis of Pregnancy in 1 st Trimester | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 12.6 | K & S | K | | Discuss the subjective symptoms of 2 nd trimester of pregnancy | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 12.7 | K & S | K | | Discuss the objective signs of 2 nd trimester of pregnancy | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 12.8 | K & S | K | | List the investigations of 2 nd trimester of pregnancy | C 2 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 12.9 | K & S | K | | Discuss the subjective symptoms of 3 rd trimester of pregnancy | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 | K & S | K | | Discuss the objective signs of 3 rd trimester of pregnancy | C1 | MK | Lecture Tutorials | MCQ | SAQ | |

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| 12.10 | | | | | | | Small group discussion | | | |
| HomUG-ObGy-1 12.11 | K & S | K | | List the investigations of 3 rd trimester of pregnancy | C2 | MK | Lecture Tutorials Small group discussion\ | MCQ | SAQ | |
| HomUG-ObGy-1 12.12 | K & S | K | | Discuss the Differential Diagnosis of Pregnancy | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 12.13 | K & S | K | | List the signs of previous childbirth | C1 | DK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 12.14 | K & S | K | | Describe the methods of calculation of EDD | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 12.15 | K & S | S | | Calculate EDD of Pregnant Woman using Nagele's formula | P1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 12.16 | P C | S | Methods of Obstetrical Examination | Demonstrate the Abdominal Examination | P-2 | MK | Tutorials Small group discussion Mannikin Bedside | MCQ | SAQ | |
| HomUG-ObGy-1 | P C | K | | List the types of Obstetrical grips | C 1 P 2 | MK | Lecture Tutorials | MCQ | SAQ | |

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| 12.17 | | | | | | | Small group discussion | | | |
| HomUG-ObGy-1 12.18 | P C | S | | Demonstrate the Obstetrical grips | C 1 P I | MK | Lecture Tutorials Small group discussion Mannikin Bedside | MCQ | | |
| HomUG-ObGy-1 12.19 | P C | PI | | Demonstrate the pelvic grips | C 1 P 2 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 12.20 | K & S | K | | Explain Braxton-Hicks contraction(3) | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 12.21 | K & S | K | Physiological changes during pregnancy | Describe the physiological changes occurs in the genital organs during pregnancy. | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 12.22 | K & S | K | | Describe the physiological changes occurring in Breast during pregnancy | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 12.23 | K & S | K | Cutaneous changes | Discuss the cutaneous changes occurs during pregnancy | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 12.24 | K & S | K | Weight gain | Discuss the physiological weight gain during pregnancy | C1 | MK | Lecture Tutorials | MCQ | SAQ | |

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| | | | | | | | Small group discussion | | | |
| HomUG-ObGy-1 12.25 | K & S | K | Metabolic | Discuss the metabolic changes occurs during pregnancy | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 12.26 | K & S | K | Physiological changes | Discuss the haematological changes occurs during pregnancy | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 12.27 | K & S | K | Haematological changes | Discuss the Cardio vascular changes occurs during pregnancy | | | | | | |
| HomUG-ObGy-1 12.28 | K & S | K | C V S | Discuss the Systemic changes occurs during pregnancy | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |

6.12 Antenatal care – aims, objectives, visits, advise, procedures, investigations, identifying high risk cases, scope and limitation of management in Homeopathy

| Sl. No. | Domain Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | Formative | Summative | |
| HomUG-ObGy-1 13.1 | K & S | K | Antenatal care | Define Antenatal Care | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 13.2 | K & S | K | | Discuss the Aims of Antenatal Care | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 13.3 | K & S | K | | Discuss the Objectives of Antenatal Care | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 13.4 | P C | K | | Discuss the procedure at first ANC visit | C1 | MK | Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 13.5 | P C | K | | Discuss the procedure at subsequent visits | C1 | MK | Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 | P C | K | | Discuss the important Investigations done for | C1 | MK | Lecture Tutorials | MCQ | SAQ | |

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| 13.6 | | | | Clinical Assessment of Foetal well being | | | Small group discussion | | | |
| HomUG-ObGy-1 13.7 | K & S | K | | Discuss the important Investigations done in Late Pregnancy | C1 | DK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 13.8 | K & S | K | | Discuss the Methods of Prenatal Genetic Screening | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 13.9 | K & S | K | | Discuss the Invasive procedures for Prenatal Diagnosis | C1 | NK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 13.10 | K & S | K | | List the Non Invasive procedures for Prenatal Diagnosis | C1 | NK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 13.11 | K & S | K | | Explain the antenatal advice given to the mother | C1 P I | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG-ObGy-1 13.12 | K & S | K | | Discuss the importance of Antenatal care | C1 P I | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG-ObGy-1 13.13 | K & S | K | | Discuss the relevance of Pre-conceptional Counselling | C1 | MK | Lecture Tutorials Small group discussion | VIVA | | |

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| HomUG-ObGy-1 13.14 | P C | KH | Antenatal visits | Discuss the normal antenatal visits during pregnancy | C2 | MK | Lecture Tutorials Small group discussion | VIVA | | |
| HomUG-ObGy-1 13.15 | P C | KH | Antenatal diet | Discuss the antenatal diet to the pregnant mother | C2 | MK | Lecture Tutorials Small group discussion Chart | MCQ | | |
| HomUG-ObGy-1 13.16 | H O | KH | Scope of homoeopathy | Discuss the Scope of Homoeopathic management in antenatal complaints | C I P 1 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG-ObGy-1 13.17 | H O | KH | Management in Homoeopathy | Discuss the Scope of Homoeopathic management in high risk cases pregnancy | C1 P1 | MK | Lecture Tutorials Small group discussion CBL | MCQ VIVA | | Organon of Medicine, Materia Medica, Repertory |
| HomUG-ObGy-1 13.18 | H O | K | Scope & Limitations | Discuss the Limitations of Homoeopathic management in high risk pregnancy | C1 P 1 | MK | Lecture Tutorials Small group discussion CBL | VIVA | | Organon of Medicine, Materia Medica, Repertory |

6.13 Common conditions such as Vomiting, backache, constipation in pregnancy and Homoeopathic Management

| Sl. No. | Domain Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | Formative | Summative | |
| HomUG-ObGy-1 14.1 | K & S | K | Vomiting in pregnancy | Define simple vomiting in pregnancy | C1 | MK | Lecture/ Integrated teaching/ AV aids | MCQ VIVA | | |
| HomUG-ObGy-1 14.2 | K & S | K | | Define hyperemesis gravidarum | C1 | MK | Lecture/ Integrated teaching/ AV aids | MCQ VIVA | | |
| HomUG-ObGy-1 14.3 | K & S | K | | List aetiology of Hyperemesis gravidarum | C1 | MK | Lecture/ Integrated teaching/ AV aids | | LA SAQ | |
| HomUG-ObGy-1 14.4 | K & S | K | | Discuss the clinical features of Hyperemesis gravidarum | C1 | MK | Lecture/ Integrated teaching/ AV aids | | SAQ | |
| HomUG-ObGy-1 14.5 | K & S | K | | Explain the Investigations required for Hyperemesis gravidarum | C1 | MK | Lecture/ Integrated teaching/ AV aids | | SAQ | |
| HomUG-ObGy-1 14.6 | K & S | K | | Discuss the Complications of Hyperemesis gravidarum | C1 | MK | Lecture/ Integrated teaching/ AV aids | | SAQ | |

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| HomUG-ObGy-1 14.7 | K & S | K | | Discuss the Management of Hyperemesis gravidarum | C1 | MK | Lecture/ Integrated teaching/ AV aids | | SAQ | |
| HomUG-ObGy-1 14.8 | H O | K | Homoeopathic Management | Discuss the homoeopathic Therapeutics for Hyperemesis Gravidarum | C2 | MK | Lecture/ Integrated teaching/ Project Based Learning | | SAQ | Materia Medica |
| HomUG-ObGy-1 14.9 | K & S | K | Backache | List the causes of backache during pregnancy | C1 | MK | Lecture/ Integrated teaching/ AV aids | MCQ VIVA | SAQ | Physiology |
| HomUG-ObGy-1 14.10 | K & S | K | | Discuss the Auxilliary management of backache during pregnancy | C2 | MK | Lecture/ Integrated teaching/ AV aids | MCQ VIVA | | Physiology |
| HomUG-ObGy-1 14.11 | H O | K | Homoeopathic Management | Discuss the homoeopathic Therapeutics for Backache during Pregnancy | C2 | MK | Lecture/ Integrated teaching/ Project Based Learning | MCQ VIVA | SAQ | Materia Medica |
| HomUG-ObGy-1 14.12 | K & S | K | Constipation | Discuss the Physiological cause for constipation during pregnancy | C1 | MK | Lecture/ Integrated teaching/ AV aids | | SAQ | Physiology |
| HomUG-ObGy-1 14.13 | H O | K | Homoeopathic Management | Discuss the homoeopathic Therapeutics for Constipation during Pregnancy | C2 | MK | Lecture/ Integrated teaching/ Project Based Learning | MCQ VIVA | SAQ | Materia Medica |
| HomUG-ObGy-1 14.14 | H O | K | | Discuss the homoeopathic Therapeutics for Minor Ailments during Pregnancy | C2 | MK | Lecture/ Integrated teaching/ Project Based Learning | MCQ VIVA | SAQ | Materia Medica |

6.13.1 Normal labour with its causes of onset, anatomy, physiology, mechanism, stages, events and clinical course in each stage, importance of Homoeopathic Scope and management

| Sl. No. | Domain Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integrated |
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| HomUG-ObGy-1 15.1 | K & S | K | Normal labour | Define Normal labour | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 15.2 | K & S | | | Define Eutocia | C I | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 15.3 | K & S | K | | Define Abnormal Labour | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 15.4 | K & S | K | | Discuss the causes of onset of labour | C1 | MK | Lecture Tutorials Small group discussion | | LA SAQ | Physiology |
| HomUG-ObGy-1 15.5 | K & S | K | | Describe the features of True labour pains | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 15.6 | K & S | K | | Describe the features of False labour pains | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |

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| HomUG -ObGy-1 15.7 | K & S | KH | | Differentiate true labour pains from false labour pains | C2 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG -ObGy-1 15.8 | K & S | K | | Describe the characteristic features of pre-term labour | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG -ObGy-1 15.9 | K & S | K | Normal labour | Describe the Physiology of Normal Labour | C1 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG -ObGy-1 15.10 | K & S | K | Stages of labour | Classify the Stages of Normal Labour | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG -ObGy-1 15.11 | K & S | K | | Describe the Stages of Normal Labour | C1 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG -ObGy-1 15.12 | K & S | K | | Discuss the events taking place in 1 st stage of labour | C1 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG -ObGy-1 15.13 | K & S | K | Events 1 st , 2 nd and 3 rd stage of labour | Discuss the events taking place in 2 nd stage of labour | C1 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG -ObGy-1 15.14 | K & S | K | | Discuss the events taking place in 3 rd stage of labour | C1 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG -ObGy-1 15.15 | K & S | K | | Discuss the 1 st stage of labour & the duration | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG -ObGy-1 15.16 | K & S | K | | Discuss the 2 nd stage of labour & the duration | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |

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| HomUG -ObGy-1 15.17 | K & S | K | Stages of 1 st , 2 nd and 3 rd stage of labour | Discuss the 3 rd stage of labour & the duration | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG -ObGy-1 15.18 | K & S | K | | Discuss the 4 th stage of labour | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG -ObGy-1 15.19 | K & S | K | | Define Episiotomy | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG -ObGy-1 15.20 | K & S | K | | Discuss the types of episiotomy | C1 | MK | Lecture Tutorials Small group discussion Mannikin | MCQ | SAQ | |
| HomUG -ObGy-1 15.21 | K & S | KH | | Discuss the complications of episiotomy | C2 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG -ObGy-1 15.22 | K & S | K | | Describe the mechanism of labour | C1 P I | MK | Lecture Tutorials Small group discussion Clinical demonstration Mannikin | | LA SAQ | |
| HomUG -ObGy-1 15.23 | K & S | K | Episiotomy | Define crowning | C1 | MK | Lecture Tutorials Small group discussion Mannikin | MCQ | SAQ | |
| HomUG -ObGy-1 15.24 | K & S | K | | Define Restitution | C1 | MK | Lecture Tutorials Small group discussion Mannikin | MCQ | SAQ | |
| HomUG -ObGy-1 15.25 | K & S | KH | | Discuss the management of 1 st stage of labour | C2 | MK | Lecture Tutorials Small group discussion Mannikin | | SAQ | |

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| HomUG -ObGy-1 15.26 | K & S | KH | | Discuss the management of 2 nd stage of labour | C2 | MK | Lecture Tutorials Small group discussion Mannikin | | SAQ | |
| HomUG -ObGy-1 15.27 | K & S | KH | Mechanism of labour | Discuss the management of 3 rd stage of labour | C2 | MK | Lecture Tutorials Small group discussion Mannikin | | SAQ | |
| HomUG -ObGy-1 15.28 | K & S | KH | Managemen t of 1 st , 2 nd 3 rd , and 4 th stage of labour | Discuss the management of 4 th stage of labour | C2 | MK | Lecture Tutorials Small group discussion Mannikin | | SAQ | |
| HomUG -ObGy-1 15.29 | H O | KH | Scope and limitation of homeopathy | Discuss the Scope of Homoeopathic in Labour normal Labour | C2 | MK | Lecture Tutorials Small group discussion | | LA SAQ | |
| HomUG -ObGy-1 15.30 | H O | K | Scope and limitation of homeopathy | Discuss the limitation of Homoeopathy Labour | C1 P I | MK | Lecture Tutorials Small group discussion | | LA SAQ | |
| HomUG -ObGy-1 15.31 | H O | KH | Homoeopat hic Materia medica | Discuss the homoeopathic remedies in labour | C2 | MK | Lecture Tutorials Small group discussion | MCQ | LA SAQ | |
| HomUG -ObGy-1 15.32 | H O | KH | &therapeuti cs | Discuss the characteristic features of indicated remedies | C2 | MK | Lecture Tutorials Small group discussion | MCQ | LA SAQ | |

6.14 Postnatal & puerperal care – scope and limitation of management in Homoeopathy

| Sl. No. | Domain Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| HomUG-ObGy-1 16.1 | K & S | K | Postnatal care | Define postnatal care | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 16.2 | K & S | K | Puerperium | Define Puerperium | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 16.3 | K & S | K | | Explain the duration of normal puerperium | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 16.4 | K & S | K | | Define Involution | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 16.5 | K & S | K | | Define Sub-involution | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |

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| HomUG-ObGy-1 16.6 | K & S | K | | Discuss the Anatomical Consideration of Involution of Uterus | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 16.7 | K & S | K | | Discuss the Physiological Consideration of Involution of Uterus | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 16.8 | K & S | D | | Demonstrate the clinical Assessment of Involution of Uterus | P-1 | MK | Lecture Tutorials Small group discussion | MCQ VIVA | SAQ | |
| HomUG-ObGy-1 16.9 | K & S | K | | Discuss the Involution of other Pelvic Structures | C1 | MK | Lecture Tutorials Small group discussion | VIVA | | |
| HomUG-ObGy-1 16.10 | K & S | K | | Define lochia | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 16.11 | K & S | K | | Describe the types of Lochia | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 16.12 | K & S | K | | Discuss the composition of lochia | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 16.13 | K & S | K | | Mention the normal duration of Lochia | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |

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| HomUG-ObGy-1 16.14 | K & S | K | | Discuss the clinical importance of Lochia | C1 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG-ObGy-1 16.15 | K & S | K | | Discuss the Normal Physiological changes occurs during puerperium. | C1 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG-ObGy-1 16.16 | K & S | K | | Discuss the general management during Puerperium | C1 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG-ObGy-1 16.17 | H O | KH | Homoeopathic Management | Discuss the homoeopathic remedies for puerperium. | C2 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG-ObGy-1 16.18 | H O | KH | | Discuss the characteristic features of indicated remedies | C2 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG-ObGy-1 16.19 | K & S | K | | Define Lactation | C1 | MK | Lecture Tutorials Small group discussion | MCQ VIVA | | |
| HomUG-ObGy-1 16.20 | K & S | K | | Define Colostrum | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 16.21 | K & S | K | | List Composition of Colostrum | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |

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| HomUG-ObGy-1 16.22 | K & S | K | | Describe the 4 stages in Physiology of Lactation | C1 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG-ObGy-1 16.23 | H O | KH | Homoeopathic Management | Discuss the homoeopathic remedies for increasing the milk | C2 | MK | Lecture Tutorials Small group discussion | | SAQ | Materia Medica |
| HomUG-ObGy-1 16.24 | K & S | KH | | Discuss the characteristic features of indicated remedy | C2 | MK | Lecture Tutorials Small group discussion | | SAQ | Materia Medica |
| HomUG-ObGy-1 16.25 | K & S | K | Postnatal care | Define Postnatal care | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | |
| HomUG-ObGy-1 16.26 | K & S | K | | Discuss the Objectives of postnatal care | C1 | MK | Lecture Tutorials Small group discussion | MCQ | SAQ | |
| HomUG-ObGy-1 16.27 | K & S | S | | Demonstrate the procedure of Postnatal examination of the Mother | C1 | DK | Lecture Tutorials Small group discussion | | | |
| HomUG-ObGy-1 16.28 | K & S | S | | Demonstrate the procedure of Postnatal examination of the Baby | C1 P I | DK | Lecture Tutorials Small group discussion | | | |
| HomUG-ObGy-1 16.29 | K & S | K | | Discuss the advice given to the postnatal mother | P I | MK | Lecture Tutorials Small group discussion | | SAQ | |

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| HomUG-ObGy-1 16.30 | H O | KH | Homoeopathic management | Discuss the Scope of Homoeopathic remedies in Postnatal care | C2 | MK | Lecture Tutorials Small group discussion | | SAQ | Materia medica |
| HomUG-ObGy-1 16.31 | H O | K | | Discuss the Limitation of Homoeopathic management in postnatal puerperal case | C1 P 1 | MK | Lecture Tutorials Small group discussion | | SAQ | Organon of medicine |

6.15 Care of new born in homoeopathic point of view:

| Sl. No. | Domain Competency | Miller | Content | Specific Learning Objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | Formative | Summative | |
| HomUG-ObGy-1 17.1 | K & S | K | New born infant | Define New born infant | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Paediatrics |
| HomUG-ObGy-1 17.2 | K & S | K | | Explain weaning of infant. | C1 P I | MK | Lecture Tutorials Small group discussion Clinical demonstration | VIVA | | |

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| HomUG-ObGy-1 17.3 | K & S | K | New born infant | Describe the physical features of new born infant at birth | C 1 | MK | Lecture Tutorials Small group discussion Clinical demonstration | | SAQ | |
| HomUG-ObGy-1 17.4 | K & S | S | | Demonstrate the vital signs of new born infant immediate after birth. | C 1 P I | MK | Lecture Tutorials Small group discussion Manikin Bedside | MCQ | | |
| HomUG-ObGy-1 17.5 | K & S | S | | Demonstrate the general physical examination findings of new born | C1 P I | MK | Lecture Tutorials Small group discussion Clinical demonstration | MCQ | | |
| HomUG-ObGy-1 17.6 | K & S | S | | Elicit the reflexes of new born | C1 | MK | Lecture Tutorials Small group discussion Clinical bed side demonstration | MCQ | | |
| HomUG-ObGy-1 17.7 | K & S | KH | | Explain the Immediate care of new born | C1 P I | MK | Lecture Tutorials Small group discussion Manikin Bedside | | SAQ | |
| HomUG-ObGy-1 17.8 | K & S | K | | Discuss the advantage of breast feeding | C1 P I | MK | Lecture Tutorials Small group discussion | | SAQ | |

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| HomUG-ObGy-1 17.9 | K & S | K | Breast feeding | Discuss the contraindications for breast feeding | C1 P I | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG-ObGy-1 17.10 | K & S | KH | | Describe the indication for Artificial feeding. | C 2 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG-ObGy-1 17.11 | K & S | KH | | Discuss the difficulties faced during breast feeding due to mother & Baby | C2 | MK | Lecture Tutorials Small group discussion | | SAQ | |
| HomUG-ObGy-1 17.12 | K & S | KH | | Discuss the Daily Observation and care of new born | C2 | DK | Lecture Tutorials Small group discussion | | SAQ | Paediatrics |
| HomUG-ObGy-1 17.13 | K & S | S | | Discuss Infant Growth Assessment | C1 | NK | Lecture Tutorials Small group discussion | | SAQ | Paediatrics |
| HomUG-ObGy-1 17.14 | K & S | K | | Define APGAR Score of Newborn | C1 | MK | Lecture Tutorials Small group discussion Clinical demonstration | MCQ | SAQ | Paediatrics |
| HomUG-ObGy-1 17.15 | K & S | K | | Describe the parameters of APGAR Scoring of New-born | C1 P 1 | MK | Lecture Tutorials Small group discussion Clinical demonstration | | SAQ | Paediatrics |
| HomUG-ObGy-1 17.16 | K & S | K | | Discuss importance of performing APGAR | C1 | DK | Lecture Tutorials | MCQ | SAQ | Paediatrics |

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| | | | | Scoring at intervals after birth | | | Small group discussion | | | |
| HomUG-ObGy-1 17.17 | H O | KH | Homoeopathic Management | Discuss the Scope of Homoeopathy in New born Care | C2 | MK | Lecture Tutorials Small group discussion | | SAQ | Organon of medicine |
| HomUG-ObGy-1 17.18 | H O | KH | Homoeopathic Management | Discuss Homoeopathic remedies in new born care | C2 | MK | Lecture Tutorials Small group discussion | SAQ | | Materia medica |
| HomUG-ObGy-1 17.19 | H O | K | | Discuss the characteristic features of indicated remedies | C2 | MK | Lecture Tutorials Small group discussion | SAQ | | Materia medica |

6.16 General and Homoeopathic management, repertorisation, therapeutics, posology. Formulation of prognostic criteria and Prognosis of related topics in Obstetrics and new born care

| Sl. No. | Domain Competency | Miller | Content | Specific learning objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integrated |
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| | | | | | | | | Formative | Summative | |
| HomUG-ObGy-1 18.1 | H O | KH | Homoeopathic therapeutics | Discuss the Homoeopathic materia medica & therapeutics in Antenatal ailments | C2 | MK | Lecture Tutorials Small discussion group | | SAQ | Materia medica |
| HomUG-ObGy-1 18.2 | H O | KH | | List the Homoeopathic remedies commonly used in obstetrics | C2 | MK | Lecture Tutorials Small discussion group | | SAQ | Materia medica |
| HomUG-ObGy-1 18.3 | H O | KH | | Discuss the characteristic features of the indicated remedies. | C2 | MK | Lecture Tutorials Small discussion group | | SAQ | Materia medica |
| HomUG-ObGy-1 18.4 | H O | KH | | List the Homoeopathic remedies commonly used in New born care | C2 | MK | Lecture Tutorials Small discussion group | | SAQ | Materia medica |
| HomUG-ObGy-1 18.5 | H O | KH | | Discuss the characteristic features of indicated remedies | C2 | MK | Lecture Tutorials | | SAQ | Materia medica |

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| | | | | | | | Small discussion group | | | |
| HomUG-ObGy-1 18.6 | H O | KH | | Discuss the differentiation of the remedies | C1 | MK | Lecture Tutorials Small discussion group | MCQ | | Materia medica |
| HomUG-ObGy-1 18.7 | H O | KH | | Discuss the remedy relationship wherever applicable | C1 | MK | Lecture Tutorials Small discussion group | MCQ | | Materia medica |
| HomUG-ObGy-1 18.8 | H O | KH | Repertorisation | Discuss the selection of repertories in Obstetrical care | C-3 | MK | Lecture Tutorials Small discussion group | MCQ | | Repertory |
| HomUG-ObGy-1 18.9 | H O | KH | | Discuss the selection of repertories in New born care | C-3 | MK | Lecture Tutorials Small discussion group | MCQ | | Repertory |
| HomUG-ObGy-1 18.10 | H O | S | | Explain how to convert symptoms into rubrics from different repertories in Obstetricas. | C-3 | MK | Lecture Tutorials Small discussion group | MCQ | | Repertory |
| HomUG-ObGy-1 18.11 | H O | S | | Explain how to convert symptoms into rubrics from different repertories in New born care. | C-3 | MK | Lecture Tutorials Small discussion group | MCQ | | Repertory |
| HomUG-ObGy-1 18.12 | H O | K | | Discuss the selection of repertory based on symptomatology | C-1 | MK | Lecture Tutorials Small discussion group | MCQ | | Repertory |

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| HomUG-ObGy-1 18.13 | H O | KH | Posology | Discuss the selection of similimum based on symptomatology | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Organon of medicine |
| HomUG-ObGy-1 18.14 | H O | KH | | Describe methods of potency selection | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Organon of medicine |
| HomUG-ObGy-1 18.15 | H O | K | | Discuss the factors for selection of posology. | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Organon of medicine |
| HomUG-ObGy-1 18.16 | H O | K | | Discuss the criteria for repetition of doses | C1 | MK | Lecture Tutorials Small group discussion | MCQ | | Organon of medicine |

6.17 Important Investigations for diagnosis in Obstetrics

| Sl. No. | Domain Competency | Miller | Content | Specific learning objectives | Bloom/ Guilbert | Priority | TL MM | Assessment | | Integration |
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| | | | | | | | | Formative | Summative | |
| HomUG-ObGy-1 19.1 | P C | K | Ultrasonography | Discuss the indications for USG in 1 st trimester. | C1 | MK | Small group discussion Tutorials CBL PBL | MCQ | | Radiology |
| HomUG-ObGy-1 19.2 | P C | K | | Discuss the findings of hydatidiform mole in USG | C1 | MK | Small group discussion Tutorials CBL PBL | MCQ | | Radiology |
| HomUG-ObGy-1 19.3 | P C | K | | Discuss the finding of abortion in USG | C1 | MK | Small group discussion Tutorials CBL PBL | MCQ | | Radiology |
| HomUG-ObGy-1 19.4 | P C | K | | Discuss the findings of normal pregnancy in USG | C1 | MK | Small group discussion Tutorials CBL PBL | MCQ | | Radiology |

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| HomUG-ObGy-1 19.5 | P C | K | | Discuss the findings of Anterio – posterior diameters of the fetal skull in USG. | C1 | MK | Small discussion group Tutorials CBL PBL | MCQ | | Radiology |
| HomUG-ObGy-1 19.6 | P C | K | | Discuss the findings of biparietal (BPD) diameters of the fetal skull in USG. | C1 | MK | Small discussion group Tutorials CBL PBL | MCQ | | Radiology |
| HomUG-ObGy-1 19.7 | P C | K | | Discuss the findings of Crown Rump Length in USG | C1 | MK | Small discussion group Tutorials CBL PBL | MCQ | | Radiology |
| HomUG-ObGy-1 19.8 | P C | K | | Discuss the findings of Amniotic fluid in USG | C1 | MK | Small discussion group Tutorials CBL PBL | MCQ | | Radiology |
| HomUG-ObGy-1 19.9 | P C | K | | Discuss the findings of foetal growth in each trimester in USG | C1 | MK | Small discussion group Tutorials CBL PBL | MCQ | | Radiology |
| HomUG-ObGy-1 19.10 | P C | K | | Discuss the findings of Malformations of the foetus in USG | C1 | MK | Small discussion group Tutorials CBL PBL | MCQ | | Radiology |

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|-----------------------|-----|---|------------|--|----|----|---|-----|--|--------------|
| HomUG-ObGy-1 19.11 | P C | K | | Discuss the findings of malformation of the uterus in USG | C1 | MK | Small discussion group Tutorials CBL PBL | MCQ | | Radiology |
| HomUG-ObGy-1 19.12 | P C | K | | Discuss the urine test pregnancy test in amenorrhoea women | C1 | MK | Small discussion group Tutorials CBL PBL | MCQ | | Biochemistry |
| HomUG-ObGy-1 19.13 | P C | K | | Discuss the immunological test for pregnancy | C1 | MK | Small discussion group Tutorials CBL PBL | MCQ | | Biochemistry |
| HomUG-ObGy-1 19.14 | P C | K | | Discuss the conditions where B-HCG tests are done. | C1 | DK | Small discussion group Tutorials CBL PBL | | | Biochemistry |
| HomUG-ObGy-1 19.15 | P C | K | Blood test | Discuss the importance of Hb in pregnancy. | C1 | MK | Small discussion group Tutorials CBL PBL | MCQ | | Biochemistry |
| HomUG-ObGy-1 19.16 | P C | K | | Discuss the importance of blood group & Rh group in pregnancy. | C1 | MK | Small discussion group Tutorials CBL PBL | MCQ | | Biochemistry |

| | | | | | | | | | | |
|-----------------------|-----|---|--|--|----|----|--|-----|--|--|
| HomUG-ObGy-1 19.17 | P C | K | | Discuss the importance of FBS, RBS and PPBS in pregnancy | C1 | MK | Small group discussion Tutorials CBL PBL | MCQ | | |
| HomUG-ObGy-1 19.18 | P C | K | | Describe the importance of Thyroid function tests in pregnancy | C1 | MK | Small group discussion Tutorials CBL PBL | MCQ | | |

7 Teaching learning methods

| Lectures (Theory) | Non-lectures (Practical/Demonstrative) |
|------------------------|--|
| Lectures | Clinical demonstration |
| Small group discussion | Problem based discussion |
| Integrated lectures | Case based learning |
| | Assignments |
| | Library reference |
| | Self-learning |

8 Details of assessment

Note- The assessment in II BHMS shall be done only as Internal Assessment (IA) in terms of Periodical Assessments (PA) and Term Tests (TT) as detailed below. There shall not be any Final University Examination (FUE) at this level. The marks obtained in IA during II BHMS will be added to the marks of IA in the III BHMS University Examination.

Overall Scheme of Internal Assessment (IA)***

| Professional Course/ Subject | Term I (1-6 Months) | | Term II (7-12 Months) | |
|---|-------------------------|---|-------------------------|---|
| II BHMS/ Obstetrics & Gynaecology | PA I (end of 3 months) | TT I (end of 6 months) | PA II (end of 9 months) | TT II (end of 12 months) |
| | 20 Marks Viva- A | 100 Marks Clinical/Practical and Viva - E i) Viva voce -50 marks ii) Clinical/practical*- 50 | 20 Marks Viva- B | 100 Marks Clinical/Practical and Viva - F i) Viva voce -50 marks ii) Clinical/practical** - 50 |

****Practical Examinations TT I:***

- a) **Case taking:** Recording of case in Obstetrics & Gynaecology. **(20 marks)**
- b) **Demonstration: (15 Marks)**
 - General physical examination
 - Per abdominal examination
 - Pelvic grips
- c) **Lab Investigations:** Suggest the relevant lab investigations for 1st, 2nd and 3rd trimester (**5 marks**)
- d) **Demonstration of foetal skull & Pelvic diameters (10 marks)**

****Practical Examinations TT II:**

- a) **Case taking:** Recording of case taking in Obstetrics & Gynaecology. **(20 marks).**
- b) **Examination of the patient (10 marks)**
 - General physical examination
 - Breast examination
 - Obstetric examinations
 - Post-natal examinations.
 - New born care examination
- c) **Analysis of the case (5 marks)**
- d) **Journal submission - 5 cases (10 marks)**

Journal shall have following cases with analysis-

Gynaec-3, ANC-1, PNC-1
- e) **Dummy & Pelvis:** Demonstration of fetal skull diameters, Sutures and pelvic diameters. **(05 marks)**

*****Method of Calculation of Internal Assessment Marks in II BHMS for Final University Examination to be held in III BHMS:**

| Marks of PA I | Marks of PA II | Periodical Assessment Average PA I+ PA II /2 | Marks of TT I | Marks of TT II | Terminal Test Average TT I + TT II / 200 x 20 | Final Internal Assessment Marks |
|---------------|----------------|--|---------------|----------------|--|---------------------------------------|
| A | B | D | E | F | G | D+G/2 |

9 List of recommended text/reference books

- Dutta,D.C,(2023).*Text book of Obstetrics*,10thedition, New Central Book Agency Pvt Ltd.,
- Dutta D.C (2020).*Text book of Gynaecology*, 8th edition, New Central Book Agency Pvt Ltd.
- Lilienthal Samuel (Reprint 2003), *Homoeopathic Therapeutics*, 5 edition B Jain Publishers (P) Ltd
- Guernsey H.N. *Principles & Practice of Homoeopathy in Obstetrics & Paediatrics*.
- Minton, *Uterine therapeutics Materia medica & Repertory*, B Jain publishers (P) Ltd.

10 List of contributors:

- I. **Dr. Vilma Meera Dsouza** – Vice Principal, Professor & Hod, Department Of Gynaecology & Obstetrics, Father Muller Homoeopathic Medical College And Hospital, Deralakatte, Mangalore.
- II. **Dr. Neetu Singh** – Professor & Hod, Department Of Gynaecology & Obstetrics, Mangilal Nirban Homoeopathic Medical College And Research Institute, Bikaner, Rajasthan.
- III. **Dr Rekha Thomas** - Professor And Hod, Department Of Gynecology And Obstetrics, Nehru Homoeopathic Medical College And Hospital, New Delhi.

Subject Name- Homoeopathic Repertory and Case Taking

Subject Code: HomUG-R-II

Index

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1. Preamble

The repertory is a dictionary or storehouse or an index to the huge mass of symptoms of the Materia Medica. The repertory is organized in a practical form indicating the relative gradation of drugs. Repertories not only contain symptoms of proving but also clinical and pathological symptoms found in the Materia Medica and additions made by authors based on their clinical experience. As no mind can memorize all the symptoms of the Materia Medica with their relative grading, repertories serve as an instrument at the disposal of the physician for sifting through the maze of symptoms of the vast Materia Medica. Case taking is the elementary mode of collecting data from the patient and the principles and techniques of case taking will demand constant updating of knowledge of the disease processes and way of interacting with human beings.

Need of the repertory as a tool arose when the number of remedies went on increasing and it was becoming humanly difficult to remember all the symptoms. A simple solution was to index the symptoms with the name of the drug. Repertories aim at simplifying the work of the physician to find the indicated remedy by eliminating the non-indicated remedies. Repertorisation is not the end but means to arrive to the simillimum and reference to Materia Medica based on sound principles of Philosophy is the final court of appeal.

Each repertory has been compiled on the basis of distinct philosophy, structure and utility. To use these instruments effectively, one must understand thoroughly its conceptual base, construction and utility and limitations. Even though there are a number of repertories, the student at the undergraduate level is expected to learn the philosophy and application of basic core repertories namely Kent, BBCR and BTPB. The subject of Repertory must not be taught in isolation but must be taught in horizontal integration with Anatomy and Physiology in I BHMS, Pathology in II BHMS, Surgery and Gynaecology in III BHMS and Practice of Medicine in IV BHMS and vertically integrated with Materia Medica and Organon and Homoeopathic Philosophy in all the years. Integrated teaching over all the years will help the student to grasp and understand the subjects better and connect repertory to all other subjects.

Similarly, case taking demands virtually integrating all the subjects taught from the I through IV BHMS in the consulting room or at the bedside. The physician can never say that he has learnt all every new patient has a new lesson to teach.

The advent of computerization and resulting software has opened many new avenues to collate and correlate the vast information found in the Materia Medica through the repertories. Continued exploration of these connections will generate new data, new repertories and the new application to existing or new illnesses.

2. Course outcomes

At the end of BHMS course, the learner will be able to:

- i. Explain the need and utility of repertory as a tool to find the similimum and in the study of Materia Medica.
- ii. Describe the philosophical backgrounds, construction, utility and limitation of Kent repertory, BTBP, BBCR, Boericke repertory, other clinical repertories and modern repertories.
- iii. Able to describe the various dimension of case taking and able to demonstrate case taking in moderate and difficult cases.
- iv. Classify the symptoms, evaluate the symptoms according to their importance and construct the totality of symptoms based on different philosophies (Dr Kent, Dr Boenninghausen, Dr Hahnemann, Garth Boericke).
- v. Choose an appropriate approach for the case, construct the Repertorial Totality and select the appropriate rubrics and technique of repertorisation.
- vi. Identify the medium, method, process and technique of repertorization.
- vii. Display empathy with the patient and family during case taking.
- viii. Communicate to the patient and attendants the need for sharing patient related information for a complete homoeopathic case taking.
- ix. Develop ability to apply different case taking skills.
- x. Search for the appropriate rubrics in different repertory.
- xi. Understanding and evolution of modern repertories, computerized repertories, operate and use software-based repertories for repertorization.

3. Learning objectives

At the end of II BHMS, the learner will be able to:

1. Describe the steps of case taking in acute and chronic cases
2. Perform simple case taking in acute and chronic case under guidance
3. Illustrate the structure of Boericke repertory
4. Locate different pathological rubrics from Boericke repertory and Kent's repertory

4. Course content and its term-wise distribution(theory)

4.1 Case Taking (Term I)

- 4.1.1 Demonstration of Homoeopathic case taking in simple, acute and chronic cases (*refer to the table in Annex-A at the end defining category of the cases*)
- 4.1.2 Instructions given in Organon regarding case taking

4.2 Correlation of Repertory with Disease and Pathology (Term II)

- 4.2.1 Introduction to Boericke's repertory
- 4.2.2 Representation of different pathologies and pathogenesis in Boericke and Kent repertory
- 4.2.3 Understanding holistic concept of disease, constitution, diathesis, susceptibility and temperament

5. Teaching hours

5.1. Gross division of teaching hours

| Homoeopathic Repertory and Case Taking | | |
|--|--------------------------|------------------------------|
| Year | Teaching hours- Lectures | Teaching hours- Non-lectures |
| II BHMS | 50 | 30 |

5.2. Teaching hours theory

| S. No. | List of Topics | Hours (Total 50 hrs) |
|--------|--|-----------------------|
| | Term I | |
| 1. | Demonstration of Homoeopathic case taking in simple acute cases | 09 |
| 2. | Demonstration of Homoeopathic case taking in simple chronic cases | 08 |
| 3. | Instruction given in Organon regarding case taking | 05 |
| | Total | 22 |
| | Term II | |
| 4. | Introduction to Boericke repertory | 10 |
| 5. | Representation of different pathologies and pathogenesis in Boericke and Kent repertory | 06 |
| 6. | Understanding holistic concept of disease, constitution, diathesis, susceptibility and temperament | 12 |
| | Total | 28 |

5.3. Teaching hours Non-lecture

| Sr. No | Non-Lecture Activity | Hours |
|----------------|---|-----------|
| Term I | | |
| 1 | Clinical | 15 |
| 2 | Demonstrative | |
| 2(a) | Seminar / Tutorials | 01 |
| 2(b) | Problem based learning/ Case Based Learning | 02 |
| 2(c) | Assignment/ Symposium / Group discussion | 02 |
| Term II | | |
| 1 | Clinical | 05 |
| 2 | Demonstrative | |
| 2(a) | Seminar / Tutorials | 01 |
| 2(b) | Problem based learning/ Case Based Learning | 01 |
| 2(c) | Assignment/ Symposium / Group discussion// Rubric hunting exercises | 03 |
| | Total | 30 |

6. Content mapping

6.1. Topic: - Demonstration of Homoeopathic Case Taking in simple acute cases (importance & its application) and instructions given in Organon regarding case taking

| Sl. No. | Domain of Competency | Miller's level | Content | SLO | Bloom/ Guilbert | Priority | Teaching- Learning Method/Media | Assessment | | Integration |
|------------------------|----------------------|----------------|--|---|---|-------------------|---------------------------------------|----------------------|---|--|
| | | | | | | | | F | S | |
| Hom UG-R- II-2.1 | K/HO | Knows | Acquiring knowledge, skill and attitude about patient and doctor communication and examination in simple acute disease | Define an acute Disease | Cognitive/ Level -1 Remembers/ Recalls | Must Know | Lecture Small Group Discussion | SAQ Viva- voce | – | Horizontal integration with Organon of Medicine Spiral Integration in III & IV BHMS |
| Hom UG-R- II-2.2 | K/HO | Knows | | Classify diseases as per Hahnemann's Philosophy | Cognitive/ Level -1 Remembers/ Recalls | Desirable to Know | Lecture Small Group Discussion | SAQ Viva- voce | – | |
| Hom UG-R- II-2.3 | K/HO | Knows | | State the Aphorisms dealing with Acute Case Taking and classification of acute disease | Cognitive/ Level -1 Remembers/ Recalls | Must know | Lecture Integrated discussion | SAQ Viva- voce | – | |
| Hom UG-R- II-2.4 | K/HO/PC | Knows how | | Explain the basic structure of case taking. List the steps of case taking in simple acute cases | Cognitive/ Level -1 Remembers/ Recalls | Must know | Lecture Integrated discussion | SAQ Viva- voce | – | |

| Sl. No. | Domain of Competency | Miller's level | Content | SLO | Bloom/Guilbert | Priority | Teaching-Learning Method/Media | Assessment | | Integration |
|-----------------|----------------------|----------------|---------|---|---|-----------|--|------------------|---|--|
| | | | | | | | | F | S | |
| Hom UG-R-II-2.5 | K/HO/PC | Shows how | | Demonstration of simple acute case taking | Psychomotor Level -1 Interpret/Decide/Demonstrate Cognitive/Level -2 understand/describe | Desirable | Clinical Class Small Group Discussion (I | SAQ Viva-voce | – | Horizontal integration with Pathology & Practice of Medicine |
| Hom UG-R-II-2.6 | K/HO/PC | Shows how | | Observe the skills of clinical examination of simple acute case | Psychomotor Level -1 Interpret/Decide/Demonstrate | Desirable | Clinical Class Small Group Discussion | SAQ Viva-voce | – | Spiral Integration in III & IV BHMS |

6.2. Topic: - Demonstration of Homoeopathic Case Taking in simple Chronic cases (importance & its application) and instructions given in Organon regarding Case Taking

| Sl. No. | Domain of Competency | Miller's level | Content | SLO | Bloom/Guilbert | Priority | Teaching-Learning Method/Media | Assessment | | Integration |
|-----------------|----------------------|----------------|---|--|---|-----------|-----------------------------------|------------------|---|--|
| | | | | | | | | F | S | |
| Hom UG-R-II-2.7 | K/HO | Knows | Acquiring knowledge, skill and attitude about | Define a Chronic Disease as per Hahnemann's Philosophy | Cognitive/Level -1 Remembers/Recalls | Must Know | Lecture Small Group Discussion | SAQ Viva-voce | – | Horizontal integration with Organon of Medicine, |

| Sl. No. | Domain of Competency | Miller's level | Content | SLO | Bloom/Guilbert | Priority | Teaching-Learning Method/Media | Assessment | | Integration |
|------------------|----------------------|----------------|---|---|---|-------------------|---|--------------------|---|---|
| | | | | | | | | F | S | |
| Hom UG-R-II-2.8 | K/HO | Knows | patient and doctor communication and examination in chronic disease | Classify chronic diseases as per Hahnemann's Philosophy | Cognitive/ Level -1 Remembers/ Recalls | Desirable to Know | Lecture Small Group Discussion | SAQ Viva - voce | — | Spiral Integration in III & IV BHMS |
| Hom UG-R-II-2.9 | K/HO | Knows | | List the aphorisms dealing with Chronic Case Taking | Cognitive/ Level -1 Remembers/ Recalls | Must know | Lecture Integrated discussion | SAQ Viva - voce | — | |
| Hom UG-R-II-2.10 | K/HO/PC | Knows how | | Explain the basic structure of chronic case taking. List the steps of chronic case taking | Cognitive/ Level -1 Remembers/ Recalls | Must know | Lecture Integrated discussion | SAQ Viva - voce | — | |
| Hom UG-R-II-2.11 | K/HO/PC | Shows how | | Demonstration of case taking simple chronic cases | Psychomotor Level -1 Interpret/ Decide/ Demonstrate | Desirable | Lecture/ Clinical Class Small Group Discussion Integrated discussion | SAQ Viva - voce | — | Horizontal integration with Organon of Medicine, Pathology & Practice of Medicine |
| Hom UG-R-II-2.12 | K/HO/PC | Shows how | | Observe the skills of clinical examination of simple chronic case | Psychomotor Level -1 Interpret/ Decide/ Demonstrate Cognitive/ Level -2 understand/ describe | Desirable | Clinical Class Small Group Discussion | SAQ Viva - voce | — | Spiral Integration in III & IV BHMS |

6.3. Topic: - Introduction to Boericke's Repertory

| Sl. No. | Domain of Competency | Miller's level | Content | SLO | Bloom/ Guilbert | Priority | Teaching-Learning Method/Media | Assessment | | Integration |
|-----------------|----------------------|----------------|--|---|--|-------------------|--------------------------------|-----------------|---|--|
| | | | | | | | | F | S | |
| Hom UG-R-II-3.1 | K/HO | Knows | Acquiring knowledge about Boericke's Repertory | Discuss the life history of Oscar Boericke with reference to his contributions to repertory | Cognitive/ Level -1 Remembers/ Recalls | Nice to Know | Lecture | Viva - voce | — | Horizontal integration with Organon of Medicine |
| Hom UG-R-II-3.2 | K/HO | Knows | | Outline the Plan of Boericke's Repertory | Cognitive/ Level -1 Remembers/ Recalls | Desirable to Know | Lecture Rubric Hunting | SAQ Viva - voce | — | |
| Hom UG-R-II-3.3 | K/HO | Knows | | Describe the Construction of Boericke's Repertory | Cognitive/ Level -1 Remembers/ Recalls | Must know | Lecture Rubric Hunting | SAQ Viva - voce | — | |
| Hom UG-R-II-3.4 | K/HO | Knows | | Explain the Importance of knowledge of pathology and clinical medicine for using Boericke's Repertory | Cognitive/ Level -2 Remembers/ Recalls | Desirable to Know | Lecture Rubric Hunting | SAQ Viva - voce | — | Horizontal integration with Organon of Medicine, Pathology, Practice of Medicine Spiral Integration in III & IV BHMS |
| Hom UG-R-II-3.5 | K/HO | Knows how | | Mention the Scope, Limitation & adaptability of Boericke's Repertory | Cognitive/ Level -2 Understands | Desirable | Lecture Rubric Hunting | SAQ Viva - voce | — | |

6.4. Topic: - Representation of different pathologies and pathogenesis in Boericke and Kent

| Sl. No. | Domain of Competency | Miller's level | Content | SLO | Bloom/Guilbert | Priority | Teaching-Learning Method/Media | Assessment | | Integration |
|-----------------|----------------------|----------------|---|--|--|-------------------|--------------------------------|------------|---|---|
| | | | | | | | | F | S | |
| Hom UG-R-II-4.1 | K/HO | Knows How | Identifying Representation of different pathologies and pathogenesis in Boericke and Kent Repertory | Identify the rubrics representing different pathologies and pathogenesis in Boericke repertory | Cognitive/ Level -1 Remembers/ Recalls | Desirable to Know | Lecture Rubric Hunting | MCQ Quiz | – | Horizontal integration with Pathology, Practice of Medicine Spiral Integration in III & IV BHMS |
| Hom UG-R-II-4.2 | K/HO | Knows How | | Identify the rubrics representing different pathologies and pathogenesis in Kent repertory | Cognitive/ Level -1 Remembers/ Recalls | Desirable to Know | Lecture Rubric Hunting | MCQ Quiz | – | |

6.5. Topic: - Understanding holistic concept of disease, miasm, constitution, diathesis, susceptibility and temperament in Boericke and Kent Repertory

| Sl. No. | Domain of Competency | Miller's level | Content | SLO | Bloom/Guilbert | Priority | Teaching-Learning Method/Media | Assessment | | Integration |
|-----------------|----------------------|----------------|--|--|--|-------------------|--------------------------------|------------|---|--|
| | | | | | | | | F | S | |
| Hom UG-R-II-5.1 | K/HO | Knows | Understanding the representation of constitution, diathesis, susceptibility and temperament in Boericke and Kent Repertory | Discuss the holistic concept of Health with relation to the study of repertory | Cognitive/ Level - 1 Understands | Desirable to Know | Lecture | Viva-voce | | Horizontal integration with Organon of Medicine, Pathology, Practice of Medicine |
| Hom UG-R-II-5.2 | K/HO | Knows | | Discuss the concept of Disease with relation to the study of repertory | Cognitive/ Level - 1 Understands | Desirable to Know | Lecture | Viva-voce | | |
| Hom UG-R-II-5.3 | K/HO | Knows | | Define Constitution, diathesis, susceptibility & Temperament | Cognitive/ Level - 2 Understands & Interpret | Desirable to Know | Lecture | Viva-voce | | Spiral Integration in III & IV BHMS |

| Sl. No. | Domain of Competency | Miller's level | Content | SLO | Bloom/Guilbert | Priority | Teaching-Learning Method/Media | Assessment | | Integration |
|-----------------|----------------------|----------------|---------|---|--|-------------------|--------------------------------|------------|---|-------------|
| | | | | | | | | F | S | |
| Hom UG-R-II-5.4 | K/HO | Knows How | | Identify the rubrics representing different constitution, diathesis, susceptibility and temperament in Boericke repertory | Cognitive/ Level - 2 Understands & interpret | Desirable to Know | Lecture Rubric Hunting | MCQ Quiz | – | |
| Hom UG-R-II-5.5 | K/HO | Knows How | | Identify the rubrics representing different constitution, diathesis, susceptibility and temperament in Kent repertory | Cognitive/ Level - 2 Understands & Interpret | Desirable to Know | Lecture Rubric Hunting | MCQ Quiz | – | |

7. Teaching Learning Methods

| Lectures (Theory) | Non-lectures (Practical/Demonstrative) |
|--|--|
| Lecture | Clinical Class |
| Small Group Discussion | Rubric hunting exercises |
| Integrated discussion with subjects of Organon of Medicine, Pathology & Practice of Medicine | Case based learning |
| | Seminar |
| | Tutorial |
| | Group Discussion |

8. Details of assessment

Note- The assessment in II BHMS shall be done only as Internal Assessment (IA) in terms of Periodical Assessments (PA) and Term Tests (TT) as detailed below. There shall not be any Final University Examination (FUE) at this level. The marks obtained in IA during II BHMS will be added to the marks of IA in the III BHMS University Examination.

Overall Scheme of Internal Assessment (IA)*

| Professional Course/ Subject | Term I (1-6 Months) | | Term II (7-12 Months) | |
|------------------------------|-------------------------|--|-------------------------|---|
| | PA I (end of 3 months) | TT I (end of 6 months) | PA II (end of 9 months) | TT II (end of 12 months) |
| II BHMS/ Repertory | 10 Marks Viva- A | 50 Marks Clinical/Practical and Viva - E i) Viva voce -25 marks ii) Clinical/practical- 25 a. Recording of Simple acute case - 20 marks b. Analyse the case for acute and chronic disease as per Hahnemann's classification of disease - 05 marks | 10 Marks Viva- B | 50 Marks Clinical/Practical and Viva – F Viva voce -25 marks i) Clinical/practical- 25 a. Recording of Simple chronic case-15 marks c. Analyse the case for acute and chronic disease as per Hahnemann's classification of disease - 05 marks b. Locate the rubrics for pathologies in Boericke & Kent's repertory- 05 marks |
| | | | | |

***Method of Calculation of Internal Assessment Marks in II BHMS for Final University Examination to be held in III BHMS:**

| Marks of PA I | Marks of PA II | Periodical Assessment Average PA I+ PA II /2 | Marks of TT I | Marks of TT II | Terminal Test Average TT I + TT II / 200 x 20 | Final Internal Assessment Marks |
|---------------|----------------|--|---------------|----------------|--|---------------------------------------|
| A | B | D | E | F | G | D+G/2 |

9. List of recommended text/reference books

- Ahmed Munir R(2016). Fundamentals of repertories: Alchemy of homeopathic methodology.
- Bidwell GL.(1915). How to Use the Repertory.
- Boericke, W. (2003). New manual of homoeopathic materia medica and repertory.
- Hahnemann, S. (2014). Organon of Medicine.
- Kent, J. T. (2008). Lectures on Homeopathic Philosophy.
- Kent, J. T. (2016). Repertory of the homeopathic materia medica.
- Kent, J. T: How to study the Repertory, how to use the Repertory.
- Tiwari SK. (2007). Essentials of Repertorization.

10. List of contributors

- I. Dr. Anoop Nigwekar, Professor &HoD, Repertory, Dr. M.L. Dhawale Memorial Homoeopathic Institute, Palghar, Maharashtra
- II. Dr. Yashasvi Shakdviya, Associate Professor &HoD, Repertory, University College of Homoeopathy, DSRRU, Jodhpur, Rajasthan.
- III. Dr. Lokanath Behera, Associate Professor &HoD, Repertory, National Institute of Homoeopathy, (An Autonomous Institute) Ministry of Ayush, Govt. of India, Block- GE, Sector-III, Salt Lake, Kolkata – 700106

Annexure A (in reference of course content sub clause 4.1.1)

| | Simple case | Moderate case | Difficult case |
|---------------------|--|---|---|
| Acute case | A case of acute nature as defined by Hahnemann; which is presenting with complete symptoms of either one location or one system of single malady with no other comorbid conditions. Cases where case processing is easy and constructing totality/ rubric search for reference/ Repertorization is easy. | A case of acute nature as defined by Hahnemann; which is presenting with mixed symptomatology (complete as well incomplete symptoms) of multiple location or of single malady of functional level with other comorbid conditions of functional level. Cases where case processing needs a certain set of knowledge, skill for construction of totality and rubric search/ Repertorization is somewhat more difficult then simple cases. | A case of acute nature as defined by Hahnemann; which is presented with mixed symptomatology of multiple locations with structural changes or a complex disease. Cases where case processing needs a certain set of knowledge, skill for construction of totality and rubric search/ Repertorization is somewhat difficult then moderate cases. |
| Chronic case | A case of chronic nature as defined by Hahnemann; which is having complete symptoms of either one location or one system of single malady with no other comorbid conditions. Cases where case processing is easy and constructing Repertorial totality/ rubric search/ Repertorization is easy. | A case of chronic nature as defined by Hahnemann; which is presenting with mixed symptomatology (complete as well incomplete symptoms) of multiple locations or of single malady of functional level with other comorbid conditions of functional level. Cases where case processing needs a certain set of knowledge, skill for construction of totality and rubric search/ Repertorization is somewhat difficult then simple cases. | A case of chronic nature as defined by Hahnemann; with mixed symptomatology of multiple locations with structural changes or a complex disease. Cases where case processing needs a certain set of knowledge, skill for construction of totality and rubric search/ Repertorization is somewhat difficult then moderate cases |

Swarnnim Startup & Innovation University

SWARNNIM SCIENCE COLLEGE

Master of Science (M.Sc.) Clinical Research; Teaching syllabus & Examination pattern

| Semester 2 | | | | | | | | | | | | | | | | |
|------------|--------------|--|--------|--------------------------|-----|-----------|-------|-------------|---------|-----|---------|----------|---------|----|---------|-------|
| Sr. No. | Subject Code | Subject Name | Credit | Teaching scheme per week | | | | Examination | | | | | | | | Total |
| | | | | Th | Tut | Practical | Total | Internal | | | | External | | | | |
| | | | | | | | | Th | PASSING | Pr | PASSING | Th | PASSING | Pr | PASSING | |
| 1 | 23000013 | Preparing Wider Horizon for entrepreneurship | 3 | 3 | | | 3 | 30 | 12 | | | 70 | 25 | | | 100 |
| 2 | 256100201 | Modern Pharmaceutical analytical techniques II (Common) | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 3 | 256100202 | Regulatory Affairs (Common) | 4 | 4 | | | 4 | 30 | 12 | | | 70 | 25 | | | 100 |
| 4 | 256100203 | Specialization Subject I (Advanced Pharmacology) | 4 | 4 | | | 4 | 30 | 12 | | | 70 | 25 | | | 100 |
| 5 | 256100204 | Specialization practical (Pharmacology and Clinical Research Practical-I) | 12 | | - | 12 | 12 | - | - | 200 | 80 | - | - | - | - | 200 |
| | | Total | 27 | 15 | - | | 27 | 120 | - | 200 | - | 280 | - | - | - | 600 |





SWARNIM SCIENCE COLLEGE

MSc Clinical Research Programme

Semester 2

Course Title: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES-II

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256100201 | 4 | 40 | 20 % | 10 % | - | 70% | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Explain and demonstrate the principles of Fluorescence spectroscopy and Atomic absorption and emission spectroscopy along with its instrumentation and application

CO2: Describe the theory, principle, instrumentation, and applications of Gas chromatography

CO3: Explain the theory, principle, methodology, pros, cons, and applications of High-performance liquid chromatography

CO4: Understand and get knowledge about the basics of High-performance Thin layer chromatography with its instrumentation and applications.

CO5: Develop theoretical and practical skills for validation and calibration of various analytical instruments

CO6: Outline the HPLC and Bio-analytical method development



2. Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1. | Atomic Absorption And Plasma Emission Spectroscopy: Principle, instrumentation, interferences and applications in Pharmacy Spectrofluorimetry: Theory of Fluorescence, Factors affecting fluorescence, Quenchers, Instrumentation and Applications of fluorescence spectrophotometer | 08 | 20 % |
| 2. | Gas Chromatography: Introduction; Theory and Principle of Gas-Chromatography; Mobile phase, Stationary phases for GSC and GLC; Instrumentation (including temperature programming and derivatization) and applications of GC; Overview of GC-MS. High-Performance Liquid Chromatography: Introduction; Theory, Classification and Principle of HPLC; Mobile phase, Stationary phases for normal and reversed-phase HPLC; Instrumentation (including the significance of guard column) and applications of HPLC; Comparison of HPLC with GC; Overview of LC-MS, LC-MS/MS. | 12 | 25 % |
| 3. | HPTLC Principle; Comparison with HPLC; Instrumentation, applications, advantages, and limitations of HPTLC | 8 | 15 % |
| 4. | Validation and calibration of various instruments used for drug analysis: pH Meter, Conductometer, UV Visible Spectrophotometer, IR Spectrophotometer, HPLC, HPTLC | 4 | 15 % |
| 5. | HPLC Method Development: Basics of separation including Column resolution, Plate number, Plate height, Selectivity factor, Capacity factor, and their optimization. Selection of detector and column Mobile phase optimization including the selection of the correct pH value Bio-analytical HPLC method development and validation: Biological sample preparation: Protein precipitation, liquid-liquid extractions, solid phase extractions, and membrane separations | 8 | 25% |



| 3. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

4. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|--|-------------------|------------------|
| 1. | Dr. B.K Sharma | Instrumental Methods of Chemical Analysis | Krishna Prakashan | 24 th |
| 2. | A.I. Vogel, | Vogel's Textbook of Quantitative Chemical Analysis | Pearson Education | 6 th |
| 3 | D. C. Garrett | Quantitative Analysis of Drugs | Springer US | 3 rd |

5. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|---|-------------------------------|-----------------|
| 1. | P. D. Sethi | Quantitative Analysis of Drugs in Pharmaceutical Formulations | CBS Publishers & Distributors | 3 rd |
| 2. | Robert M Silverstein | Spectrometric Identification of Organic compounds | John Wiley & Sons | 6 th |
| 3. | Willards | Instrumental methods of analysis | CBS publishers | 7 th |
| 4. | Doglas A Skoog, F. James Holler, Timothy A. Nieman | Principles of Instrumental Analysis | Eastern press | 5 th |





SWARNIM SCIENCE COLLEGE

MSc Clinical Research Programme

Semester 2

Course Title: REGULATORY AFFAIRS

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256100202 | 4 | 40 | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1. The Concepts of innovator and generic drugs, drug development process.

CO2. The Regulatory guidance's and guidelines for filing and approval Process

CO3. Preparation of Dossiers and their submission to regulatory agencies in different countries

CO4. Post approval regulatory requirements for actives and drug products

CO5. Submission of global documents in CTD/ eCTD formats

CO6. Clinical trials requirements for approvals for conducting clinical trials, Pharmacovigilance and process of monitoring in clinical trials.



2. Syllabus

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1. | <p>a. Documentation in Pharmaceutical industry: Master formula record, DMF (Drug Master File), distribution records. Generic drugs product development Introduction, Hatch- Waxman act and amendments, CFR (CODE OF FEDERAL REGULATION), drug product performance, invitro, ANDA regulatory approval process, NDA approval process, BE and drug product assessment, in – vivo, scale up process approval changes, post marketing surveillance, outsourcing BA and BE to CRO.</p> <p>b. Regulatory requirement for product approval: API, biologics, novel, therapies obtaining NDA, ANDA for generic drugs ways and means of US registration for foreign drugs</p> | 15 | 37.5% |
| 2 | CMC, post approval regulatory affairs. Regulation for combination Products and medical devices.CTD and ECTD format, industry and FDA liaison. ICH - Guidelines of ICH-Q, S E, M. Regulatory requirements of EU, MHRA, TGA and ROW countries. | 10 | 25% |
| 3 | Non clinical drug development: Global submission of IND, NDA, ANDA. Investigation of medicinal products dossier, dossier (IMPD) and investigator brochure (IB) | 7 | 17.5% |
| 4 | Clinical trials: Developing clinical trial protocols. Institutional review board/ independent ethics committee Formulation and working procedures informed Consent process and procedures. HIPAA- new, requirement to clinical study process, pharmacovigilance safety monitoring in clinical trials. | 8 | 20% |



| 3. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

4. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------------------------|---|--------------------------------|----------------|
| 1. | by Ira R. Berry and Robert P.Martin, | The Pharmaceutical Regulatory Process, Second Edition Edited Drugs and the Pharmaceutical Sciences, | Informa Health care Publishers | Vol.185 |
| 2. | Fay A.Rozovsky and Rodney K. Adams | Clinical Trials and Human Research: A Practical Guide to Regulatory Compliance | - | - |

5. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------------|--|--|-----------------|
| 1. | Richard A Guarino, | New Drug Approval Process: Accelerating Global Registrations | Drugs and the Pharmaceutical Sciences, Vol.190 | 5 th |
| 2. | Leon Shargel and IsaderKaufer | Generic Drug Product Development, Solid Oral Dosage forms | Marcel Dekker series, | Vol.143 |





SWARNIM SCIENCE COLLEGE

MSc Programme

MSc Clinical Research Semester 2

Course Title: Advanced Pharmacology

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| Core | 256100203 | 4 | 40 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of syllabus, students can able to

CO1. Describe the pharmacology of drugs acting on parasympathetic and sympathetic nervous system.

CO2. Illustrate the pharmacological aspects of drugs acting on central nervous system, local anaesthetics, opioid and non-opioid analgesics.

CO3. Classify drugs acting on cardiovascular-haemopoietic system and discuss their pharmacology.

CO4. Understand the basic concepts and pharmacology of diuretics, anti-histamines and drugs used in the treatment of asthma, ulcer, diabetes and hyperthyroidism.

CO5. Explain the basics of chemotherapy along with the detailed study of Antibiotics.

CO6. Summarize the drug classes and their pharmacological role in cancer, tuberculosis, malaria, fungal and viral infections.



2. Syllabus:

| Module | Contents | No of Sessions | Weightage |
|----------|---|----------------|-----------|
| 1 | Pharmacology of drugs acting on Autonomic nervous system a) Parasympathomimetics and lytics b) Sympathomimetics and lytics c) Agents affecting neuromuscular junction | 05 | 12.5 % |
| 2 | Pharmacology of drugs acting on Central nervous system a) General and local anesthetics b) Sedatives and hypnotics c) Anti-depressants d) Anti-psychotic agents e) Antiepileptic agents f) Drugs used for the treatment of neurodegenerative diseases g) Narcotic and non-narcotic analgesics | 09 | 22.5 % |
| 3 | Pharmacology of drugs acting on Cardiovascular system a) Antihypertensives b) Anti-ischemics c) Anti- arrhythmics d) Drugs for heart failure e) Anti-hyperlipidemic f) Anticoagulants g) Fibrinolytics and antiplatelet drugs | 08 | 20 % |
| 4 | Pharmacology of following drugs a) Diuretics b) Anti-asthmatic agents c) Anti-ulcer drugs d) Anti-diabetic drugs e) Anti-thyroid drugs f) Anti-histamines | 07 | 17.5 % |



| | | | |
|----------|---|-----------|--------------|
| 5 | Chemotherapeutic agents a) Anti-bacterial agents: Sulphonamides, Fluoroquinolones, Penicillins, Cephalosporins, Tetracyclines, Chloramphenicol, Aminoglycosides b) Anti-fungal agents c) Anti-viral agents d) Anti-malarial agents e) Anti-tubercle agents f) Anti-cancer agents | 11 | 27.5% |
|----------|---|-----------|--------------|

3. Evaluation

| | | |
|---|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

4. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------------------------|------------------------------------|---|-----------------|
| 1. | Bikash Medhi, Ajay Prakash | Advanced Pharmacology | PharmaMed Press / BSP Books | 2 nd |
| 2. | Padmaja Udaykumar | Pharmacology for Pharmacy students | CBC publishers and Distributors Pvt. Ltd. | 1 st |
| 3. | HL Sharma, KK Sharma | Principles of Pharmacology | Paras Medical Publisher | 3 rd |

5. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--|--|--|------------------|
| 1. | K. D. Tripathi | Essentials of Medical Pharmacology | Jaypee Brothers Medical Publishers Ltd | 7 th |
| 2. | Bjorn Knollmann, Laurence Brunton | Goodman and Gillman's, The Pharmacological Basis of Therapeutics | McGraw-Hill Education | 14 th |
| 3 | Rang HP, Dale MM, Ritter JM, Flower RJ | Rang and Dale's Pharmacology, | Churchil Livingstone Elsevier | 10 th |





SWARNIM SCIENCE COLLEGE

MSc Clinical Research Programme

Semester 2

Course Title: PHARMACOLOGY AND CLINICAL RESEARCH PRACTICAL-I

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256100204 | 4 | 120 | | | | | |
| | | | | - | - | 100% | - | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1: summarize the importance and maintenance of lab animals along with various techniques of drug administration, blood collection, anesthesia- euthanasia and handling of lab animals.

CO2: identify analgesic, skeletal muscle relaxant, anticonvulsant, CNS depressant and CNS stimulant effect of drugs using different instruments and Ex-Pharm software.

CO3: evaluate and compare miotic, mydriatic and local anaesthetic effects of drugs using Ex-Pharm software.

CO4: analyze prescriptions for their format, essentiality and rationality.

CO5: write SOAP (Subjective, Objective, Assessment and Plan) notes for the given clinical cases of selected common diseases.

CO6: counsel the patients about the disease conditions, uses of drugs, methods of handling and administration of drugs, life-style modifications, and monitoring parameters.



2. Syllabus

| No. | Title | Hours /week |
|--------|---|-------------|
| PART-A | | 8 |
| 1 | Introduction to experimental pharmacology and common laboratory animals. | |
| 2 | Maintenance of laboratory animals as per CPCSEA guidelines. | |
| 3 | Techniques of drug administration, blood collection, anesthesia- euthanasia and handling of laboratory animals. | |
| 4 | Evaluation of analgesic drugs using Eddy’s Hot plate method. | |
| 5 | Evaluation of skeletal muscle relaxant activity using rota rod apparatus. | |
| 6 | Evaluation of CNS stimulant and depressant drugs on locomotor activity of rat using photoactometer. | |
| 7 | Evaluation of anticonvulsant effect of drug by MES and PTZ method. | |
| 8 | Effect of drugs on rabbit eye. | |
| PART-B | | |
| 9 | Introduction to format of prescription, essentiality and rationality. | |
| 10 | To audit given prescription for format of prescription, essentiality and rationality. | |
| 11 | To audit given prescription for format of prescription, essentiality and rationality. | |
| 12 | Preparation and discussion of SOAP (Subjective, Objective, Assessment and Plan) notes for clinical cases of CNS disorders. | |
| 13 | Preparation and discussion of SOAP (Subjective, Objective, Assessment and Plan) notes for clinical cases of cardiovascular disorders. | |
| 14 | Preparation and discussion of SOAP (Subjective, Objective, Assessment and Plan) notes for clinical cases of respiratory disorders. | |
| 15 | Case studies related to patient counselling. | |

Note: All laboratory techniques and animal experiments are demonstrated by simulated experiments by softwares and videos.



3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-------------------------------------|---|--------------------------|------------------|
| 1. | Dr. R.K. Goyal | Practicals in Pharmacology | B.S. Shah Prakashan | 11 th |
| 2. | Roger Walker and Cate Whittlesea | Clinical pharmacy and therapeutics | Churchill Livingstone | 5 th |
| 3. | Kulkarni S.K. | Handbook of experimental pharmacology. | Vallabh Prakashan | 3 rd |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--|--|---------------------------------------|-----------------|
| 1. | Bikash Medhi, Ajay Prakash | Practical Manual of Experimental and Clinical Pharmacology | Jaypee Brothers Medical Publishers | 2 nd |
| 2. | Eric T Herfindal, Dick R Gourley, Joseph L Hirschman | Textbook of therapeutics, Drug and disease management. | Lippincott Williams and Wilkins | 6 th |
| 3. | M. N. Ghosh | Fundamentals of Experimental Pharmacology. | Hilton & Company Kolkata. | 6 th |



Swarnim Startup & Innovation University

SWARRNIM SCIENCE COLLEGE

Master of Science (M.Sc.) Clinical Research; Teaching syllabus & examination pattern

Semester 1

| Sr. No. | Subject Code | Subject Name | Credit | Teaching scheme per week | | | | Examination | | | | | | | | Total |
|---------|--------------|--|--------|--------------------------|-----|-----------|-------|-------------|---------|-----|---------|----------|---------|----|---------|-------|
| | | | | Th | Tut | Practical | Total | Internal | | | | External | | | | |
| | | | | | | | | Th | PASSING | Pr | PASSING | Th | PASSING | Pr | PASSING | |
| 1 | 256100101 | Modern Pharmaceutical analytical techniques I | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 2 | 256100102 | Pharmaceutical Dosage forms | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 3 | 256100103 | Fundamentals of pharmacology and clinical research | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 4 | 256100104 | Concepts of natural products | 4 | 4 | | | 4 | 30 | 12 | | | 70 | 25 | | | 100 |
| 5 | 256100105 | Common Practicals I | 8 | - | - | 12 | 12 | | | 100 | 40 | - | - | - | - | 100 |
| 6 | | Total | 24 | 16 | - | 12 | 28 | 120 | - | 100 | - | 280 | - | - | - | 500 |





SWARNIM SCIENCE COLLEGE

MSc Clinical Research Programme

Semester 1

Course Title: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES-I

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| Core | 256100101 | 4 | 40 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Explain and demonstrate the principles of UV-visible spectroscopy along with its instrumentation and application

CO2: Describe the theory, principle, instrumentation, and applications of IR spectroscopy

CO3: Explain the theory, application, and instrumentation including ionization techniques, analysers, and detectors. Also understand the different ions, fragmentation rules, and rearrangements.

CO4: Understand and get knowledge about the basics of NMR and the different terms involved in it with an overview of C13NMR.

CO5: Discuss and classify Chromatography and its techniques and explain the theory, principle, methodology, pros, cons, and applications of Adsorption and partition, column, TLC and paper chromatography, ion exchange, affinity, gel chromatography

CO6: Outline the theory, instrumentation, and parameters of Gas chromatography as well as HPLC along with its advantages, disadvantages, and applications.



Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1. | UV-Visible Spectroscopy: Brief review of electromagnetic spectrum and absorption of radiations. The chromophore concept, absorption law, and limitations. Theory of electronic spectroscopy, absorption by organic molecules, choice of solvent, and solvent effects. Applications of UV-visible spectroscopy, multi-component assay, difference spectra and derivative spectra | 08 | 20 % |
| 2. | IR Spectroscopy: Theory of absorption of Infrared radiation by molecules; Molecular vibrations; Factors influencing vibrational frequencies; Calculation of vibrational frequencies (Hooke's law); Sample handling techniques; Instrumentation (Dispersion and FTIR spectrometer) and applications of IR Spectroscopy; Calibration of IR Spectrophotometer as per Pharmacopoeia | 08 | 20 % |
| 3. | Mass Spectrometry: Theory; Ionization techniques, Ion separating techniques; Different types of ions and their significance in mass spectra, Fragmentation rules and rearrangements; Instrumentation and applications of mass spectrometry | 08 | 15 % |
| 4. | Nuclear Magnetic Resonance spectroscopy: Fundamental Principles - nuclear spin, magnetic moment; Proton NMR spectroscopy - theory, chemical shift and factors affecting chemical shift, spin-spin coupling, coupling constant, relaxation process, Instrumentation and applications of PMR; Brief overview of C13 NMR | 08 | 20 % |
| 5. | Chromatography: Principle, apparatus, instrumentation, chromatographic parameters, factors affecting resolution and applications of the following: a) Paper chromatography b) Thin Layer chromatography c) Ion exchange chromatography d) Column chromatography e) Gas chromatography f) High Performance Liquid chromatography g) Affinity chromatography | 06 | 25% |



| 2. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|--|-------------------|------------------|
| 1. | Dr. B.K Sharma | Instrumental Methods of Chemical Analysis | Krishna Prakashan | 24 th |
| 2. | A.I. Vogel, | Vogel's Textbook of Quantitative Chemical Analysis | Pearson Education | 6 th |
| 3 | D. C. Garrett | Quantitative Analysis of Drugs | Springer US | 3 rd |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|---|-------------------------------|-----------------|
| 1. | P. D. Sethi | Quantitative Analysis of Drugs in Pharmaceutical Formulations | CBS Publishers & Distributors | 3 rd |
| 2. | Robert M Silverstein | Spectrometric Identification of Organic compounds - | John Wiley & Sons | 6th |
| 3. | Willards | Instrumental methods of analysis | CBS publishers | 7th |
| 4. | Doglas A Skoog, F. James Holler, Timothy A. Nieman | Principles of Instrumental Analysis - | Eastern press | 5th |





SWARRNIM SCIENCE COLLEGE

MSc Clinical Research Programme

Semester 1

Course Title: PHARMACEUTICAL DOSAGE FORMS

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| Core | 256100102 | 4 | 40 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course the student should be able to:

CO1: Outline basics of different dosage forms like tablet capsules, aerosol and parenteral.

CO2: Design and develop various conventional dosage forms.

CO3: Discuss the basic requirement of cGMP and industrial management.

CO4: Categories the biopharmaceutical consideration for product development

CO5: Prioritise the factor affecting drug product performance.

CO6: Illustrate the requirement of scale up and post approval changes.



Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1. | Tablets: a. Introduction, ideal characteristics of tablets, classification of tablets. Excipients, Formulation of tablets, granulation methods, compression and processing problems. Equipment and tablet tooling. Capsules: a. Hard gelatin capsules: Introduction, Production of hard gelatin capsule shells. Size of capsules, Filling, finishing and special techniques of formulation of hard gelatin capsules, manufacturing defects. b. Soft gelatin capsules: Nature of shell and capsule content, size of capsules, importance of base adsorption and minim/gram factors, production, in process and final product quality control tests. Packing, storage and stability testing of soft gelatin capsules | 08 | 20 % |
| 2. | Parenteral Products: a. Definition, types, advantages and limitations. Preformulation factors and essential requirements, vehicles, additives, b. Production procedure, production facilities and controls, aseptic processing c. Formulation of injection. d. Containers and closures selection, filling and sealing of ampoules, vials and infusion fluids. Pharmaceutical Aerosols: Definition, propellants, containers, valves, types of aerosol systems; formulation and manufacture of aerosols; Evaluation of aerosols; Quality control and stability studies | 08 | 20 % |
| 3. | Biopharmaceutic considerations in drug product design and In Vitro Drug Product Performance: Introduction, biopharmaceutic factors affecting drug bioavailability, rate-limiting steps in drug absorption, physicochemical nature of the drug formulation factors affecting drug product performance, in vitro: dissolution and drug release testing, compendial methods of dissolution, alternative methods of dissolution testing, meeting dissolution requirements, problems of variable control in dissolution testing performance of drug products. In vitro–in vivo correlation, dissolution profile comparisons, drug product stability, considerations in the design of a drug product. | 08 | 20 % |
| 4. | Drug Product Performance, In Vivo: Bioavailability and Bioequivalence: drug product performance, purpose of bioavailability studies, relative and absolute availability. methods for assessing bioavailability, bioequivalence studies, design and evaluation of bioequivalence studies, | 08 | 20 % |



| | | | |
|----|--|----|-----|
| | study designs, crossover study designs, evaluation of the data, bioequivalence example, study submission and drug review process. biopharmaceutics classification system, methods. Permeability: In-vitro, in-situ and In-vivo methods. generic biologics (biosimilar drug products), clinical significance of bioequivalence studies, special concerns in bioavailability and bioequivalence studies, generic substitution | | |
| 5. | cGMP & Industrial Management: Objectives and policies of current good manufacturing practices, layout of buildings, services, equipment and their maintenance Production management: Production organization, materials management, handling and transportation, inventory management and control, production and planning control, Sales forecasting, budget and cost control, industrial and personal relationship. | 06 | 15% |
| 6. | Pilot plant scale up techniques: General considerations – including significance of personnel requirements, space requirements, raw materials, Pilot plant scale up considerations for solids, liquid orals, semi solids and relevant documentation, SUPAC guidelines, Introduction to platform technology | 04 | 5% |

2. Evaluation

| | | |
|---|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|------------------------|--|-------------------------------|-----------------|
| 1. | Lachmann and Libermann | Theory and Practice of Industrial Pharmacy | Publisher Lea & Febiger, U.S. | 3rd |
| 2. | Sidney H. Willig. | Good manufacturing practices for Pharmaceuticals: A plan for total quality control | Marcel Dekker Inc | 2 nd |



| | | | | |
|---|-------------------------|----------------------|-----------|-----------------|
| 3 | Gillbert and S. Banker. | Modern Pharmaceutics | CRC press | 4 th |
|---|-------------------------|----------------------|-----------|-----------------|

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------|-------------------------------------|-----------------------------|-----------------|
| 1. | P.P. Sharma. | How to practice GMPs | Vandhana Publications, Agra | 5 th |
| 2. | Rawlins. | Bentley's Textbook of Pharmaceutics | Elsevier | Old |





SWARNIM SCIENCE COLLEGE

MSc Clinical Research Programme

Semester 1

Course Title: FUNDAMENTALS OF PHARMACOLOGY AND CLINICAL RESEARCH

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256100103 | 4 | 40 | 20 % | 10 % | - | 70 % | - |

5. Course Outcomes

Upon completion of syllabus, students can able to

CO1. Identify various routes of administration of drugs and their pharmacokinetic processes.

CO2. Understand the concepts of drug action and mechanisms involved along with basics of cell biology and secondary messengers.

CO3. Summarize the basic principles of transmission including transmission of neurotransmitters of autonomic and central nervous system.

CO4. Describe the principles and applications of various techniques used in basic research.

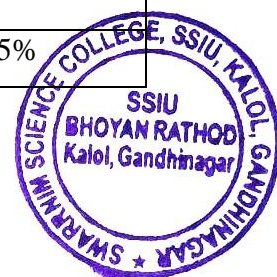
CO5. Demonstrate about the laboratory animals, their maintenance as per the guidelines, basic knowledge of preclinical and toxicological evaluation processes.

CO6. Illustrate the basic fundamentals of clinical research.



6. Syllabus:

| Module | Contents | No of Sessions | Weightage |
|----------|--|----------------|-----------|
| 1 | General Pharmacology Routes of Drug Administration Pharmacokinetics: The dynamics of drug absorption, distribution, biotransformation and elimination. Significance of protein binding. | 05 | 12.5 % |
| 2 | Cell biology and cell signalling: Structure and functions of cell and its organelles, Transport across the cell membrane. Classification of receptor family and molecular structure ligand gated ion channels; G-protein coupled receptors, tyrosine kinase receptors and nuclear receptors. Secondary messengers: cyclic AMP, cyclic GMP, calcium ion, inositol 1, 4, 5-trisphosphate, (IP3), NO, and diacylglycerol. | 06 | 15 % |
| 3 | Neurotransmission a. General aspects and steps involved in neurotransmission. b. Neurohumoral transmission in autonomic nervous system c. Neurohumoral transmission in central nervous system | 05 | 12.5 % |
| 4 | Principles and applications of following tools DNA electrophoresis, Polymerase chain reaction, SDS page, ELISA, Western blotting technique, Recombinant DNA technology and gene therapy. | 08 | 20 % |
| 5 | Preclinical and toxicological screening Common laboratory animals, Transgenic animals, CPCSEA guidelines to conduct experiments on animals. Anaesthesia and euthanasia of experimental animals. General principles of preclinical screening. Basic definition and types of toxicology. ICH guidelines for conducting toxicity studies. Oral and dermal toxicity studies as per OECD guidelines. General principles of treatment of poisoning. | 10 | 25% |
| 6 | Basics of clinical research | 06 | 15% |



| | | | |
|--|---|--|--|
| | a. Introduction to Clinical research. b. Adverse drug reactions: Definition, Terminologies and types of ADR. Causality assessment, Severity and seriousness assessment. c. Drug interactions (Pharmacokinetic and Pharmacodynamic interactions) d. Phases of clinical trials e. Origin and Principles of ICH-GCP (Good Clinical Practice) guidelines f. Institutional Review Board | | |
|--|---|--|--|

7. Evaluation

| | | |
|---|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

8. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---------------------------------|------------------------------------|--|-----------------|
| 1. | K. D. Tripathi | Essentials of Medical Pharmacology | Jaypee Brothers Medical Publishers Ltd | 7 th |
| 2. | Julia Lloyd and Ann Raven | Handbook of clinical Research | Churchill Livingstone | 2 nd |
| 3. | Karen E. Stine, Thomas M. Brown | Principles of toxicology | CRC Press | 3 rd |

9. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---------------------------------------|--|-----------------------|------------------|
| 1. | Bjorn Knollmann, Laurence Brunton | Goodman and Gillman's, The Pharmacological Basis of Therapeutics | McGraw-Hill Education | 14 th |
| 2. | David Machin, Simon Day, Sylvan Green | Textbook of Clinical Trials | John Wiley and Sons | 2 nd |





SWARNIM SCIENCE COLLEGE

MSc Clinical Research Programme

Semester 1

Course Title: CONCEPTS OF NATURAL PRODUCTS

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256100104 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70 % | - |

10. Course Outcomes

Upon completion of this course the student should be able to:

CO1: Explain medicinal importance of natural drugs

CO2: Illustrate the importance of quality control of drugs of natural origin.

CO3: Describe importance of primary and secondary metabolites of medicinal plants.

CO4: Discuss the principles of alternative system of medicines.

CO5: Demonstrate various extraction and estimation techniques of Phytoconstituents.

CO6: Brief outline the uses of herbs in nutraceuticals and cosmeceuticals.



Syllabus

| Module | Contents | No of Sessions | Weightage | | | | | | | | | | | | | | | | | | |
|--------------------------------|---|----------------|-----------|--------------------------|-------------------------------|-------------------|--|--------------------------------|---|-------------------|-----------|-------------|---------------------------|---------------|----------------------|-------------------------------|-----------------------|---------------|---------------------|----|------|
| 1. | Definition, history, present status, and scope of Pharmacognosy Classification of Natural drugs: <ul style="list-style-type: none">● Alphabetical● Taxonomical● Morphological● Pharmacological● Chemical● Chemo-taxonomical Adulteration of drugs of natural origin. WHO guidelines in quality assessment of herbal drugs. | 07 | 15 % | | | | | | | | | | | | | | | | | | |
| 2. | Introduction to primary and secondary metabolites: Definition, classification, properties and test for identification of Carbohydrates, Proteins, Lipids, Alkaloids, Glycosides, Flavonoids, Tannins, Volatile oil and Resins Basic principles involved in the traditional systems of medicine like: Ayurveda, Siddha, Unani and Homeopathy | 10 | 20 % | | | | | | | | | | | | | | | | | | |
| 3. | Biological source, chemical constituents, and therapeutic efficacy of the following categories of crude drugs. <table><tr><td>Cardiotonic</td><td>Digitalis</td></tr><tr><td>Drugs acting on GI tract</td><td>Fennel, Ginger, Black Pepper,</td></tr><tr><td>Asafoetida, Senna</td><td></td></tr><tr><td>Drugs acting on nervous system</td><td>Datura, Opium, Tea leaves, Coffee seeds</td></tr><tr><td>Anti-hypertensive</td><td>Rauwolfia</td></tr><tr><td>Anti-Cancer</td><td>Vinca, Podophyllum, Taxus</td></tr><tr><td>Antidiabetics</td><td>Pterocarpus, Gymnema</td></tr><tr><td>Antiseptics and disinfectants</td><td>Neem, Turmeric, Tulsi</td></tr><tr><td>Antimalarials</td><td>Cinchona, Artemisia</td></tr></table> | Cardiotonic | Digitalis | Drugs acting on GI tract | Fennel, Ginger, Black Pepper, | Asafoetida, Senna | | Drugs acting on nervous system | Datura, Opium, Tea leaves, Coffee seeds | Anti-hypertensive | Rauwolfia | Anti-Cancer | Vinca, Podophyllum, Taxus | Antidiabetics | Pterocarpus, Gymnema | Antiseptics and disinfectants | Neem, Turmeric, Tulsi | Antimalarials | Cinchona, Artemisia | 08 | 20 % |
| Cardiotonic | Digitalis | | | | | | | | | | | | | | | | | | | | |
| Drugs acting on GI tract | Fennel, Ginger, Black Pepper, | | | | | | | | | | | | | | | | | | | | |
| Asafoetida, Senna | | | | | | | | | | | | | | | | | | | | | |
| Drugs acting on nervous system | Datura, Opium, Tea leaves, Coffee seeds | | | | | | | | | | | | | | | | | | | | |
| Anti-hypertensive | Rauwolfia | | | | | | | | | | | | | | | | | | | | |
| Anti-Cancer | Vinca, Podophyllum, Taxus | | | | | | | | | | | | | | | | | | | | |
| Antidiabetics | Pterocarpus, Gymnema | | | | | | | | | | | | | | | | | | | | |
| Antiseptics and disinfectants | Neem, Turmeric, Tulsi | | | | | | | | | | | | | | | | | | | | |
| Antimalarials | Cinchona, Artemisia | | | | | | | | | | | | | | | | | | | | |



| | | | |
|-----------|---|-----------|------|
| 4. | Basics of Phytochemistry Modern methods of extraction, application of latest techniques like Spectroscopy, chromatography and electrophoresis in the isolation, purification and identification of natural drugs. | 08 | 20 % |
| 5. | Nutraceuticals: Brief introduction, Regulatory aspects, FSSAI guidelines and therapeutic applications of Nutraceuticals. Different herbs used as a health food. Herbal cosmetics: Sources and description of raw materials of herbal origin used via, fixed oils, waxes, gums colours, perfumes, protective agents, bleaching agents, antioxidants in products such as skin care, hair care and oral hygiene products. | 07 | 25% |

| 11. Evaluation | | |
|-----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

12. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------------------|---|--|------------------|
| 1. | C.K. Kokate, Purohit, Gokhlae. | Text book of Pharmacognosy, Gokhlae (2007), | Nirali Prakashan, Pune, 2007 | 37 th |
| 2. | V.D. Rangari | Textbook of Pharmacognosy & Phytochemistry; Vol 1 | Career publication | - |
| 3 | H.Pande | Herbal Cosmetics | Asia Pacific Business press, Inc, New Delhi. | - |



| | | | | |
|----|--------------|---------------|---|------|
| 4. | Mohammad Ali | Pharmacognosy | CBS Publishers & Distributors, New Delhi 2008 | 2008 |
|----|--------------|---------------|---|------|

13. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-------------------------------|--|--|------------------|
| 1. | W. C. Evans, Trease and Evans | Pharmacognosy | W.B. Sounders & Co., London, 2009 | 16 th |
| 2. | WHO | WHO: Quality Control Methods for Medicinal Plant Materials | WHO, Geneva | 1988 |
| 3. | Mukherjee P.W. | Quality Control of Herbal Drugs: An Approach to Evaluation of Botanicals | Business Horizons Publishers, New Delhi, India | 2002 |
| 4. | Agrawal S.S. | Herbal Drug Technology | Orient Blackswan, New Delhi, 2012 | 2 nd |





SWARNIM SCIENCE COLLEGE

MSc Clinical Research Programme

Semester 1

Course Title: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES-I PRACTICAL

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| Core | 256100105 | 4 | 120 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | | - | - | 50% | - | 50% |

Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Develop skills in the Analysis of Pharmacopoeial Compounds and Formulations by different spectroscopy.

CO2: Describe and perform different practical methods for performing and separating of mixtures by paper and thin layer chromatography.

CO3: Develop the ability to document experimental procedures, record observations, and effectively communicate results. Emphasize the importance of maintaining accurate and organized experimental records.

CO4: Understand and apply the fundamental principles of HPLC, including the role of the stationary phase, mobile phase, and detector in achieving high-resolution separations.

CO5: Apply knowledge and hands-on skills on Gas Chromatography Instrumentation Proficiency



| No. | Title | Hours/ week |
|-----|--|----------------|
| 1 | Analysis of pharmacopoeial compounds and their formulations by UV Vis spectrophotometer (Any TWO) | 8 |
| 2 | Simultaneous estimation of multi component containing formulations by UV spectrophotometry (Any TWO) | |
| 3 | Assay of raw materials as per official monographs (Any TWO) | |
| 4 | Determination of absorption maxima and effect of solvents on absorption maxima of organic compounds | |
| 5 | To determine isobestic point of indicator by UV Spectrophotometry | |
| 6 | To determine dissociation constant of indicators by UV spectrophotometry | |
| 7 | Estimation of Sulfanilamide by colorimetry | |
| 8 | Estimation of non coloured drugs by derivatization | |
| 9 | Determination of vitamin C | |
| 10 | Estimation of quinine sulfate by fluorimetry | |
| 11 | Study of quenching of fluorescence | |
| 12 | Separation of amino acids by paper chromatography | |
| 13 | Separation of sugars by thin layer chromatography | |
| 14 | Separation of plant pigments by column chromatography | |
| 15 | Demonstration experiment on HPLC and Gas Chromatography | |

1. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---------------------------------|--|----------------|-----------------|
| 1. | Beckett and Stenlake | Practical Pharmaceutical Chemistry – Vol II | CBS Publishers | 4 th |
| 2. | P. D. Sethi, Dilip Charegaonkar | Identification of Drugs and Pharmaceutical Formulations by Thin Layer Chromatography | CBS Publishers | 2 nd |

2. Reference Books:



| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---|---|-------------------------------|-----------------|
| 1. | P. D. Sethi | Quantitative Analysis of Drugs in Pharmaceutical Formulations | CBS Publishers & Distributors | 3 rd |
| 2. | Doglas A Skoog, F. James Holler, Timothy A. Nieman | Principles of Instrumental Analysis | Eastern press | 5 th |
| 3. | F. D. Snell and C. T. Snell | Colorimetric Methods of analysis (Van Nostrand Reinhold Company, N.Y.). | John Wiley and Sons | 3 rd |
| 4. | A.C.Moffat, M. David Osselton, Brain Widdop, L. Y. Galichet | Clarke's Analysis of Drugs and Poisons | Pharmaceutical Press | 3 rd |
| 5. | K. A. Connors | Text book of Pharmaceutical Analysis | John Wiley & Sons | 3 rd |



SWARNIM STARTUP & INNOVATION UNIVERSITY (SSIU)

SCHOOL OF SCIENCE

DEPARTMENT OF ENVIRONMENTAL SCIENCE

M.Sc. SEMESTER – III

ENVIRONMENTAL BIOTECHNOLOGY

CODE : 256060301

| Teaching Scheme | | | | Credits | Evaluation Scheme | | | | |
|-----------------|----|---|-------|---------|-------------------|----|----------|----|-------|
| Th | Tu | P | Total | | Internal | | External | | Total |
| | | | | | Th | Pr | Th | Pr | |
| 4 | - | 0 | 4 | 4 | 30 | 50 | 70 | - | 150 |

UNIT-1 General Aspects and Case Studies

Cleaner Bioprocesses and Sustainable Development, Environmental Impact of Nitrogen Fertilizers, Impermeable Barrier Liners in Containment Type Landfills, Control of Submicron Air Toxin Particles after Coal Combustion Utilizing Calcium Magnesium Acetate.

UNIT-2 Recycling and Treatment of Organic Wastes

Duckweed-Based Wastewater Treatment for Rational Resource Recovery and Reuse, Anaerobic Treatment of Tequila Vinasse, Immobilization of Living Microalgae and their Use for Inorganic Nitrogen and Phosphorus Removal from Water, Engineered Reed Bed Systems for the Treatment of Dirty Waters.

UNIT-3 Removal of Recalcitrant Compounds

Immobilization of Non-viable Cyanobacteria and their use for Heavy Metal Adsorption from Water, Bioremediation: Clean-up Biotechnologies for Soils and Aquifers, Increasing Bioavailability of Recalcitrant Molecules in Contaminated Soils, Bioremediation of Contaminated Soils, Environmental Oil Biocatalysis.

UNIT-4 Cleaner Bioprocesses

Clean Biological Bleaching Processes in the Pulp and Paper Industry, Clean Technologies through Microbial Processes for Economic Benefits and Sustainability, Cleaner Biotechnologies and the Oil Agroindustry, Cleaner Production Activities.

Course outcome: This paper teaches about replacing chemical materials and processes with biological technologies can reduce environmental damage.

REFERENCES

- 1) Eugenia J. Olguin, Gloria Sanchez, and Elizabeth Hernandez, “*Environmental Biotechnology and Cleaner Bioprocesses*”, Taylor & Francis Publishing House, London, 2000.
- 2) Anderson, J.M., and Ingram, J.S.I., “*Tropical Soil Biology and Fertility, A Handbook of Methods*”, 2nd Edn., Oxford CAB International, 1993.
- 3) Arceivala, S.J., “*Wastewater Treatment for Pollution Control*”, Tata McGraw-Hill, New Delhi, India, 1986.
- 4) Ehrlich, H.L., and Brierley, C.L., “*Microbial Mineral Recovery*”, McGraw-Hill, New York, 1990.
- 5) Alezander, M., “*Biodegradation and Bioremediation*”, Academic Press Inc., San Diego, California, 1994.
- 6) Wise, L.D., “*Global Environmental Biotechnology*”, Elsevier, Amsterdam, 1997. 7) R.M. Atlas, “*Microbiology: Fundamental and Applications*”, 2nd Edition, Macmillan, New York, 1988.

M.Sc. SEMESTER – III

ENVIRONMENTAL TOXICOLOGY AND ITS IMPACT CODE : 256060302

| Teaching Scheme | | | | Credits | Evaluation Scheme | | | | |
|-----------------|----|---|-------|---------|-------------------|----|----------|----|-------|
| Th | Tu | P | Total | | Internal | | External | | Total |
| | | | | | Th | Pr | Th | Pr | |
| 4 | - | - | 4 | 4 | 30 | 50 | 70 | - | 150 |

UNIT-1 Toxicology Chemistry

Introduction to Toxicology and Toxicological Chemistry, Dose – Response Relationships, Relative Toxicities, Reversibility and Sensitivity, Xenobiotic and Endogenous Substances, Kinetic Phase and Dynamic Phase, Teratogenesis, Mutagenesis, Carcinogenesis, and Effects on the Immune and Reproductive Systems, Health Hazards.

UNIT-2 Toxicology of Chemical Substances

Introduction, Toxic elements and elemental forms, Ozone, White Phosphorus, Elemental Halogens, Heavy metals, Cadmium, Lead, Arsenic, Toxic Inorganic Compounds, Cyanide, Carbon Monoxide, Nitrogen Oxides, Hydrogen Halides, Hydrogen Fluorides, Hydrogen Chlorides, Interhalogen Compounds and Halogen Oxides, Inorganic Compounds of Silicon, Asbestos, Inorganic Phosphorus Compounds, Phosphine, Tetraphosphorus decoxide, Inorganic Compounds of Sulphur, Organometallic Compounds, Organolead Compounds, Organotin Compounds, Carbonyls, Toxicology of Organic Compounds.

UNIT-3 Heavy Metals in Environment

Arsenic: Biochemical Effects of Arsenic, Transformation.

Cadmium: Emissions to the Environment, Toxicity, Emission Control and
Other Measures, Biochemical Effects of Cadmium.

Lead: Emissions, Toxicity, Transformation, Biochemical Effects of Lead. Mercury:
Biochemical Effects of Mercury, Toxic Effect, Biological Methylation, Remedial Measures.

Chromium: Sources, Toxicity.

UNIT-4 Environmental Impact of Pesticides

Introduction, Historical Aspects, Classification, Application Potential, Limitation of Pesticides
Uses, Toxicology of Major Pesticides, Pesticide Persistence, Bioaccumulation and
Biomagnification.

Course outcome: Students get enlighten about environmental toxicology, its mechanism in body
as well as its impacts in environment.

REFERENCES

- 1) Stanley, E. Manahan, “*Environmental Chemistry*”, 7th Edn, Lewis Publishers, New York, 2000.
- 2) S.C. Santra, “*Environmental Science*”, New Central Book Agency (P) Ltd., 2006. 3) Cockerham, Lerris, G., and Barbara, S. Shane, “*Basic Environmental Toxicology*”, CRC Press/Lewis Publishers, Boca Raton, FL, 1994.
- 4) Bridggs, Shirley, and The Rachel Carson Council, “*Basic Guide to Pesticides : Their Characteristics & Hazards*”, Taylor & Francis, Washington, 1992.
- 5) S.A. Abbasi, N. Abbasi, R. Soni, “*Heavy Metals in The Environment*”, Mittal Publications, New Delhi, India, 1997.
- 6) A Wallace Hayes, “*Principles and Method of Toxicology*”, Published by Raven Press, New York.
- 7) Perry G., “*Introduction of Environmental Toxicology*”, Elsevier, Netherland, 1980.

M.Sc. SEMESTER – III

**ENVIRONMENTAL RULES AND REGULATIONS
CODE : 256060303**

| Teaching Scheme | | | | Credits | Evaluation Scheme | | | | |
|-----------------|----|---|-------|---------|-------------------|----|----------|----|-------|
| Th | Tu | P | Total | | Internal | | External | | Total |
| | | | | | Th | Pr | Th | Pr | |
| 4 | - | - | 4 | 4 | 30 | 50 | 70 | - | 150 |

UNIT-1 Environmental Laws and Acts

Introduction, Environmental Legislation : Status in India, Some Indian Environmental Laws (i) The Water (Prevention and Control of Pollution) Act, 1974, (ii) The Air (Prevention and Control of Pollution) Act, 1981, (iii) The Environment (Protection) Act, 1986, (iv) The Biological Diversity Act, 2002, Environmental Legislation in USA, Introduction and Schedule of the factories Act, 1948, Protection of Specified Plants in the Wildlife Act, Sanctuaries, National Parks and Closed Areas, Sanctuaries or National Parks Declared by Central Government.

UNIT-2 National Conservation Strategy and Policy Statement on Environment and Development

Environmental Problems: Nature and Dimensions, Actions Taken, Legal, Institutions, Prevention and Control of Pollution, Conservation of Forests and Wildlife, Land and Soil, Environmental Impact Assessment, Other Activities, Constraints and Agenda for Action, Priorities and Strategies for Action, Development Policies from Environmental Perspectives, Energy Generation and Use, Industrial Development, Mining and Quarrying, Tourism, Transportation, Human Settlements, International Cooperation, Support Policies and Systems.

UNIT-3 Policy Statement for Abatement of Pollution

Future Directions and Objectives, Critically Polluted Areas, Assistance for Adoption of Clean Technologies by Small-Scale Industries, Standards, Fiscal Measures, Integration, Environmental Audit, Environmental Statistics, Public Partnership.

UNIT-4 The National Environment Tribunal Bill, 1992

Introduction, Preliminary, Compensation for Death of, or Injury to a Person and Damage to Property and Environment, Establishment of National Environment Tribunal and Benches thereof, Jurisdiction and Proceedings of the Tribunal, Miscellaneous.

Course outcome: The purpose of this paper is to teach students environmental laws and its regulations which protects the environment and create rules for people about the appropriate utility of natural resources due to degradation of environment.

REFERENCES

- 1) S.C. Santra, “*Environmental Science*”, New Central Book Agency (P) Ltd, India, 2006.
- 2) Hunter, Malcolm L. Jr., “*Wildlife, Forests and Forestry: Principles of Managing Forests for Biodiversity*”, Englewood Cliffs N.J., Prentice Hall, 1990.
- 3) S.K. Mohanty, “*Environment and Pollution Laws*”, Universal Law Publishing Co.Pvt. Ltd., New Delhi, 2008.
- 4) P.W. Birnie and A.E. Boyle, “*International Law and The Environment*”, 2nd Edition, Oxford University Press, 2004.
- 5) Cassese, “*International Law in a Divided World*”, Oxford, 1986.
- 6) Caldwell, “*International Environmental Policy and Law*”, 1st Edition, Durham, NC, 1980.
- 7) H.M. Tiwari, “*Environmental Law*”, 2008.

M.Sc. SEMESTER – III
ENVIRONMENTAL IMPACT ASSESSMENT
CODE : 256060304

| Teaching Scheme | | | | Credits | Evaluation Scheme | | | | |
|-----------------|----|---|-------|---------|-------------------|----|----------|----|-------|
| Th | Tu | P | Total | | Internal | | External | | Total |
| | | | | | Th | Pr | Th | Pr | |
| 4 | - | - | 4 | 4 | 30 | 50 | 70 | - | 150 |

UNIT-1 Fundamental Approach and Methodology of EIA

Basic Concept, EIA as Planning Tool for Major Project Activities, Comparative Evaluation from EIA Studies, Criteria for Selection of EIA Methodology, EIA Method, Predictive Models for Impact Assessment.

UNIT-2 Prediction and Assessment of Impacts

Prediction and Assessment of Impacts: Noise, Transport, Landscape, Archaeological and other materials as well as Cultural Assets, Air Quality and Climate, Soil, geology and geomorphology, Water, Ecology, Freshwater Ecology, Coastal Ecology, Noise Environment, Socio-Economic and Human Health.

UNIT-3 Environmental Risk Assessment (ERA) and Risk Management in EIA

Introduction, Definition and Concept, Legislative and policy background, Key-steps in Performing an ERA, Different levels of risk analysis, Parallels between ERA and EIA, Opportunities and Challenges in ERA .

UNIT-4 Environmental Remote Sensing (RS), Geographical Information System (GIS) and EIA

Introduction, Definition and concepts, Sources of remote sensing information, software, data, Application of Remote Sensing with particular reference to EIA, GIS and Environment impact assessment, GIS in screening, scoping, baseline studies, impact prediction, mitigation, and monitoring, EIA Case Studies.

Course Outline: By studying this paper, students learn how to identify, predict and evaluate the economic, environmental and social impact of development activities.

REFERENCES

- 1) P. Morris, and R. Therivel, ***“Methods of Environmental Impact Assessment”***, 2nd Edition, Spon Press, Newyork, 2001.
- 2) Y. Anjaneyulu and V. Manickam, ***“Environmental Impact Assessment”***, 2nd Edition, B.S. Publication, Hyderabad, 2007.
- 3) S.C. Santra, ***“Environmental Science”***, 2nd Edition, New Central Book Agency (P) Ltd, Kolkata, India, 2005.
- 4) P. Calow, ***“Handbook of Environmental Risk Management”***, Blackwell Publishing Ltd., Australia, 1998.
- 5) J. Glasson, R. Therivel and A. Chadwick, ***“Introduction to Environmental Impact Assessment”***, 3rd Edition , Routledge, Newyork, 2009.
- 6) H. Abaza, R. Bisset, B. Sadler, ***“Environmental Impact Assessment and Strategic Environmental Assessment: Towards an Integrated Approach”***, 1st Edition, 2004. 7) P. Wathern, ***“Environmental Impact Assessment: Theory and Practice”***, Routledge, London and Newyork, 1998.

M.Sc. SEMESTER – III

ENV PRACTICAL

CODE : 256060305

INSTRUMENTATION

1. Spectroscopy: Atomic absorption, Infrared, ICPMS.
2. Microscopy: Scanning and Transmission Electron Microscopy.
3. Basics of NMR instrumentations.
4. Screening: GC, HPLC.
5. Thermal analysis: Thermo gravimetric Analysis, Differential Scanning Calorimetry, Differential Thermal Analysis.

SWARNIM STARTUP & INNOVATION
UNIVERSITY (SSIU) SCHOOL OF SCIENCE
DEPARTMENT OF ENVIRONMENTAL SCIENCE

M.Sc. SEMESTER – IV

REMOTE SENSING AND GEOGRAPHICAL INFORMATION
CODE : 256060401

| Teaching Scheme | | | | Credits | Evaluation Scheme | | | | |
|-----------------|----|---|-------|---------|-------------------|----|----------|----|-------|
| Th | Tu | P | Total | | Internal | | External | | Total |
| | | | | | Th | Pr | Th | Pr | |
| 4 | - | - | 4 | 4 | 30 | 50 | 70 | - | 150 |

Unit - 1

Definition, Introduction and scope of remote sensing. Electromagnetic radiation, atmosphere window, Platforms, Sensors and type of scanning systems. Basic characteristics of sensors; salient features of sensors used in LANDSAT, SPOT and Indian remote sensing satellites.

Unit - 2

Aerial photography- vantage point, cameras, Filters and types of films. Elements of visual image interpretation. Multispectral Remote sensing, Microwave Remote sensing, Photogrammetry - Introduction, Stereo- scopic vision, Projection types.

Unit - 3

Digital image and image structure, Image restoration and image and image enhancement. Image classification. Remote sensing application in Forestry, Ecology and environment, Landuse, Agriculture, soils and geology, Disaster management.

Unit- 4

GIS technology and its uses in environmental science, Hardware and software requirement for GIS. Conceptual model of spatial information, Conceptual model of non-spatial information. GPS.

Course outcome: This paper teaches about replacing chemical materials and processes with biological technologies can reduce environmental damage.

References :

1. Introduction to Environmental remote sensing - Curtis
2. Principles of Remote sensing - Lily and kliffer.
3. Remote sensing of the Environment – Jenson

M.Sc. SEMESTER – IV

ENVIRONMENTAL MODELLING AND BIOSTATISTICS

CODE : 256060402

| Teaching Scheme | | | | Credits | Evaluation Scheme | | | | |
|-----------------|----|---|-------|---------|-------------------|----|----------|----|-------|
| Th | Tu | P | Total | | Internal | | External | | Total |
| | | | | | Th | Pr | Th | Pr | |
| 4 | - | - | 4 | 4 | 30 | 50 | 70 | - | 150 |

UNIT - I

Measurement of central tendency - mean (Geometric and Harmonic), median, mode, Measurement of dispersion moments, standard deviation, skewness and kurtosis, Correlation and linear regression of one independent variable, Basic laws and concepts of probability

UNIT - II

Definition of random variable, density function, Basic concepts of binomial and normal distributions. Sampling measurement and distribution of attributes, moments, matrices and simultaneous linear equations, tests of hypothesis and significance.

UNIT - III

Role of modelling in environmental sciences, Model classification deterministic models, stochastic models, steady state models, dynamic models, different stages involved in model building. Simple microbial growth kinetics monod equation, methods for formulation of dynamic balance equations mass balance procedures.

UNIT - IV

Models of population growth and interactions Lotka Volterra model, Leslies matrix model, Point source stream pollution, Box model, Gaussian plume model, Linear, simple and multiple regression models, validation and forecasting.

Course outcome: Students get enlighten about environmental Statistical and modelling, its mechanism in body as well as its impacts in environment.

REFERENCES

1. Dynamics of Environmental Bioprocesses-Modelling and simulation-Snape and Dunn.
2. Environmental Modeling - Jorgensen

M.Sc. SEMESTER – IV

Practicals

CODE : 256060403

- 1) Energy and Environment/ Energy and Electricity
- 2) Wildlife Conservation and Species Extinction
- 3) Water Pollution
- 4) Air Pollution
- 5) Nuclear power, waste and pollution
- 6) Waste Disposal
- 7) Loss of Biodiversity

- 8) Urban Sprawl
- 9) Sustainable Development
- 10) Climate Change

M.Sc. SEMESTER – IV

Dissertation
CODE : 256060404

| Teaching Scheme | | | | Credits | Evaluation Scheme | | | | |
|-----------------|----|---|-------|---------|-------------------|----|----------|----|-------|
| Th | Tu | P | Total | | Internal | | External | | Total |
| | | | | | Th | Pr | Th | Pr | |
| - | - | - | 12 | 12 | 70 | - | 70 | - | 150 |

Swarnim Startup & Innovation University

SWARNIM SCIENCE COLLEGE

Master of Science (M.Sc.) Pharmaceutics; Teaching syllabus & examination pattern

Semester 1

| Sr. No . | Subject Code | Subject Name | Cred it | Teaching scheme per week | | | | Examination | | | | | | | | Total |
|----------|--------------|--|---------|--------------------------|------|------------|--------|-------------|----------|-----|----------|----------|----------|----|-----------|-------|
| | | | | T h | Tu t | Practica l | Tota l | Internal | | | | External | | | | |
| | | | | | | | | Th | PASSIN G | Pr | PASSI NG | Th | PASSI NG | Pr | PAS SIN G | |
| 1 | 256070101 | Modern Pharmaceutic al analytical techniques I | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 2 | 256070102 | Pharmaceutic al Dosage forms | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 3 | 256070103 | Fundamental s of pharmacolog y and clinical research | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 4 | 256070104 | Concepts of natural products | 4 | 4 | | | 4 | 30 | 12 | | | 70 | 25 | | | 100 |
| 5 | 256070105 | Common Practicals I | 8 | - | - | 12 | 12 | | | 100 | 40 | - | - | - | - | 100 |
| | | Total | 24 | 16 | - | 12 | 28 | 120 | - | 100 | - | 280 | - | - | - | 500 |





SWARRNIM SCIENCE COLLEGE

MSc Pharmaceutics Programme

Semester 1

Course Title: PHARMACEUTICAL DOSAGE FORMS

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|------------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| Core | 256070102 | 4 | 40 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course the student should be able to:

CO1: Outline basics of different dosage forms like tablet capsules, aerosol and parenteral.

CO2: Design and develop various conventional dosage forms.

CO3: Discuss the basic requirement of cGMP and industrial management.

CO4: Categories the biopharmaceutical consideration for product development

CO5: Prioritise the factor affecting drug product performance.

CO6: Illustrate the requirement of scale up and post approval changes.



Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1. | <p>Tablets: a. Introduction, ideal characteristics of tablets, classification of tablets. Excipients, Formulation of tablets, granulation methods, compression and processing problems. Equipment and tablet tooling.</p> <p>Capsules: a. Hard gelatin capsules: Introduction, Production of hard gelatin capsule shells. Size of capsules, Filling, finishing and special techniques of formulation of hard gelatin capsules, manufacturing defects. b. Soft gelatin capsules: Nature of shell and capsule content, size of capsules, importance of base adsorption and minim/gram factors, production, in process and final product quality control tests. Packing, storage and stability testing of soft gelatin capsules</p> | 08 | 20 % |
| 2. | <p>Parenteral Products: a. Definition, types, advantages and limitations. Preformulation factors and essential requirements, vehicles, additives, b. Production procedure, production facilities and controls, aseptic processing c. Formulation of injection. d. Containers and closures selection, filling and sealing of ampoules, vials and infusion fluids.</p> <p>Pharmaceutical Aerosols: Definition, propellants, containers, valves, types of aerosol systems; formulation and manufacture of aerosols; Evaluation of aerosols; Quality control and stability studies</p> | 08 | 20 % |
| 3. | <p>Biopharmaceutic considerations in drug product design and In Vitro Drug Product Performance: Introduction, biopharmaceutic factors affecting drug bioavailability, rate-limiting steps in drug absorption, physicochemical nature of the drug formulation factors affecting drug product performance, in vitro: dissolution and drug release testing, compendial methods of dissolution, alternative methods of dissolution testing, meeting dissolution requirements, problems of variable control in dissolution testing performance of drug products. In vitro–in vivo correlation, dissolution profile comparisons, drug product stability, considerations in the design of a drug product.</p> | 08 | 20 % |
| 4. | <p>Drug Product Performance, In Vivo: Bioavailability and Bioequivalence: drug product performance, purpose of bioavailability studies, relative and absolute availability. methods for assessing bioavailability, bioequivalence studies, design and evaluation of bioequivalence studies, study designs, crossover study designs, evaluation of the</p> | 08 | 20 % |



| | | | |
|----|--|----|-----|
| | data, bioequivalence example, study submission and drug review process. biopharmaceutics classification system, methods. Permeability: In-vitro, in-situ and In-vivo methods. generic biologics (biosimilar drug products), clinical significance of bioequivalence studies, special concerns in bioavailability and bioequivalence studies, generic substitution | | |
| 5. | cGMP & Industrial Management: Objectives and policies of current good manufacturing practices, layout of buildings, services, equipment and their maintenance Production management: Production organization, materials management, handling and transportation, inventory management and control, production and planning control, Sales forecasting, budget and cost control, industrial and personal relationship. | 06 | 15% |
| 6. | Pilot plant scale up techniques: General considerations – including significance of personnel requirements, space requirements, raw materials, Pilot plant scale up considerations for solids, liquid orals, semi solids and relevant documentation, SUPAC guidelines, Introduction to platform technology | 04 | 5% |

| 2. Evaluation | | |
|---------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-------------------------|--|-------------------------------|-----------------|
| 1. | Lachmann and Libermann | Theory and Practice of Industrial Pharmacy | Publisher Lea & Febiger, U.S. | 3rd |
| 2. | Sidney H. Willig. | Good manufacturing practices for Pharmaceuticals: A plan for total quality control | Marcel Dekker Inc | 2 nd |
| 3 | Gillbert and S. Banker. | Modern Pharmaceutics | CRC press | 4 th |



4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------|-------------------------------------|-----------------------------|-----------------|
| 1. | P.P. Sharma. | How to practice GMPs | Vandhana Publications, Agra | 5 th |
| 2. | Rawlins. | Bentley's Textbook of Pharmaceutics | Elsevier | Old |



Swarnim Startup & Innovation University
SWARNIM SCIENCE COLLEGE
Master of Science (M.Sc.) Pharmaceutics; Teaching syllabus & examination pattern

| Semester 2 | | | | | | | | | | | | | | | | |
|------------|--------------|---|--------|--------------------------|-----|-----------|-------|-------------|---------|-----|---------|----------|---------|----|---------|-------|
| Sr. No. | Subject Code | Subject Name | Credit | Teaching scheme per week | | | | Examination | | | | | | | | Total |
| | | | | Th | Tut | Practical | Total | Internal | | | | External | | | | |
| | | | | | | | | Th | PASSING | Pr | PASSING | Th | PASSING | Pr | PASSING | |
| 1 | ----- | IE | 3 | 3 | | | 3 | 30 | 12 | | | 70 | 25 | | | 100 |
| 2 | 256070201 | Modern Pharmaceutical analytical techniques II (Common) | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 3 | 256070202 | Regulatory Affairs (Common) | 4 | 4 | | | 4 | 30 | 12 | | | 70 | 25 | | | 100 |
| 4 | 256070203 | Specialisation Subject I (Drug Delivery System) | 4 | 4 | | | 4 | 30 | 12 | | | 70 | 25 | | | 100 |
| 5 | 256070204 | Specialisation practical (Drug Delivery System) | 8 | | - | - | 12 | - | - | 200 | 80 | - - | | - | - | 200 |
| | | Total | 23 | 15 | - | | 27 | 120 | - | 200 | - | 280 | - | - | - | 600 |





SWARNIM SCIENCE COLLEGE

MSc Pharmaceutics Programme

Semester 2

Course Title: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES-II

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256070201 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70% | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Explain and demonstrate the principles of Fluorescence spectroscopy and Atomic absorption and emission spectroscopy along with its instrumentation and application

CO2: Describe the theory, principle, instrumentation, and applications of Gas chromatography

CO3: Explain the theory, principle, methodology, pros, cons, and applications of High-performance liquid chromatography

CO4: Understand and get knowledge about the basics of High-performance Thin layer chromatography with its instrumentation and applications.

CO5: Develop theoretical and practical skills for validation and calibration of various analytical instruments

CO6: Outline the HPLC and Bio-analytical method development



Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1. | Atomic Absorption And Plasma Emission Spectroscopy: Principle, instrumentation, interferences and applications in Pharmacy Spectrofluorimetry: Theory of Fluorescence, Factors affecting fluorescence, Quenchers, Instrumentation and Applications of fluorescence spectrophotometer | 08 | 20 % |
| 2. | Gas Chromatography: Introduction; Theory and Principle of Gas-Chromatography; Mobile phase, Stationary phases for GSC and GLC; Instrumentation (including temperature programming and derivatization) and applications of GC; Overview of GC-MS. High-Performance Liquid Chromatography: Introduction; Theory, Classification and Principle of HPLC; Mobile phase, Stationary phases for normal and reversed-phase HPLC; Instrumentation (including the significance of guard column) and applications of HPLC; Comparison of HPLC with GC; Overview of LC-MS, LC-MS/MS. | 12 | 25 % |
| 3. | HPTLC Principle; Comparison with HPLC; Instrumentation, applications, advantages, and limitations of HPTLC | 8 | 15 % |
| 4. | Validation and calibration of various instruments used for drug analysis: pH Meter, Conductometer, UV Visible Spectrophotometer, IR Spectrophotometer, HPLC, HPTLC | 4 | 15 % |
| 5. | HPLC Method Development: Basics of separation including Column resolution, Plate number, Plate height, Selectivity factor, Capacity factor, and their optimization. Selection of detector and column Mobile phase optimization including the selection of the correct pH value Bio-analytical HPLC method development and validation: Biological sample preparation: Protein precipitation, liquid-liquid extractions, solid phase extractions, and membrane separations | 8 | 25% |



| 2. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|--|-------------------|------------------|
| 1. | Dr. B.K Sharma | Instrumental Methods of Chemical Analysis | Krishna Prakashan | 24 th |
| 2. | A.I. Vogel, | Vogel's Textbook of Quantitative Chemical Analysis | Pearson Education | 6 th |
| 3 | D. C. Garrett | Quantitative Analysis of Drugs | Springer US | 3 rd |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|---|-------------------------------|-----------------|
| 1. | P. D. Sethi | Quantitative Analysis of Drugs in Pharmaceutical Formulations | CBS Publishers & Distributors | 3 rd |
| 2. | Robert M Silverstein | Spectrometric Identification of Organic compounds - | John Wiley & Sons | 6th |
| 3. | Willards | Instrumental methods of analysis | CBS publishers | 7th |
| 4. | Doglas A Skoog, F. James Holler, Timothy A. Nieman | Principles of Instrumental Analysis - | Eastern press | 5th |





SWARNIM SCIENCE COLLEGE

MSc Pharmaceutics Programme

Semester 2

Course Title: REGULATORY AFFAIRS

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256070202 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1. The Concepts of innovator and generic drugs, drug development process.

CO2. The Regulatory guidance's and guidelines for filing and approval Process

CO3. Preparation of Dossiers and their submission to regulatory agencies in different countries

CO4. Post approval regulatory requirements for actives and drug products

CO5. Submission of global documents in CTD/ eCTD formats

CO6. Clinical trials requirements for approvals for conducting clinical trials, Pharmacovigilance and process of monitoring in clinical trials.



| Sr. No | Course Content | Total Hrs |
|--------|---|-----------|
| 1. | <p>a. Documentation in Pharmaceutical industry: Master formula record, DMF (Drug Master File), distribution records. Generic drugs product development Introduction, Hatch- Waxman act and amendments, CFR (CODE OF FEDERAL REGULATION), drug product performance, invitro, ANDA regulatory approval process, NDA approval process, BE and drug product assessment, in –vivo, scale up process approval changes, post marketing surveillance, outsourcing BA and BE to CRO.</p> <p>b. Regulatory requirement for product approval: API, biologics, novel, therapies obtaining NDA, ANDA for generic drugs ways and means of US registration for foreign drugs</p> | 15 |
| 2 | CMC, post approval regulatory affairs. Regulation for combination Products and medical devices.CTD and ECTD format, industry and FDA liaison. ICH - Guidelines of ICH-Q, S E, M. Regulatory requirements of EU, MHRA, TGA and ROW countries. | 10 |
| 3 | Non clinical drug development: Global submission of IND, NDA, ANDA. Investigation of medicinal products dossier, dossier (IMPD) and investigator brochure (IB) | 7 |
| 4 | Clinical trials: Developing clinical trial protocols. Institutional review board/ independent ethics committee Formulation and working procedures informed Consent process and procedures. HIPAA- new, requirement to clinical study process, pharmacovigilance safety monitoring in clinical trials. | 8 |



| 2. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------------------------|---|--------------------------------|----------------|
| 1. | by Ira R. Berry and Robert P.Martin, | The Pharmaceutical Regulatory Process, Second Edition Edited Drugs and the Pharmaceutical Sciences, | Informa Health care Publishers | Vol.185 |
| 2. | Fay A.Rozovsky and Rodney K. Adams | Clinical Trials and Human Research: A Practical Guide to Regulatory Compliance | - | - |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------------|--|--|----------------|
| 1. | Richard A Guarino, | New Drug Approval Process: Accelerating Global Registrations | Drugs and the Pharmaceutical Sciences, Vol.190 | 5th edition, |
| 2. | Leon Shargel and IsaderKaufer | Generic Drug Product Development, Solid Oral Dosage forms | Marcel Dekker series, | Vol.143 |





SWARNIM SCIENCE COLLEGE

MSc Pharmaceutics Programme

Semester 2

Course Title: DRUG DELIVERY SYSTEM

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| Core | 256070203 | 4 | 40 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1. To understand various approaches for development of various controlled drug delivery system.

CO2. To understand the criteria for selection of drugs and polymers for the development of Novel drug delivery systems, their formulation and evaluation.

CO3. Differentiate the transdermal delivery approaches and its evaluation.

CO4. Explore various approaches for gastroretentive drug delivery system.

CO5. Demonstrate various approaches of microencapsulation and mucosal drug delivery.

CO6. Design and develop nasopulmonary and ocular drug delivery system.



| Sr. No | Course Content | Total Hrs |
|--------|---|-----------|
| 1. | Controlled drug delivery systems: Introduction, terminology/definitions and rationale, advantages, disadvantages, selection of drug candidates. Approaches to design controlled release formulations based on diffusion, dissolution and ion exchange principles. Physicochemical and biological properties of drugs relevant to controlled release formulations Polymers: Introduction, classification, properties, advantages and application of polymers in formulation of controlled release drug delivery systems | 8 |
| 2 | Microencapsulation: Definition, advantages and disadvantages, microspheres /microcapsules, microparticles, methods of microencapsulation, applications Mucosal Drug Delivery system: Introduction, Principles of bioadhesion / mucoadhesion, concepts, advantages and disadvantages, transmucosal permeability and formulation considerations of buccal delivery systems | 10 |
| 3 | Transdermal Drug Delivery Systems: Introduction, Permeation through skin, factors affecting permeation, permeation enhancers, basic components of TDDS, formulation approaches Gastroretentive drug delivery systems: Introduction, advantages, disadvantages, approaches for GRDDS – Floating, high density systems, inflatable and gastroadhesive systems and their applications | 12 |
| 4 | Nasopulmonary drug delivery system: Introduction to Nasal and Pulmonary routes of drug delivery, Formulation of Inhalers (dry powder and metered dose), nasal sprays, nebulizers Ocular Drug Delivery Systems: Introduction, intra ocular barriers and methods to overcome –Preliminary study, ocular formulations and ocuserts Intrauterine Drug Delivery Systems: Introduction, advantages and disadvantages, development of intra uterine devices (IUDs) and applications | 10 |



| 2. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------------|---|---|---------------------------------|
| 1. | N.K. Jain, | Controlled and Novel Drug Delivery, | CBS Publishers & Distributors, New Delhi, First | Edition 1997 (reprint in 2001). |
| 2. | S.P. Vyas and R.K. Khar, | Controlled Drug Delivery - concepts and advances, First | Vallabh Prakashan, New Delhi, | edition 2002. |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|--------------------------------------|--------------------------------------|----------------|
| 1. | Edith Mathiowitz, Published by Wiley Interscience Publication, | Encyclopedia of Controlled Delivery. | John Wiley and Sons, Inc, New York | - |
| 2. | Robinson, J. R., Lee V. H. L., | Controlled Drug Delivery Systems, | Marcel Dekker, Inc., New York, 1992. | - |





SWARNIM SCIENCE COLLEGE

MSc Pharmaceutics Programme

Semester 2

Course Title: Drug Delivery System

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256070204 | 4 | 120 | | | | | |
| | | | | - | - | 100% | - | - |

Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Design various novel dosage forms.

CO2: Evaluate various parameters of dosage forms

CO3: Perform dissolution profile of various drug delivery systems.

CO4: Study stability parameters of various dosage forms.

CO5: Check the effect of various process parameters for optimization of dosage forms.



| No. | Title | Hours/ week |
|-----|--|----------------|
| 1 | To study Micrometric properties of powders and granulation. | 8 |
| 2 | To carry out preformulation studies of tablets. | |
| 3 | Formulation and evaluation of sustained release matrix tablets. | |
| 4 | Preparation and evaluation of Floating DDS- hydro dynamically balanced DDS | |
| 5 | Preparation and evaluation of bilayer tablet. | |
| 6 | Formulation and evaluation of Mucoadhesive tablets. | |
| 7 | Formulation and evaluation of trans dermal patches. | |
| 8 | Formulation and evaluation of osmotic tablet | |
| 9 | Preparation and evaluation of microspheres. | |
| 10 | Design and development of ocular inserts | |
| 11 | Formulation development of buccal drug delivery. | |
| 12 | To plot Heckal plot, Higuchi and peppas plot and determine similarity factors. | |
| 13 | To perform stability testing of drug in liquid formulation. | |
| 14 | To study the effect of polymer on drug release. | |
| 15 | To perform In-vitro dissolution profile of CR/ SR marketed formulation | |

| 1. Evaluation | | |
|---------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

2. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|------------|-------------------------------------|---|---------------------------------|
| 1. | N.K. Jain, | Controlled and Novel Drug Delivery, | CBS Publishers & Distributors, New Delhi, First | Edition 1997 (reprint in 2001). |



| | | | | |
|----|--------------------------|---|-------------------------------|---------------|
| 2. | S.P. Vyas and R.K. Khar, | Controlled Drug Delivery - concepts and advances, First | Vallabh Prakashan, New Delhi, | edition 2002. |
|----|--------------------------|---|-------------------------------|---------------|

3. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--|--------------------------------------|--------------------------------------|---------|
| 1. | Edith Mathiowitz, Published by Wiley Interscience Publication, | Encyclopedia of Controlled Delivery. | John Wiley and Sons, Inc, New York | - |
| 2. | Robinson, J. R., Lee V. H. L., | Controlled Drug Delivery Systems, | Marcel Dekker, Inc., New York, 1992. | - |



Swarnim Startup & Innovation University

SWARRNIM SCIENCE COLLEGE

Master of Science (M.Sc.) Pharmacognosy; Teaching syllabus & examination pattern

Semester 1

| Sr. No. | Subject Code | Subject Name | Credit | Teaching scheme per week | | | | Examination | | | | | | | | Total |
|---------|--------------|--|--------|--------------------------|-----|-----------|-------|-------------|---------|-----|---------|----------|---------|----|---------|-------|
| | | | | Th | Tut | Practical | Total | Internal | | | | External | | | | |
| | | | | | | | | Th | PASSING | Pr | PASSING | Th | PASSING | Pr | PASSING | |
| 1 | 256110101 | Modern Pharmaceutical analytical techniques I | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 2 | 256110102 | Pharmaceutical Dosage forms | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 3 | 256110103 | Fundamentals of pharmacology and clinical research | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 4 | 256110104 | Concepts of natural products | 4 | 4 | | | 4 | 30 | 12 | | | 70 | 25 | | | 100 |
| 5 | 256110105 | Common Practicals I | 8 | - | - | 12 | 12 | | | 100 | 40 | - | - | - | - | 100 |
| 6 | | Total | 24 | 16 | - | 12 | 28 | 120 | - | 100 | - | 280 | - | - | - | 500 |





SWARNIM SCIENCE COLLEGE

MSc Pharmacognosy Programme

Semester 1

Course Title: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES-I

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256110101 | 4 | 40 | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Explain and demonstrate the principles of UV-visible spectroscopy along with its instrumentation and application

CO2: Describe the theory, principle, instrumentation, and applications of IR spectroscopy

CO3: Explain the theory, application, and instrumentation including ionization techniques, analysers, and detectors. Also understand the different ions, fragmentation rules, and rearrangements.

CO4: Understand and get knowledge about the basics of NMR and the different terms involved in it with an overview of C13NMR.

CO5: Discuss and classify Chromatography and its techniques and explain the theory, principle, methodology, pros, cons, and applications of Adsorption and partition, column, TLC and paper chromatography, ion exchange, affinity, gel chromatography

CO6: Outline the theory, instrumentation, and parameters of Gas chromatography as well as HPLC along with its advantages, disadvantages, and applications.



Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1. | UV-Visible Spectroscopy: Brief review of electromagnetic spectrum and absorption of radiations. The chromophore concept, absorption law, and limitations. Theory of electronic spectroscopy, absorption by organic molecules, choice of solvent, and solvent effects. Applications of UV-visible spectroscopy, multi-component assay, difference spectra and derivative spectra | 08 | 20 % |
| 2. | IR Spectroscopy: Theory of absorption of Infrared radiation by molecules; Molecular vibrations; Factors influencing vibrational frequencies; Calculation of vibrational frequencies (Hooke's law); Sample handling techniques; Instrumentation (Dispersion and FTIR spectrometer) and applications of IR Spectroscopy; Calibration of IR Spectrophotometer as per Pharmacopoeia | 08 | 20 % |
| 3. | Mass Spectrometry: Theory; Ionization techniques, Ion separating techniques; Different types of ions and their significance in mass spectra, Fragmentation rules and rearrangements; Instrumentation and applications of mass spectrometry | 08 | 15 % |
| 4. | Nuclear Magnetic Resonance spectroscopy: Fundamental Principles - nuclear spin, magnetic moment; Proton NMR spectroscopy - theory, chemical shift and factors affecting chemical shift, spin-spin coupling, coupling constant, relaxation process, Instrumentation and applications of PMR; Brief overview of C13 NMR | 08 | 20 % |
| 5. | Chromatography: Principle, apparatus, instrumentation, chromatographic parameters, factors affecting resolution and applications of the following: a) Paper chromatography b) Thin Layer chromatography c) Ion exchange chromatography d) Column chromatography e) Gas chromatography f) High | 06 | 25% |



| | | | |
|--|--|--|--|
| | Performance Liquid chromatography g) Affinity chromatography | | |
|--|--|--|--|

| 2. Evaluation | | |
|---------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------------|--|-------------------|------------------|
| 1. | Dr. B.K Sharma | Instrumental Methods of Chemical Analysis | Krishna Prakashan | 24 th |
| 2. | A.I. Vogel, | Vogel's Textbook of Quantitative Chemical Analysis | Pearson Education | 6 th |
| 3 | D. C. Garrett | Quantitative Analysis of Drugs | Springer US | 3 rd |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--|---|-------------------------------|-----------------|
| 1. | P. D. Sethi | Quantitative Analysis of Drugs in Pharmaceutical Formulations | CBS Publishers & Distributors | 3 rd |
| 2. | Robert M Silverstein | Spectrometric Identification of Organic compounds - | John Wiley & Sons | 6th |
| 3. | Willards | Instrumental methods of analysis | CBS publishers | 7th |
| 4. | Doglas A Skoog, F. James Holler, Timothy A. Nieman | Principles of Instrumental Analysis - | Eastern press | 5th |





SWARRNIM SCIENCE COLLEGE

MSc Pharmacognosy Programme

Semester 1

Course Title: PHARMACEUTICAL DOSAGE FORMS

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256110102 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course the student should be able to:

CO1: Outline basics of different dosage forms like tablet capsules, aerosol and parenteral.

CO2: Design and develop various conventional dosage forms.

CO3: Discuss the basic requirement of cGMP and industrial management.

CO4: Categories the biopharmaceutical consideration for product development

CO5: Prioritise the factor affecting drug product performance.

CO6: Illustrate the requirement of scale up and post approval changes.



Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1. | <p>Tablets: a. Introduction, ideal characteristics of tablets, classification of tablets. Excipients, Formulation of tablets, granulation methods, compression and processing problems. Equipment and tablet tooling.</p> <p>Capsules: a. Hard gelatin capsules: Introduction, Production of hard gelatin capsule shells. Size of capsules, Filling, finishing and special techniques of formulation of hard gelatin capsules, manufacturing defects. b. Soft gelatin capsules: Nature of shell and capsule content, size of capsules, importance of base adsorption and minim/gram factors, production, in process and final product quality control tests. Packing, storage and stability testing of soft gelatin capsules</p> | 08 | 20 % |
| 2. | <p>Parenteral Products: a. Definition, types, advantages and limitations. Preformulation factors and essential requirements, vehicles, additives, b. Production procedure, production facilities and controls, aseptic processing c. Formulation of injection. d. Containers and closures selection, filling and sealing of ampoules, vials and infusion fluids.</p> <p>Pharmaceutical Aerosols: Definition, propellants, containers, valves, types of aerosol systems; formulation and manufacture of aerosols; Evaluation of aerosols; Quality control and stability studies</p> | 08 | 20 % |
| 3. | <p>Biopharmaceutic considerations in drug product design and In Vitro Drug Product Performance: Introduction, biopharmaceutic factors affecting drug bioavailability, rate-limiting steps in drug absorption, physicochemical nature of the drug formulation factors affecting drug product performance, in vitro: dissolution and drug release testing, compendial methods of dissolution, alternative methods of dissolution testing, meeting dissolution requirements, problems of variable control in dissolution testing performance of drug products. In vitro–in vivo correlation, dissolution profile</p> | 08 | 20 % |



| | | | |
|-----------|---|-----------|------|
| | comparisons, drug product stability, considerations in the design of a drug product. | | |
| 4. | Drug Product Performance, In Vivo: Bioavailability and Bioequivalence: drug product performance, purpose of bioavailability studies, relative and absolute availability. methods for assessing bioavailability, bioequivalence studies, design and evaluation of bioequivalence studies, study designs, crossover study designs, evaluation of the data, bioequivalence example, study submission and drug review process. biopharmaceutics classification system, methods. Permeability: In-vitro, in-situ and In-vivo methods. generic biologics (biosimilar drug products), clinical significance of bioequivalence studies, special concerns in bioavailability and bioequivalence studies, generic substitution | 08 | 20 % |
| 5. | cGMP & Industrial Management: Objectives and policies of current good manufacturing practices, layout of buildings, services, equipment and their maintenance Production management: Production organization, materials management, handling and transportation, inventory management and control, production and planning control, Sales forecasting, budget and cost control, industrial and personal relationship. | 06 | 15% |
| 6. | Pilot plant scale up techniques: General considerations – including significance of personnel requirements, space requirements, raw materials, Pilot plant scale up considerations for solids, liquid orals, semi solids and relevant documentation, SUPAC guidelines, Introduction to platform technology | 04 | 5% |

| 5. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

6. Basic Text Books:



| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------|--|-------------------------------|-----------------|
| 1. | Lachmann and Libermann | Theory and Practice of Industrial Pharmacy | Publisher Lea & Febiger, U.S. | 3rd |
| 2. | Sidney H. Willig. | Good manufacturing practices for Pharmaceuticals: A plan for total quality control | Marcel Dekker Inc | 2 nd |
| 3 | Gillbert and S. Banker. | Modern Pharmaceutics | CRC press | 4 th |

7. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|-------------------------------------|-----------------------------|-----------------|
| 1. | P.P. Sharma. | How to practice GMPs | Vandhana Publications, Agra | 5 th |
| 2. | Rawlins. | Bentley's Textbook of Pharmaceutics | Elsevier | Old |





SWARNIM SCIENCE COLLEGE

MSc Pharmacognosy Programme

Semester 1

Course Title: FUNDAMENTALS OF PHARMACOLOGY AND CLINICAL RESEARCH

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| Core | 256110103 | 4 | 40 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | | 20 % | 10 % | - | 70 % | - |

8. Course Outcomes

Upon completion of syllabus, students can able to

CO1. Identify various routes of administration of drugs and their pharmacokinetic processes.

CO2. Understand the concepts of drug action and mechanisms involved along with basics of cell biology and secondary messengers.

CO3. Summarize the basic principles of transmission including transmission of neurotransmitters of autonomic and central nervous system.

CO4. Describe the principles and applications of various techniques used in basic research.

CO5. Demonstrate about the laboratory animals, their maintenance as per the guidelines, basic knowledge of preclinical and toxicological evaluation processes.

CO6. Illustrate the basic fundamentals of clinical research.



9. Syllabus:

| Module | Contents | No of Sessions | Weightage |
|----------|--|----------------|-----------|
| 1 | General Pharmacology Routes of Drug Administration Pharmacokinetics: The dynamics of drug absorption, distribution, biotransformation and elimination. Significance of protein binding. | 05 | 12.5 % |
| 2 | Cell biology and cell signalling: Structure and functions of cell and its organelles, Transport across the cell membrane. Classification of receptor family and molecular structure ligand gated ion channels; G-protein coupled receptors, tyrosine kinase receptors and nuclear receptors. Secondary messengers: cyclic AMP, cyclic GMP, calcium ion, inositol 1, 4, 5-trisphosphate, (IP3), NO, and diacylglycerol. | 06 | 15 % |
| 3 | Neurotransmission a. General aspects and steps involved in neurotransmission. b. Neurohumoral transmission in autonomic nervous system c. Neurohumoral transmission in central nervous system | 05 | 12.5 % |
| 4 | Principles and applications of following tools DNA electrophoresis, Polymerase chain reaction, SDS page, ELISA, Western blotting technique, Recombinant DNA technology and gene therapy. | 08 | 20 % |
| 5 | Preclinical and toxicological screening Common laboratory animals, Transgenic animals, CPCSEA guidelines to conduct experiments on animals. Anaesthesia and euthanasia of experimental animals. General principles of preclinical screening. | 10 | 25% |



| | | | |
|----------|---|-----------|-----|
| | Basic definition and types of toxicology. ICH guidelines for conducting toxicity studies. Oral and dermal toxicity studies as per OECD guidelines. General principles of treatment of poisoning. | | |
| 6 | Basics of clinical research a. Introduction to Clinical research. b. Adverse drug reactions: Definition, Terminologies and types of ADR. Causality assessment, Severity and seriousness assessment. c. Drug interactions (Pharmacokinetic and Pharmacodynamic interactions) d. Phases of clinical trials e. Origin and Principles of ICH-GCP (Good Clinical Practice) guidelines f. Institutional Review Board | 06 | 15% |

10. Evaluation

| | | |
|---|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

11. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---------------------------------|------------------------------------|--|-----------------|
| 1. | K. D. Tripathi | Essentials of Medical Pharmacology | Jaypee Brothers Medical Publishers Ltd | 7 th |
| 2. | Julia Lloyd and Ann Raven | Handbook of clinical Research | Churchill Livingstone | 2 nd |
| 3. | Karen E. Stine, Thomas M. Brown | Principles of toxicology | CRC Press | 3 rd |

12. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------|------------------|-----------|---------|
|---------|----------|------------------|-----------|---------|



| | | | | |
|----|--|---|--------------------------|------------------|
| 1. | Bjorn Knollmann, Laurence Brunton | Goodman and Gillman's, The Pharmacological Basis of Therapeutics | McGraw-Hill Education | 14 th |
| 2. | David Machin, Simon Day, Sylvan Green | Textbook of Clinical Trials | John Wiley and Sons | 2 nd |





SWARNIM SCIENCE COLLEGE

MSc Pharmacognosy Programme

Semester 1

Course Title: CONCEPTS OF NATURAL PRODUCTS

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256110104 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70 % | - |

13. Course Outcomes

Upon completion of this course the student should be able to:

CO1: Explain medicinal importance of natural drugs

CO2: Illustrate the importance of quality control of drugs of natural origin.

CO3: Describe importance of primary and secondary metabolites of medicinal plants.

CO4: Discuss the principles of alternative system of medicines.

CO5: Demonstrate various extraction and estimation techniques of Phytoconstituents.

CO6: Brief outline the uses of herbs in nutraceuticals and cosmeceuticals.



Syllabus

| Module | Contents | No of Sessions | Weightage | | | | | | | | | | |
|--------------------------------|--|----------------|-----------|--------------------------|-------------------------------|-------------------|--|--------------------------------|---|-------------------|-----------|----|------|
| 1. | Definition, history, present status, and scope of Pharmacognosy Classification of Natural drugs: <ul style="list-style-type: none">● Alphabetical● Taxonomical● Morphological● Pharmacological● Chemical● Chemo-taxonomical Adulteration of drugs of natural origin. WHO guidelines in quality assessment of herbal drugs. | 07 | 15 % | | | | | | | | | | |
| 2. | Introduction to primary and secondary metabolites: Definition, classification, properties and test for identification of Carbohydrates, Proteins, Lipids, Alkaloids, Glycosides, Flavonoids, Tannins, Volatile oil and Resins Basic principles involved in the traditional systems of medicine like: Ayurveda, Siddha, Unani and Homeopathy | 10 | 20 % | | | | | | | | | | |
| 3. | Biological source, chemical constituents, and therapeutic efficacy of the following categories of crude drugs. <table><tr><td>Cardiotonic</td><td>Digitalis</td></tr><tr><td>Drugs acting on GI tract</td><td>Fennel, Ginger, Black Pepper,</td></tr><tr><td>Asafoetida, Senna</td><td></td></tr><tr><td>Drugs acting on nervous system</td><td>Datura, Opium, Tea leaves, Coffee seeds</td></tr><tr><td>Anti-hypertensive</td><td>Rauwolfia</td></tr></table> | Cardiotonic | Digitalis | Drugs acting on GI tract | Fennel, Ginger, Black Pepper, | Asafoetida, Senna | | Drugs acting on nervous system | Datura, Opium, Tea leaves, Coffee seeds | Anti-hypertensive | Rauwolfia | 08 | 20 % |
| Cardiotonic | Digitalis | | | | | | | | | | | | |
| Drugs acting on GI tract | Fennel, Ginger, Black Pepper, | | | | | | | | | | | | |
| Asafoetida, Senna | | | | | | | | | | | | | |
| Drugs acting on nervous system | Datura, Opium, Tea leaves, Coffee seeds | | | | | | | | | | | | |
| Anti-hypertensive | Rauwolfia | | | | | | | | | | | | |



| | | | | |
|-----------|---|------------------------------|-----------|------|
| | Anti-Cancer | Vinca, Podophyllum, Taxus | | |
| | Antidiabetics | Pterocarpus, Gymnema | | |
| | Antiseptics and disinfectants | Neem, Turmeric, Tulsi | | |
| | Antimalarials | Cinchona, Artemisia | | |
| 4. | Basics of Phytochemistry Modern methods of extraction, application of latest techniques like Spectroscopy, chromatography and electrophoresis in the isolation, purification and identification of natural drugs. | | 08 | 20 % |
| 5. | Nutraceuticals: Brief introduction, Regulatory aspects, FSSAI guidelines and therapeutic applications of Nutraceuticals. Different herbs used as a health food. Herbal cosmetics: Sources and description of raw materials of herbal origin used via, fixed oils, waxes, gums colours, perfumes, protective agents, bleaching agents, antioxidants in products such as skin care, hair care and oral hygiene products. | | 07 | 25% |

| 14. Evaluation | | |
|-----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

15. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------|------------------|-----------|---------|
|---------|----------|------------------|-----------|---------|



| | | | | |
|----|--------------------------------|---|---|------------------|
| 1. | C.K. Kokate, Purohit, Gokhlae. | Text book of Pharmacognosy, Gokhlae (2007), | Nirali Prakashan, Pune, 2007 | 37 th |
| 2. | V.D. Rangari | Textbook of Pharmacognosy & Phytochemistry; Vol 1 | Career publication | - |
| 3 | H.Pande | Herbal Cosmetics | Asia Pacific Business press, Inc, New Delhi. | - |
| 4. | Mohammad Ali | Pharmacognosy | CBS Publishers & Distributors, New Delhi 2008 | 2008 |

16. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-------------------------------|--|--|------------------|
| 1. | W. C. Evans, Trease and Evans | Pharmacognosy | W.B. Saunders & Co., London, 2009 | 16 th |
| 2. | WHO | WHO: Quality Control Methods for Medicinal Plant Materials | WHO, Geneva | 1988 |
| 3. | Mukherjee P.W. | Quality Control of Herbal Drugs: An Approach to Evaluation of Botanicals | Business Horizons Publishers, New Delhi, India | 2002 |
| 4. | Agrawal S.S. | Herbal Drug Technology | Orient Blackswan, New Delhi, 2012 | 2 nd |





SWARNIM SCIENCE COLLEGE

MSc Pharmacognosy Programme

Semester 1

Course Title: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES-I PRACTICAL

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| Core | 256110105 | 4 | 120 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | | - | - | 50% | - | 50% |

Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Develop skills in the Analysis of Pharmacopoeial Compounds and Formulations by different spectroscopy.

CO2: Describe and perform different practical methods for performing and separating of mixtures by paper and thin layer chromatography.

CO3: Develop the ability to document experimental procedures, record observations, and effectively communicate results. Emphasize the importance of maintaining accurate and organized experimental records.

CO4: Understand and apply the fundamental principles of HPLC, including the role of the stationary phase, mobile phase, and detector in achieving high-resolution separations.

CO5: Apply knowledge and hands-on skills on Gas Chromatography Instrumentation Proficiency



| No. | Title | Hours/ week |
|-----|--|----------------|
| 1 | Analysis of pharmacopoeial compounds and their formulations by UV Vis spectrophotometer (Any TWO) | 8 |
| 2 | Simultaneous estimation of multi component containing formulations by UV spectrophotometry (Any TWO) | |
| 3 | Assay of raw materials as per official monographs (Any TWO) | |
| 4 | Determination of absorption maxima and effect of solvents on absorption maxima of organic compounds | |
| 5 | To determine isobestic point of indicator by UV Spectrophotometry | |
| 6 | To determine dissociation constant of indicators by UV spectrophotometry | |
| 7 | Estimation of Sulfanilamide by colorimetry | |
| 8 | Estimation of non coloured drugs by derivatization | |
| 9 | Determination of vitamin C | |
| 10 | Estimation of quinine sulfate by fluorimetry | |
| 11 | Study of quenching of fluorescence | |
| 12 | Separation of amino acids by paper chromatography | |
| 13 | Separation of sugars by thin layer chromatography | |
| 14 | Separation of plant pigments by column chromatography | |
| 15 | Demonstration experiment on HPLC and Gas Chromatography | |

1. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---------------------------------|--|----------------|-----------------|
| 1. | Beckett and Stenlake | Practical Pharmaceutical Chemistry – Vol II | CBS Publishers | 4 th |
| 2. | P. D. Sethi, Dilip Charegaonkar | Identification of Drugs and Pharmaceutical Formulations by Thin Layer Chromatography | CBS Publishers | 2 nd |

2. Reference Books:



| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---|---|-------------------------------|-----------------|
| 1. | P. D. Sethi | Quantitative Analysis of Drugs in Pharmaceutical Formulations | CBS Publishers & Distributors | 3 rd |
| 2. | Doglas A Skoog, F. James Holler, Timothy A. Nieman | Principles of Instrumental Analysis | Eastern press | 5th |
| 3. | F. D. Snell and C. T. Snell | Colorimetric Methods of analysis (Van Nostrand Reinhold Company, N.Y.). | John Wiley and Sons | 3 rd |
| 4. | A.C.Moffat, M. David Osselton, Brain Widdop, L. Y. Galichet | Clarke's Analysis of Drugs and Poisons | Pharmaceutical Press | 3 rd |
| 5. | K. A. Connors | Text book of Pharmaceutical Analysis | John Wiley & Sons | 3 rd |



Swarnim Startup & Innovation University

SWARNIM SCIENCE COLLEGE

Master of Science (M.Sc.) Pharmacognosy; Teaching syllabus & Examination pattern

| Semester 2 | | | | | | | | | | | | | | | | |
|------------|--------------|---|--------|--------------------------|-----|-----------|-------|-------------|---------|-----|---------|----------|---------|----|---------|-------|
| Sr. No. | Subject Code | Subject Name | Credit | Teaching scheme per week | | | | Examination | | | | | | | | Total |
| | | | | Th | Tut | Practical | Total | Internal | | | | External | | | | |
| | | | | | | | | Th | PASSING | Pr | PASSING | Th | PASSING | Pr | PASSING | |
| 1 | ----- | IE | 3 | 3 | | | 3 | 30 | 12 | | | 70 | 25 | | | 100 |
| 2 | 256110201 | Modern Pharmaceutical analytical techniques II (Common) | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 3 | 256110202 | Regulatory Affairs (Common) | 4 | 4 | | | 4 | 30 | 12 | | | 70 | 25 | | | 100 |
| 4 | 256110203 | Specialization Subject I (Advanced Pharmacognosy-I) | 4 | 4 | | | 4 | 30 | 12 | | | 70 | 25 | | | 100 |
| 5 | 256110204 | Specialization practical (Pharmacognosy Practical-I) | 8 | | - | 12 | 12 | - | - | 200 | 80 | - | - | - | - | 200 |
| | | Total | 23 | 15 | - | | 27 | 120 | - | 200 | - | 280 | - | - | - | 600 |





SWARNIM SCIENCE COLLEGE

MSc Pharmacognosy Programme

Semester 2

Course Title: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES-II

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256110201 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70% | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Explain and demonstrate the principles of Fluorescence spectroscopy and Atomic absorption and emission spectroscopy along with its instrumentation and application

CO2: Describe the theory, principle, instrumentation, and applications of Gas chromatography

CO3: Explain the theory, principle, methodology, pros, cons, and applications of High-performance liquid chromatography

CO4: Understand and get knowledge about the basics of High-performance Thin layer chromatography with its instrumentation and applications.

CO5: Develop theoretical and practical skills for validation and calibration of various analytical instruments

CO6: Outline the HPLC and Bio-analytical method development



Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1. | Atomic Absorption And Plasma Emission Spectroscopy: Principle, instrumentation, interferences and applications in Pharmacy Spectrofluorimetry: Theory of Fluorescence, Factors affecting fluorescence, Quenchers, Instrumentation and Applications of fluorescence spectrophotometer | 08 | 20 % |
| 2. | Gas Chromatography: Introduction; Theory and Principle of Gas-Chromatography; Mobile phase, Stationary phases for GSC and GLC; Instrumentation (including temperature programming and derivatization) and applications of GC; Overview of GC-MS. High-Performance Liquid Chromatography: Introduction; Theory, Classification and Principle of HPLC; Mobile phase, Stationary phases for normal and reversed-phase HPLC; Instrumentation (including the significance of guard column) and applications of HPLC; Comparison of HPLC with GC; Overview of LC-MS, LC-MS/MS. | 12 | 25 % |
| 3. | HPTLC Principle; Comparison with HPLC; Instrumentation, applications, advantages, and limitations of HPTLC | 8 | 15 % |
| 4. | Validation and calibration of various instruments used for drug analysis: pH Meter, Conductometer, UV Visible Spectrophotometer, IR Spectrophotometer, HPLC, HPTLC | 4 | 15 % |
| 5. | HPLC Method Development: Basics of separation including Column resolution, Plate number, Plate height, Selectivity factor, Capacity factor, and their optimization. Selection of detector and column Mobile phase optimization including the selection of the correct pH value Bio-analytical HPLC method development and validation: Biological sample preparation: Protein precipitation, liquid-liquid extractions, solid phase extractions, and membrane separations | 8 | 25% |



| 2. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------------|--|-------------------|------------------|
| 1. | Dr. B.K Sharma | Instrumental Methods of Chemical Analysis | Krishna Prakashan | 24 th |
| 2. | A.I. Vogel, | Vogel's Textbook of Quantitative Chemical Analysis | Pearson Education | 6 th |
| 3 | D. C. Garrett | Quantitative Analysis of Drugs | Springer US | 3 rd |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--|---|-------------------------------|-----------------|
| 1. | P. D. Sethi | Quantitative Analysis of Drugs in Pharmaceutical Formulations | CBS Publishers & Distributors | 3 rd |
| 2. | Robert M Silverstein | Spectrometric Identification of Organic compounds - | John Wiley & Sons | 6th |
| 3. | Willards | Instrumental methods of analysis | CBS publishers | 7th |
| 4. | Doglas A Skoog, F. James Holler, Timothy A. Nieman | Principles of Instrumental Analysis - | Eastern press | 5th |





SWARNIM SCIENCE COLLEGE

MSc Pharmacognosy Programme

Semester 2

Course Title: REGULATORY AFFAIRS

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256110202 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1. The Concepts of innovator and generic drugs, drug development process.

CO2. The Regulatory guidance's and guidelines for filing and approval Process

CO3. Preparation of Dossiers and their submission to regulatory agencies in different countries

CO4. Post approval regulatory requirements for actives and drug products

CO5. Submission of global documents in CTD/ eCTD formats

CO6. Clinical trials requirements for approvals for conducting clinical trials, Pharmacovigilance and process of monitoring in clinical trials.



| Sr. No | Course Content | Total Hrs |
|--------|--|-----------|
| 1. | <p>a. Documentation in Pharmaceutical industry: Master formula record, DMF (Drug Master File), distribution records. Generic drugs product development Introduction, Hatch- Waxman act and amendments, CFR (CODE OF FEDERAL REGULATION), drug product performance, invitro, ANDA regulatory approval process, NDA approval process, BE and drug product assessment, in –vivo, scale up process approval changes, post marketing surveillance, outsourcing BA and BE to CRO.</p> <p>b. Regulatory requirement for product approval: API, biologics, novel, therapiesobtaining NDA, ANDA for generic drugs ways and means of US registration for foreign drugs</p> | 15 |
| 2 | CMC, post approval regulatory affairs. Regulation for combination Products and medical devices.CTD and ECTD format, industry and FDA liaison. ICH - Guidelines of ICH-Q, S E, M. Regulatory requirements of EU, MHRA, TGA and ROW countries. | 10 |
| 3 | <p>Non clinical drug development: Global submission of IND, NDA, ANDA.</p> <p>Investigation of medicinal products dossier, dossier (IMPD) and investigator brochure (IB)</p> | 7 |
| 4 | Clinical trials: Developing clinical trial protocols. Institutional review board/ independent ethics committee Formulation and working procedures informed Consent process and procedures. HIPAA- new, requirement to clinical study process, pharmacovigilance safety monitoring in clinical trials. | 8 |



| 2. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------------------------|---|-------------------------------|----------------|
| 1. | by Ira R. Berry and Robert P.Martin, | The Pharmaceutical Regulatory Process, Second Edition Edited Drugs and the Pharmaceutical Sciences, | Informa Healthcare Publishers | Vol.185 |
| 2. | Fay A.Rozovsky and Rodney K. Adams | Clinical Trials and Human Research: A Practical Guide to Regulatory Compliance | - | - |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------------|--|---|----------------|
| 1. | Richard A Guarino, | New Drug Approval Process: Accelerating Global Registrations | Drugs and the Pharmaceutical Sciences, Vol.1 90 | 5th edition, |
| 2. | Leon Shargel and IsaderKaufer | Generic Drug Product Development, Solid Oral Dosage forms | Marcel Dekker series, | Vol.143 |





SWARNNIM SCIENCE COLLEGE

MSc Pharmacognosy Programme

Semester 2

Course Title: Advanced Pharmacognosy-I

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256110203 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes: Upon completion of this course the student should be able to:

CO1: Understand biosynthetic pathways for secondary metabolite production in plants

CO2: Explain the importance of primary metabolites of medicinal plants.

CO3: Describe different category of Plant products with their pharmaceutical applications

CO4: to understand the in vitro techniques in the cultivation and production of crude drugs

CO5: to know the extraction techniques, isolation, characterization, and identification of the phytoconstituents

CO6: to know the content of monograph for herbal drugs and their biological evaluation by in vivo & in vitro models



Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | Metabolic pathways in higher plants and their determination a) Brief study of basic metabolic pathways and formation of different secondary metabolites through these pathways- Shikimic acid pathway, Acetate pathways b) Study of utilization of radioactive isotopes in the investigation of Biogenetic studies. | 05 | 10 % |
| 2 | Primary metabolites: General introduction, detailed study with respect to chemistry, sources, preparation, evaluation, preservation, storage, therapeutic used and commercial utility as Pharmaceutical Aids for the following Primary metabolites: Carbohydrates: Acacia, Tragacanth, Honey, Starch Enzymes: proteolytic enzymes (Papain, bromelain, urokinase, pepsin). Lipids (Waxes, fats, fixed oils): Castor oil, Wool Fat, Bees Wax | 06 | 20 % |
| 3 | Plant Products: Fibers - Cotton, Jute, Hemp Hallucinogens, Teratogens, Natural allergens Marine Drugs: Novel medicinal agents from marine sources | 05 | 10 % |
| 4 | Plant Tissue Culture: Historical development of plant tissue culture, types of cultures, Nutritional requirements, growth, and their maintenance. Applications of plant tissue culture in pharmacognosy. Edible vaccines | 07 | 20 % |
| 5 | Isolation, Identification and Analysis of Phytoconstituents a) Terpenoids: Menthol, Citral b) Glycosides: Glycyrrhetic acid, Sennosides c) Alkaloids: Atropine, Quinine, Caffeine d) Resins: Podophyllotoxin, Curcumin | 08 | 20% |
| 6 | Monographs of herbal drugs: General parameters of monographs of herbal drugs and comparative study in different Pharmacopoeia, | 03 | 5% |
| 7 | Biological screening of herbal drugs: In vivo & In vitro evaluation techniques for different category of herbal drugs and Toxicity studies as per OECD guidelines | 06 | 15 % |



| 2. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---|--|--|------------------|
| 1. | C.K. Kokate, Purohit, Gokhlae. | Text book of Pharmacognosy, Gokhlae (2007), | Nirali Prakashan, Pune, 2007 | 37 th |
| 2. | V.D. Rangari | Textbook of Pharmacognosy & Phytochemistry; Vol 1 | Career publication | - |
| 3 | S. V. Bhat, B. A. Naga Sampagi, M. Shivakumar | Chemistry of Natural Products | Narosa Publishing House, New Delhi, 2015 | |
| 4 | R Endress | Plant cell Biotechnology | Springer-Verlag, Berlin, 1994 | 1994 |
| 5 | Gurdeep R Chatwal | Organic Chemistry of Natural Products, Vol. 1 & 2. | Himalaya Publishing House, 2016 | 4th Edition |
| 6 | Vyas and Dixit | Text Book of Biotechnology | - | - |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-------------------------------|--|--|------------------|
| 1. | W. C. Evans, Trease and Evans | Pharmacognosy | W.B. Saunders & Co., London, 2009 | 16 th |
| 2. | WHO | WHO: Quality Control Methods for Medicinal Plant Materials | WHO, Geneva | 1988 |
| 3. | Mukherjee P.W. | Quality Control of Herbal Drugs: An Approach to Evaluation of Botanicals | Business Horizons Publishers, New Delhi, India | 2002 |
| 4. | Agrawal S.S. | Herbal Drug Technology | Orient Blackswan, New Delhi, 2012 | 2 nd |



| | | | | |
|----|-----------------------------------|----------------------|--|-------------|
| 5. | Indian Pharmacopoeian Commisiion | Indian Pharmacopoeia | Ministry of health & family welfare, Gov. of India | 2008 |
| 6. | Hildebert Wagner and Sabine Bladt | Plant Drug Analysis | Springer, NY, 1996 | 2nd Edition |





SWARNIM SCIENCE COLLEGE

MSc Pharmacognosy Programme

Semester 2

Course Title: Pharmacognosy Practical-I

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256110204 | 4 | 120 | - | - | 30% | - | 70% |
| | | | | | | | | |

Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Identify crude drugs with Morphological parameters.

CO2: Identify crude drugs with Microscopical parameters.

CO3: Extraction of phytoconstituents from plant powders.

CO4: Isolation of phytoconstituents from plant powders.

CO5: Perform Qualitative Chemical evaluation of crude drugs



| No. | Title | Hours/ week |
|-----|--|----------------|
| 1 | Morphology, histology, and powder characteristics of: Cinnamon bark | 8 |
| 2 | Morphology, histology, and powder characteristics of: Senna leaflet | |
| 3 | Morphology, histology, and powder characteristics of: Vasaka leaf | |
| 4 | Morphology, histology, and powder characteristics of: Clove flower buds | |
| 5 | Morphology, histology, and powder characteristics of: Ephedra stem | |
| 6 | Morphology, histology, and powder characteristics of: Fennel and Coriander fruits | |
| 7 | Exercise involving isolation & detection of active principles Caffeine - from tea dust | |
| 8 | Exercise involving isolation & detection of active principles Glycyrrhithinic acid from Liquorice | |
| 9 | Exercise involving isolation & detection of active principles Atropine from Belladonna | |
| 10 | Exercise involving isolation & detection of active principles Sennosides from Senna | |
| 11 | Separation of amino acids by Paper chromatography | |
| 12 | TLC of herbal extract | |
| 13 | Distillation of volatile oils and detection of Phyto constituents by TLC | |
| 14 | Monograph analysis of herbal drugs from recent Pharmacopoeias | |
| 15 | Analysis & Identification of crude drugs by chemical tests | |



| 1. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

2. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------------------|---|------------------------------|--------------------------|
| 1. | C.K. Kokate, Purohit, Gokhlae. | Text book of Pharmacognosy, Gokhlae (2007), | Nirali Prakashan, Pune, 2007 | 37 th |
| 2. | V.D. Rangari | Textbook of Pharmacognosy & Phytochemistry; Vol 1 | Career publication | - |
| 3. | Khandelwal K. R. | Practical of Pharmacognosy | Nirali Prakashan | 19 th edition |

3. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------------------|--|--------------------|----------------|
| 1. | WHO | WHO: Quality Control Methods for Medicinal Plant Materials | WHO, Geneva | 1988 |
| 2. | Indian Council of Medical Research, | Quality Standards of Indian Medicinal Plants | New Delhi, 200 | |
| 3. | Hildebert Wagner and Sabine Bladt | Plant Drug Analysis | Springer, NY, 1996 | 2nd Edition |



Swarnim Startup & Innovation University
SWARRNIM SCIENCE COLLEGE
Master of Science (M.Sc.) Pharmacology; Teaching syllabus & examination pattern

Semester 1

| Sr. No. | Subject Code | Subject Name | Credit | Teaching scheme per week | | | | Examination | | | | | | | | Total |
|---------|--------------|--|--------|--------------------------|-----|-----------|-------|-------------|---------|-----|---------|----------|---------|----|---------|-------|
| | | | | Th | Tut | Practical | Total | Internal | | | | External | | | | |
| | | | | | | | | Th | PASSING | Pr | PASSING | Th | PASSING | Pr | PASSING | |
| 1 | 256090101 | Modern Pharmaceutical analytical techniques I | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 2 | 256090102 | Pharmaceutical Dosage forms | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 3 | 256090103 | Fundamentals of pharmacology and clinical research | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 4 | 256090104 | Concepts of natural products | 4 | 4 | | | 4 | 30 | 12 | | | 70 | 25 | | | 100 |
| 5 | 256090105 | Common Practicals I | 8 | - | - | 12 | 12 | | | 100 | 40 | - | - | - | - | 100 |
| | | Total | 24 | 16 | - | 12 | 28 | 120 | - | 100 | - | 280 | - | - | - | 500 |





SWARNIM SCIENCE COLLEGE

MSc Pharmacology Programme

Semester 1

Course Title: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES-I

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| Core | 256090101 | 4 | 40 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Explain and demonstrate the principles of UV-visible spectroscopy along with its instrumentation and application

CO2: Describe the theory, principle, instrumentation, and applications of IR spectroscopy

CO3: Explain the theory, application, and instrumentation including ionization techniques, analysers, and detectors. Also understand the different ions, fragmentation rules, and rearrangements.

CO4: Understand and get knowledge about the basics of NMR and the different terms involved in it with an overview of C13NMR.

CO5: Discuss and classify Chromatography and its techniques and explain the theory, principle, methodology, pros, cons, and applications of Adsorption and partition, column, TLC and paper chromatography, ion exchange, affinity, gel chromatography

CO6: Outline the theory, instrumentation, and parameters of Gas chromatography as well as HPLC along with its advantages, disadvantages, and applications.



Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1. | UV-Visible Spectroscopy: Brief review of electromagnetic spectrum and absorption of radiations. The chromophore concept, absorption law, and limitations. Theory of electronic spectroscopy, absorption by organic molecules, choice of solvent, and solvent effects. Applications of UV-visible spectroscopy, multi-component assay, difference spectra and derivative spectra | 08 | 20 % |
| 2. | IR Spectroscopy: Theory of absorption of Infrared radiation by molecules; Molecular vibrations; Factors influencing vibrational frequencies; Calculation of vibrational frequencies (Hooke's law); Sample handling techniques; Instrumentation (Dispersion and FTIR spectrometer) and applications of IR Spectroscopy; Calibration of IR Spectrophotometer as per Pharmacopoeia | 08 | 20 % |
| 3. | Mass Spectrometry: Theory; Ionization techniques, Ion separating techniques; Different types of ions and their significance in mass spectra, Fragmentation rules and rearrangements; Instrumentation and applications of mass spectrometry | 08 | 15 % |
| 4. | Nuclear Magnetic Resonance spectroscopy: Fundamental Principles - nuclear spin, magnetic moment; Proton NMR spectroscopy - theory, chemical shift and factors affecting chemical shift, spin-spin coupling, coupling constant, relaxation process, Instrumentation and applications of PMR; Brief overview of C13 NMR | 08 | 20 % |
| 5. | Chromatography: Principle, apparatus, instrumentation, chromatographic parameters, factors affecting resolution and applications of the following: a) Paper chromatography b) Thin Layer chromatography c) Ion exchange chromatography d) Column chromatography e) Gas chromatography f) High Performance Liquid chromatography g) Affinity chromatography | 06 | 25% |



| 2. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------------|--|-------------------|------------------|
| 1. | Dr. B.K Sharma | Instrumental Methods of Chemical Analysis | Krishna Prakashan | 24 th |
| 2. | A.I. Vogel, | Vogel's Textbook of Quantitative Chemical Analysis | Pearson Education | 6 th |
| 3 | D. C. Garrett | Quantitative Analysis of Drugs | Springer US | 3 rd |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--|---|-------------------------------|-----------------|
| 1. | P. D. Sethi | Quantitative Analysis of Drugs in Pharmaceutical Formulations | CBS Publishers & Distributors | 3 rd |
| 2. | Robert M Silverstein | Spectrometric Identification of Organic compounds - | John Wiley & Sons | 6th |
| 3. | Willards | Instrumental methods of analysis | CBS publishers | 7th |
| 4. | Doglas A Skoog, F. James Holler, Timothy A. Nieman | Principles of Instrumental Analysis - | Eastern press | 5th |





SWARRNIM SCIENCE COLLEGE

MSc Pharmacology Programme

Semester 1

Course Title: PHARMACEUTICAL DOSAGE FORMS

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256090102 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course the student should be able to:

CO1: Outline basics of different dosage forms like tablet capsules, aerosol and parenteral.

CO2: Design and develop various conventional dosage forms.

CO3: Discuss the basic requirement of cGMP and industrial management.

CO4: Categories the biopharmaceutical consideration for product development

CO5: Prioritise the factor affecting drug product performance.

CO6: Illustrate the requirement of scale up and post approval changes.



Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1. | <p>Tablets: a. Introduction, ideal characteristics of tablets, classification of tablets. Excipients, Formulation of tablets, granulation methods, compression and processing problems. Equipment and tablet tooling.</p> <p>Capsules: a. Hard gelatin capsules: Introduction, Production of hard gelatin capsule shells. Size of capsules, Filling, finishing and special techniques of formulation of hard gelatin capsules, manufacturing defects. b. Soft gelatin capsules: Nature of shell and capsule content, size of capsules, importance of base adsorption and minim/gram factors, production, in process and final product quality control tests. Packing, storage and stability testing of soft gelatin capsules</p> | 08 | 20 % |
| 2. | <p>Parenteral Products: a. Definition, types, advantages and limitations. Preformulation factors and essential requirements, vehicles, additives, b. Production procedure, production facilities and controls, aseptic processing c. Formulation of injection. d. Containers and closures selection, filling and sealing of ampoules, vials and infusion fluids.</p> <p>Pharmaceutical Aerosols: Definition, propellants, containers, valves, types of aerosol systems; formulation and manufacture of aerosols; Evaluation of aerosols; Quality control and stability studies</p> | 08 | 20 % |
| 3. | <p>Biopharmaceutic considerations in drug product design and In Vitro Drug Product Performance: Introduction, biopharmaceutic factors affecting drug bioavailability, rate-limiting steps in drug absorption, physicochemical nature of the drug formulation factors affecting drug product performance, in vitro: dissolution and drug release testing, compendial methods of dissolution, alternative methods of dissolution testing, meeting dissolution requirements, problems of variable control in dissolution testing performance of drug products. In vitro–in vivo correlation, dissolution profile comparisons, drug product stability, considerations in the design of a drug product.</p> | 08 | 20 % |
| 4. | <p>Drug Product Performance, In Vivo: Bioavailability and Bioequivalence: drug product performance, purpose of bioavailability studies, relative and absolute availability.</p> | 08 | 20 % |



| | | | |
|----|---|----|-----|
| | methods for assessing bioavailability, bioequivalence studies, design and evaluation of bioequivalence studies, study designs, crossover study designs, evaluation of the data, bioequivalence example, study submission and drug review process. biopharmaceutics classification system, methods. Permeability: In-vitro, in-situ and In-vivo methods. generic biologics (biosimilar drug products), clinical significance of bioequivalence studies, special concerns in bioavailability and bioequivalence studies, generic substitution | | |
| 5. | cGMP & Industrial Management: Objectives and policies of current good manufacturing practices, layout of buildings, services, equipment and their maintenance Production management: Production organization, materials management, handling and transportation, inventory management and control, production and planning control, Sales forecasting, budget and cost control, industrial and personal relationship. | 06 | 15% |
| 6. | Pilot plant scale up techniques: General considerations – including significance of personnel requirements, space requirements, raw materials, Pilot plant scale up considerations for solids, liquid orals, semi solids and relevant documentation, SUPAC guidelines, Introduction to platform technology | 04 | 5% |

| 2. Evaluation | | |
|---------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|------------------------|--|-------------------------------|---------|
| 1. | Lachmann and Libermann | Theory and Practice of Industrial Pharmacy | Publisher Lea & Febiger, U.S. | 3rd |



| | | | | |
|----|-------------------------|--|-------------------|-----------------|
| 2. | Sidney H. Willig. | Good manufacturing practices for Pharmaceuticals: A plan for total quality control | Marcel Dekker Inc | 2 nd |
| 3 | Gillbert and S. Banker. | Modern Pharmaceutics | CRC press | 4 th |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------|-------------------------------------|-----------------------------|-----------------|
| 1. | P.P. Sharma. | How to practice GMPs | Vandhana Publications, Agra | 5 th |
| 2. | Rawlins. | Bentley's Textbook of Pharmaceutics | Elsevier | Old |





SWARNIM SCIENCE COLLEGE

MSc Pharmacology Programme

Semester 1

Course Title: FUNDAMENTALS OF PHARMACOLOGY AND CLINICAL RESEARCH

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256090103 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70 % | - |

5. Course Outcomes

Upon completion of syllabus, students can able to

CO1. Identify various routes of administration of drugs and their pharmacokinetic processes.

CO2. Understand the concepts of drug action and mechanisms involved along with basics of cell biology and secondary messengers.

CO3. Summarize the basic principles of transmission including transmission of neurotransmitters of autonomic and central nervous system.

CO4. Describe the principles and applications of various techniques used in basic research.

CO5. Demonstrate about the laboratory animals, their maintenance as per the guidelines, basic knowledge of preclinical and toxicological evaluation processes.

CO6. Illustrate the basic fundamentals of clinical research.



6. Syllabus:

| Module | Contents | No of Sessions | Weightage |
|----------|--|----------------|-----------|
| 1 | General Pharmacology Routes of Drug Administration Pharmacokinetics: The dynamics of drug absorption, distribution, biotransformation and elimination. Significance of protein binding. | 05 | 12.5 % |
| 2 | Cell biology and cell signalling: Structure and functions of cell and its organelles, Transport across the cell membrane. Classification of receptor family and molecular structure ligand gated ion channels; G-protein coupled receptors, tyrosine kinase receptors and nuclear receptors. Secondary messengers: cyclic AMP, cyclic GMP, calcium ion, inositol 1, 4, 5-trisphosphate, (IP3), NO, and diacylglycerol. | 06 | 15 % |
| 3 | Neurotransmission a. General aspects and steps involved in neurotransmission. b. Neurohumoral transmission in autonomic nervous system c. Neurohumoral transmission in central nervous system | 05 | 12.5 % |
| 4 | Principles and applications of following tools DNA electrophoresis, Polymerase chain reaction, SDS page, ELISA, Western blotting technique, Recombinant DNA technology and gene therapy. | 08 | 20 % |
| 5 | Preclinical and toxicological screening Common laboratory animals, Transgenic animals, CPCSEA guidelines to conduct experiments on animals. Anaesthesia and euthanasia of experimental animals. General principles of preclinical screening. Basic definition and types of toxicology. ICH guidelines for conducting toxicity studies. Oral and dermal toxicity studies as per OECD guidelines. General principles of treatment of poisoning. | 10 | 25% |



| | | | |
|----------|---|-----------|-----|
| 6 | Basics of clinical research a. Introduction to Clinical research. b. Adverse drug reactions: Definition, Terminologies and types of ADR. Causality assessment, Severity and seriousness assessment. c. Drug interactions (Pharmacokinetic and Pharmacodynamic interactions) d. Phases of clinical trials e. Origin and Principles of ICH-GCP (Good Clinical Practice) guidelines f. Institutional Review Board | 06 | 15% |
|----------|---|-----------|-----|

7. Evaluation

| | | |
|---|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

8. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---------------------------------|------------------------------------|--|-----------------|
| 1. | K. D. Tripathi | Essentials of Medical Pharmacology | Jaypee Brothers Medical Publishers Ltd | 7 th |
| 2. | Julia Lloyd and Ann Raven | Handbook of clinical Research | Churchill Livingstone | 2 nd |
| 3. | Karen E. Stine, Thomas M. Brown | Principles of toxicology | CRC Press | 3 rd |

9. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---------------------------------------|--|-----------------------|------------------|
| 1. | Bjorn Knollmann, Laurence Brunton | Goodman and Gillman's, The Pharmacological Basis of Therapeutics | McGraw-Hill Education | 14 th |
| 2. | David Machin, Simon Day, Sylvan Green | Textbook of Clinical Trials | John Wiley and Sons | 2 nd |





SWARNIM SCIENCE COLLEGE

MSc Pharmacology Programme

Semester 1

Course Title: CONCEPTS OF NATURAL PRODUCTS

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256090104 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70 % | - |

10. Course Outcomes

Upon completion of this course the student should be able to:

CO1: Explain medicinal importance of natural drugs

CO2: Illustrate the importance of quality control of drugs of natural origin.

CO3: Describe importance of primary and secondary metabolites of medicinal plants.

CO4: Discuss the principles of alternative system of medicines.

CO5: Demonstrate various extraction and estimation techniques of Phytoconstituents.

CO6: Brief outline the uses of herbs in nutraceuticals and cosmeceuticals.



Syllabus

| Module | Contents | No of Sessions | Weightage | | | | | | | | | | | | | | | | |
|--------------------------------|--|----------------|-----------|--------------------------|-------------------------------|-------------------|--|--------------------------------|---|-------------------|-----------|-------------|---------------------------|---------------|----------------------|-------------------------------|-----------------------|----|------|
| 1. | Definition, history, present status, and scope of Pharmacognosy Classification of Natural drugs: <ul style="list-style-type: none">● Alphabetical● Taxonomical● Morphological● Pharmacological● Chemical● Chemo-taxonomical Adulteration of drugs of natural origin. WHO guidelines in quality assessment of herbal drugs. | 07 | 15 % | | | | | | | | | | | | | | | | |
| 2. | Introduction to primary and secondary metabolites: Definition, classification, properties and test for identification of Carbohydrates, Proteins, Lipids, Alkaloids, Glycosides, Flavonoids, Tannins, Volatile oil and Resins Basic principles involved in the traditional systems of medicine like: Ayurveda, Siddha, Unani and Homeopathy | 10 | 20 % | | | | | | | | | | | | | | | | |
| 3. | Biological source, chemical constituents, and therapeutic efficacy of the following categories of crude drugs. <table><tr><td>Cardiotonic</td><td>Digitalis</td></tr><tr><td>Drugs acting on GI tract</td><td>Fennel, Ginger, Black Pepper,</td></tr><tr><td>Asafoetida, Senna</td><td></td></tr><tr><td>Drugs acting on nervous system</td><td>Datura, Opium, Tea leaves, Coffee seeds</td></tr><tr><td>Anti-hypertensive</td><td>Rauwolfia</td></tr><tr><td>Anti-Cancer</td><td>Vinca, Podophyllum, Taxus</td></tr><tr><td>Antidiabetics</td><td>Pterocarpus, Gymnema</td></tr><tr><td>Antiseptics and disinfectants</td><td>Neem, Turmeric, Tulsi</td></tr></table> | Cardiotonic | Digitalis | Drugs acting on GI tract | Fennel, Ginger, Black Pepper, | Asafoetida, Senna | | Drugs acting on nervous system | Datura, Opium, Tea leaves, Coffee seeds | Anti-hypertensive | Rauwolfia | Anti-Cancer | Vinca, Podophyllum, Taxus | Antidiabetics | Pterocarpus, Gymnema | Antiseptics and disinfectants | Neem, Turmeric, Tulsi | 08 | 20 % |
| Cardiotonic | Digitalis | | | | | | | | | | | | | | | | | | |
| Drugs acting on GI tract | Fennel, Ginger, Black Pepper, | | | | | | | | | | | | | | | | | | |
| Asafoetida, Senna | | | | | | | | | | | | | | | | | | | |
| Drugs acting on nervous system | Datura, Opium, Tea leaves, Coffee seeds | | | | | | | | | | | | | | | | | | |
| Anti-hypertensive | Rauwolfia | | | | | | | | | | | | | | | | | | |
| Anti-Cancer | Vinca, Podophyllum, Taxus | | | | | | | | | | | | | | | | | | |
| Antidiabetics | Pterocarpus, Gymnema | | | | | | | | | | | | | | | | | | |
| Antiseptics and disinfectants | Neem, Turmeric, Tulsi | | | | | | | | | | | | | | | | | | |



| | | | | |
|-----------|---|---------------------|-----------|------|
| | Antimalarials | Cinchona, Artemisia | | |
| 4. | Basics of Phytochemistry Modern methods of extraction, application of latest techniques like Spectroscopy, chromatography and electrophoresis in the isolation, purification and identification of natural drugs. | | 08 | 20 % |
| 5. | Nutraceuticals: Brief introduction, Regulatory aspects, FSSAI guidelines and therapeutic applications of Nutraceuticals. Different herbs used as a health food. Herbal cosmetics: Sources and description of raw materials of herbal origin used via, fixed oils, waxes, gums colours, perfumes, protective agents, bleaching agents, antioxidants in products such as skin care, hair care and oral hygiene products. | | 07 | 25% |

| 11. Evaluation | | |
|-----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

12. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------------------------|---|------------------------------|------------------|
| 1. | C.K. Kokate, Purohit, Gokhlae. | Text book of Pharmacognosy, Gokhlae (2007), | Nirali Prakashan, Pune, 2007 | 37 th |
| 2. | V.D. Rangari | Textbook of Pharmacognosy & Phytochemistry; Vol 1 | Career publication | - |



| | | | | |
|----|--------------|------------------|---|------|
| 3 | H.Pande | Herbal Cosmetics | Asia Pacific Business press, Inc, New Delhi. | - |
| 4. | Mohammad Ali | Pharmacognosy | CBS Publishers & Distributors, New Delhi 2008 | 2008 |

13. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-------------------------------|--|--|------------------|
| 1. | W. C. Evans, Trease and Evans | Pharmacognosy | W.B. Sounders & Co., London, 2009 | 16 th |
| 2. | WHO | WHO: Quality Control Methods for Medicinal Plant Materials | WHO, Geneva | 1988 |
| 3. | Mukherjee P.W. | Quality Control of Herbal Drugs: An Approach to Evaluation of Botanicals | Business Horizons Publishers, New Delhi, India | 2002 |
| 4. | Agrawal S.S. | Herbal Drug Technology | Orient Blackswan, New Delhi, 2012 | 2 nd |





SWARNIM SCIENCE COLLEGE

MSc Pharmacology Programme

Semester 1

Course Title: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES-I PRACTICAL

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| Core | 256090105 | 4 | 120 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | | - | - | 50% | - | 50% |

Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Develop skills in the Analysis of Pharmacopoeial Compounds and Formulations by different spectroscopy.

CO2: Describe and perform different practical methods for performing and separating of mixtures by paper and thin layer chromatography.

CO3: Develop the ability to document experimental procedures, record observations, and effectively communicate results. Emphasize the importance of maintaining accurate and organized experimental records.

CO4: Understand and apply the fundamental principles of HPLC, including the role of the stationary phase, mobile phase, and detector in achieving high-resolution separations.

CO5: Apply knowledge and hands-on skills on Gas Chromatography Instrumentation Proficiency



| No. | Title | Hours/ week |
|-----|--|----------------|
| 1 | Analysis of pharmacopoeial compounds and their formulations by UV Vis spectrophotometer (Any TWO) | 8 |
| 2 | Simultaneous estimation of multi component containing formulations by UV spectrophotometry (Any TWO) | |
| 3 | Assay of raw materials as per official monographs (Any TWO) | |
| 4 | Determination of absorption maxima and effect of solvents on absorption maxima of organic compounds | |
| 5 | To determine isobestic point of indicator by UV Spectrophotometry | |
| 6 | To determine dissociation constant of indicators by UV spectrophotometry | |
| 7 | Estimation of Sulfanilamide by colorimetry | |
| 8 | Estimation of non coloured drugs by derivatization | |
| 9 | Determination of vitamin C | |
| 10 | Estimation of quinine sulfate by fluorimetry | |
| 11 | Study of quenching of fluorescence | |
| 12 | Separation of amino acids by paper chromatography | |
| 13 | Separation of sugars by thin layer chromatography | |
| 14 | Separation of plant pigments by column chromatography | |
| 15 | Demonstration experiment on HPLC and Gas Chromatography | |

1. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---------------------------------|--|----------------|-----------------|
| 1. | Beckett and Stenlake | Practical Pharmaceutical Chemistry – Vol II | CBS Publishers | 4 th |
| 2. | P. D. Sethi, Dilip Charegaonkar | Identification of Drugs and Pharmaceutical Formulations by Thin Layer Chromatography | CBS Publishers | 2 nd |

2. Reference Books:



| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---|---|-------------------------------|-----------------|
| 1. | P. D. Sethi | Quantitative Analysis of Drugs in Pharmaceutical Formulations | CBS Publishers & Distributors | 3 rd |
| 2. | Doglas A Skoog, F. James Holler, Timothy A. Nieman | Principles of Instrumental Analysis | Eastern press | 5th |
| 3. | F. D. Snell and C. T. Snell | Colorimetric Methods of analysis (Van Nostrand Reinhold Company, N.Y.). | John Wiley and Sons | 3 rd |
| 4. | A.C.Moffat, M. David Osselton, Brain Widdop, L. Y. Galichet | Clarke's Analysis of Drugs and Poisons | Pharmaceutical Press | 3 rd |
| 5. | K. A. Connors | Text book of Pharmaceutical Analysis | John Wiley & Sons | 3 rd |



Swarnnim Startup & Innovation University

SWARNNIM SCIENCE COLLEGE

Master of Science (M.Sc.) Pharmacology; Teaching syllabus & Examination pattern

| Semester 2 | | | | | | | | | | | | | | | | |
|------------|--------------|--|--------|--------------------------|-----|-----------|-------|-------------|---------|-----|---------|----------|---------|----|---------|-------|
| Sr. No. | Subject Code | Subject Name | Credit | Teaching scheme per week | | | | Examination | | | | | | | | Total |
| | | | | Th | Tut | Practical | Total | Internal | | | | External | | | | |
| | | | | | | | | Th | PASSING | Pr | PASSING | Th | PASSING | Pr | PASSING | |
| 1 | 23000013 | Preparing Wider Horizon for entrepreneurship | 3 | 3 | | | 3 | 30 | 12 | | | 70 | 25 | | | 100 |
| 2 | 256090201 | Modern Pharmaceutical analytical techniques II (Common) | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 3 | 256090202 | Regulatory Affairs (Common) | 4 | 4 | | | 4 | 30 | 12 | | | 70 | 25 | | | 100 |
| 4 | 256090203 | Specialization Subject I (Advanced Pharmacology) | 4 | 4 | | | 4 | 30 | 12 | | | 70 | 25 | | | 100 |
| 5 | 256090204 | Specialization practical (Pharmacology and Clinical Research Practical-I) | 12 | - | - | 12 | 12 | - | - | 200 | 80 | - | - | - | - | 200 |
| | | Total | 27 | 15 | - | | 27 | 120 | - | 200 | - | 280 | - | - | - | 600 |





SWARNIM SCIENCE COLLEGE

MSc Pharmacology Programme

Semester 2

Course Title: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES-II

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256090201 | 4 | 40 | 20 % | 10 % | - | 70% | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Explain and demonstrate the principles of Fluorescence spectroscopy and Atomic absorption and emission spectroscopy along with its instrumentation and application

CO2: Describe the theory, principle, instrumentation, and applications of Gas chromatography

CO3: Explain the theory, principle, methodology, pros, cons, and applications of High-performance liquid chromatography

CO4: Understand and get knowledge about the basics of High-performance Thin layer chromatography with its instrumentation and applications.

CO5: Develop theoretical and practical skills for validation and calibration of various analytical instruments

CO6: Outline the HPLC and Bio-analytical method development



2. Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1. | Atomic Absorption And Plasma Emission Spectroscopy: Principle, instrumentation, interferences and applications in Pharmacy Spectrofluorimetry: Theory of Fluorescence, Factors affecting fluorescence, Quenchers, Instrumentation and Applications of fluorescence spectrophotometer | 08 | 20 % |
| 2. | Gas Chromatography: Introduction; Theory and Principle of Gas-Chromatography; Mobile phase, Stationary phases for GSC and GLC; Instrumentation (including temperature programming and derivatization) and applications of GC; Overview of GC-MS. High-Performance Liquid Chromatography: Introduction; Theory, Classification and Principle of HPLC; Mobile phase, Stationary phases for normal and reversed-phase HPLC; Instrumentation (including the significance of guard column) and applications of HPLC; Comparison of HPLC with GC; Overview of LC-MS, LC-MS/MS. | 12 | 25 % |
| 3. | HPTLC Principle; Comparison with HPLC; Instrumentation, applications, advantages, and limitations of HPTLC | 8 | 15 % |
| 4. | Validation and calibration of various instruments used for drug analysis: pH Meter, Conductometer, UV Visible Spectrophotometer, IR Spectrophotometer, HPLC, HPTLC | 4 | 15 % |
| 5. | HPLC Method Development: Basics of separation including Column resolution, Plate number, Plate height, Selectivity factor, Capacity factor, and their optimization. Selection of detector and column Mobile phase optimization including the selection of the correct pH value Bio-analytical HPLC method development and validation: Biological sample preparation: Protein precipitation, liquid-liquid extractions, solid phase extractions, and membrane separations | 8 | 25% |



| 3. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

4. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|--|-------------------|------------------|
| 1. | Dr. B.K Sharma | Instrumental Methods of Chemical Analysis | Krishna Prakashan | 24 th |
| 2. | A.I. Vogel, | Vogel's Textbook of Quantitative Chemical Analysis | Pearson Education | 6 th |
| 3 | D. C. Garrett | Quantitative Analysis of Drugs | Springer US | 3 rd |

5. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|---|-------------------------------|-----------------|
| 1. | P. D. Sethi | Quantitative Analysis of Drugs in Pharmaceutical Formulations | CBS Publishers & Distributors | 3 rd |
| 2. | Robert M Silverstein | Spectrometric Identification of Organic compounds | John Wiley & Sons | 6 th |
| 3. | Willards | Instrumental methods of analysis | CBS publishers | 7 th |
| 4. | Doglas A Skoog, F. James Holler, Timothy A. Nieman | Principles of Instrumental Analysis | Eastern press | 5 th |





SWARNIM SCIENCE COLLEGE

MSc Pharmacology Programme

Semester 2

Course Title: REGULATORY AFFAIRS

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256090202 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1. The Concepts of innovator and generic drugs, drug development process.

CO2. The Regulatory guidance's and guidelines for filing and approval Process

CO3. Preparation of Dossiers and their submission to regulatory agencies in different countries

CO4. Post approval regulatory requirements for actives and drug products

CO5. Submission of global documents in CTD/ eCTD formats

CO6. Clinical trials requirements for approvals for conducting clinical trials, Pharmacovigilance and process of monitoring in clinical trials.



2. Syllabus

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1. | <p>a. Documentation in Pharmaceutical industry: Master formula record, DMF (Drug Master File), distribution records. Generic drugs product development Introduction, Hatch- Waxman act and amendments, CFR (CODE OF FEDERAL REGULATION), drug product performance, invitro, ANDA regulatory approval process, NDA approval process, BE and drug product assessment, in – vivo, scale up process approval changes, post marketing surveillance, outsourcing BA and BE to CRO.</p> <p>b. Regulatory requirement for product approval: API, biologics, novel, therapies obtaining NDA, ANDA for generic drugs ways and means of US registration for foreign drugs</p> | 15 | 37.5% |
| 2 | CMC, post approval regulatory affairs. Regulation for combination Products and medical devices.CTD and ECTD format, industry and FDA liaison. ICH - Guidelines of ICH-Q, S E, M. Regulatory requirements of EU, MHRA, TGA and ROW countries. | 10 | 25% |
| 3 | Non clinical drug development: Global submission of IND, NDA, ANDA. Investigation of medicinal products dossier, dossier (IMPD) and investigator brochure (IB) | 7 | 17.5% |
| 4 | Clinical trials: Developing clinical trial protocols. Institutional review board/ independent ethics committee Formulation and working procedures informed Consent process and procedures. HIPAA- new, requirement to clinical study process, pharmacovigilance safety monitoring in clinical trials. | 8 | 20% |



| 3. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

4. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------------------------|---|--------------------------------|----------------|
| 1. | by Ira R. Berry and Robert P.Martin, | The Pharmaceutical Regulatory Process, Second Edition Edited Drugs and the Pharmaceutical Sciences, | Informa Health care Publishers | Vol.185 |
| 2. | Fay A.Rozovsky and Rodney K. Adams | Clinical Trials and Human Research: A Practical Guide to Regulatory Compliance | - | - |

5. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------------|--|--|-----------------|
| 1. | Richard A Guarino, | New Drug Approval Process: Accelerating Global Registrations | Drugs and the Pharmaceutical Sciences, Vol.190 | 5 th |
| 2. | Leon Shargel and IsaderKaufer | Generic Drug Product Development, Solid Oral Dosage forms | Marcel Dekker series, | Vol.143 |





SWARNIM SCIENCE COLLEGE

MSc Programme

MSc Pharmacology Semester 2

Course Title: Advanced Pharmacology

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256090203 | 4 | 40 | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of syllabus, students can able to

CO1. Describe the pharmacology of drugs acting on parasympathetic and sympathetic nervous system.

CO2. Illustrate the pharmacological aspects of drugs acting on central nervous system, local anaesthetics, opioid and non-opioid analgesics.

CO3. Classify drugs acting on cardiovascular-haemopoietic system and discuss their pharmacology.

CO4. Understand the basic concepts and pharmacology of diuretics, anti-histamines and drugs used in the treatment of asthma, ulcer, diabetes and hyperthyroidism.

CO5. Explain the basics of chemotherapy along with the detailed study of Antibiotics.

CO6. Summarize the drug classes and their pharmacological role in cancer, tuberculosis, malaria, fungal and viral infections.



2. Syllabus:

| Module | Contents | No of Sessions | Weightage |
|----------|---|----------------|-----------|
| 1 | Pharmacology of drugs acting on Autonomic nervous system a) Parasympathomimetics and lytics b) Sympathomimetics and lytics c) Agents affecting neuromuscular junction | 05 | 12.5 % |
| 2 | Pharmacology of drugs acting on Central nervous system a) General and local anesthetics b) Sedatives and hypnotics c) Anti-depressants d) Anti-psychotic agents e) Antiepileptic agents f) Drugs used for the treatment of neurodegenerative diseases g) Narcotic and non-narcotic analgesics | 09 | 22.5 % |
| 3 | Pharmacology of drugs acting on Cardiovascular system a) Antihypertensives b) Anti-ischemics c) Anti- arrhythmics d) Drugs for heart failure e) Anti-hyperlipidemic f) Anticoagulants g) Fibrinolytics and antiplatelet drugs | 08 | 20 % |
| 4 | Pharmacology of following drugs a) Diuretics b) Anti-asthmatic agents c) Anti-ulcer drugs d) Anti-diabetic drugs e) Anti-thyroid drugs f) Anti-histamines | 07 | 17.5 % |



| | | | |
|----------|---|-----------|--------------|
| 5 | Chemotherapeutic agents a) Anti-bacterial agents: Sulphonamides, Fluoroquinolones, Penicillins, Cephalosporins, Tetracyclines, Chloramphenicol, Aminoglycosides b) Anti-fungal agents c) Anti-viral agents d) Anti-malarial agents e) Anti-tubercle agents f) Anti-cancer agents | 11 | 27.5% |
|----------|---|-----------|--------------|

3. Evaluation

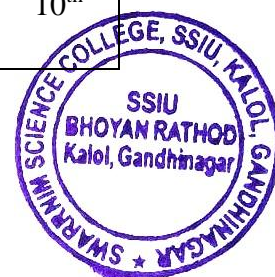
| | | |
|---|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

4. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------------------------|------------------------------------|---|-----------------|
| 1. | Bikash Medhi, Ajay Prakash | Advanced Pharmacology | PharmaMed Press / BSP Books | 2 nd |
| 2. | Padmaja Udaykumar | Pharmacology for Pharmacy students | CBC publishers and Distributors Pvt. Ltd. | 1 st |
| 3. | HL Sharma, KK Sharma | Principles of Pharmacology | Paras Medical Publisher | 3 rd |

5. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--|--|--|------------------|
| 1. | K. D. Tripathi | Essentials of Medical Pharmacology | Jaypee Brothers Medical Publishers Ltd | 7 th |
| 2. | Bjorn Knollmann, Laurence Brunton | Goodman and Gillman's, The Pharmacological Basis of Therapeutics | McGraw-Hill Education | 14 th |
| 3 | Rang HP, Dale MM, Ritter JM, Flower RJ | Rang and Dale's Pharmacology, | Churchil Livingstone Elsevier | 10 th |





SWARNIM SCIENCE COLLEGE

MSc Pharmacology Programme

Semester 2

Course Title: PHARMACOLOGY AND CLINICAL RESEARCH PRACTICAL-I

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256090204 | 4 | 120 | - | - | 100% | - | - |
| | | | | | | | | |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1: summarize the importance and maintenance of lab animals along with various techniques of drug administration, blood collection, anesthesia- euthanasia and handling of lab animals.

CO2: identify analgesic, skeletal muscle relaxant, anticonvulsant, CNS depressant and CNS stimulant effect of drugs using different instruments and Ex-Pharm software.

CO3: evaluate and compare miotic, mydriatic and local anaesthetic effects of drugs using Ex-Pharm software.

CO4: analyze prescriptions for their format, essentiality and rationality.

CO5: write SOAP (Subjective, Objective, Assessment and Plan) notes for the given clinical cases of selected common diseases.

CO6: counsel the patients about the disease conditions, uses of drugs, methods of handling and administration of drugs, life-style modifications, and monitoring parameters.



2. Syllabus

| No. | Title | Hours /week |
|--------|---|-------------|
| PART-A | | 8 |
| 1 | Introduction to experimental pharmacology and common laboratory animals. | |
| 2 | Maintenance of laboratory animals as per CPCSEA guidelines. | |
| 3 | Techniques of drug administration, blood collection, anesthesia- euthanasia and handling of laboratory animals. | |
| 4 | Evaluation of analgesic drugs using Eddy’s Hot plate method. | |
| 5 | Evaluation of skeletal muscle relaxant activity using rota rod apparatus. | |
| 6 | Evaluation of CNS stimulant and depressant drugs on locomotor activity of rat using photoactometer. | |
| 7 | Evaluation of anticonvulsant effect of drug by MES and PTZ method. | |
| 8 | Effect of drugs on rabbit eye. | |
| PART-B | | |
| 9 | Introduction to format of prescription, essentiality and rationality. | |
| 10 | To audit given prescription for format of prescription, essentiality and rationality. | |
| 11 | To audit given prescription for format of prescription, essentiality and rationality. | |
| 12 | Preparation and discussion of SOAP (Subjective, Objective, Assessment and Plan) notes for clinical cases of CNS disorders. | |
| 13 | Preparation and discussion of SOAP (Subjective, Objective, Assessment and Plan) notes for clinical cases of cardiovascular disorders. | |
| 14 | Preparation and discussion of SOAP (Subjective, Objective, Assessment and Plan) notes for clinical cases of respiratory disorders. | |
| 15 | Case studies related to patient counselling. | |

Note: All laboratory techniques and animal experiments are demonstrated by simulated experiments by softwares and videos.



3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-------------------------------------|---|--------------------------|------------------|
| 1. | Dr. R.K. Goyal | Practicals in Pharmacology | B.S. Shah Prakashan | 11 th |
| 2. | Roger Walker and Cate Whittlesea | Clinical pharmacy and therapeutics | Churchill Livingstone | 5 th |
| 3. | Kulkarni S.K. | Handbook of experimental pharmacology. | Vallabh Prakashan | 3 rd |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--|--|---------------------------------------|-----------------|
| 1. | Bikash Medhi, Ajay Prakash | Practical Manual of Experimental and Clinical Pharmacology | Jaypee Brothers Medical Publishers | 2 nd |
| 2. | Eric T Herfindal, Dick R Gourley, Joseph L Hirschman | Textbook of therapeutics, Drug and disease management. | Lippincott Williams and Wilkins | 6 th |
| 3. | M. N. Ghosh | Fundamentals of Experimental Pharmacology. | Hilton & Company Kolkata. | 6 th |



Swarnim Startup & Innovation University

SWARRNIM SCIENCE COLLEGE

Master of Science (M.Sc.) Quality Assurance; Teaching syllabus & examination pattern

Semester 1

| Sr. No. | Subject Code | Subject Name | Credit | Teaching scheme per week | | | | Examination | | | | | | | | Total |
|---------|--------------|--|--------|--------------------------|-----|-----------|-------|-------------|---------|-----|---------|----------|---------|----|---------|-------|
| | | | | Th | Tut | Practical | Total | Internal | | | | External | | | | |
| | | | | | | | | Th | PASSING | Pr | PASSING | Th | PASSING | Pr | PASSING | |
| 1 | 256080101 | Modern Pharmaceutical analytical techniques I | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 2 | 256080102 | Pharmaceutical Dosage forms | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 3 | 256080103 | Fundamentals of pharmacology and clinical research | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 4 | 256080104 | Concepts of natural products | 4 | 4 | | | 4 | 30 | 12 | | | 70 | 25 | | | 100 |
| 5 | 256080105 | Common Practicals I | 8 | - | - | 12 | 12 | | | 100 | 40 | - | - | - | - | 100 |
| 6 | | Total | 24 | 16 | - | 12 | 28 | 120 | - | 100 | - | 280 | - | - | - | 500 |





SWARNIM SCIENCE COLLEGE

MSc Quality Assurance Programme

Semester 1

Course Title: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES-I

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| Core | 256080101 | 4 | 40 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Explain and demonstrate the principles of UV-visible spectroscopy along with its instrumentation and application

CO2: Describe the theory, principle, instrumentation, and applications of IR spectroscopy

CO3: Explain the theory, application, and instrumentation including ionization techniques, analysers, and detectors. Also understand the different ions, fragmentation rules, and rearrangements.

CO4: Understand and get knowledge about the basics of NMR and the different terms involved in it with an overview of C13NMR.

CO5: Discuss and classify Chromatography and its techniques and explain the theory, principle, methodology, pros, cons, and applications of Adsorption and partition, column, TLC and paper chromatography, ion exchange, affinity, gel chromatography



CO6: Outline the theory, instrumentation, and parameters of Gas chromatography as well as HPLC along with its advantages, disadvantages, and applications.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1. | UV-Visible Spectroscopy: Brief review of electromagnetic spectrum and absorption of radiations. The chromophore concept, absorption law, and limitations. Theory of electronic spectroscopy, absorption by organic molecules, choice of solvent, and solvent effects. Applications of UV-visible spectroscopy, multi-component assay, difference spectra and derivative spectra | 08 | 20 % |
| 2. | IR Spectroscopy: Theory of absorption of Infrared radiation by molecules; Molecular vibrations; Factors influencing vibrational frequencies; Calculation of vibrational frequencies (Hooke's law); Sample handling techniques; Instrumentation (Dispersion and FTIR spectrometer) and applications of IR Spectroscopy; Calibration of IR Spectrophotometer as per Pharmacopoeia | 08 | 20 % |
| 3. | Mass Spectrometry: Theory; Ionization techniques, Ion separating techniques; Different types of ions and their significance in mass spectra, Fragmentation rules and rearrangements; Instrumentation and applications of mass spectrometry | 08 | 15 % |
| 4. | Nuclear Magnetic Resonance spectroscopy: Fundamental Principles - nuclear spin, magnetic moment; Proton NMR spectroscopy - theory, chemical shift and factors affecting chemical shift, spin-spin coupling, coupling constant, relaxation process, Instrumentation and applications of PMR; Brief overview of C13 NMR | 08 | 20 % |
| 5. | Chromatography: Principle, apparatus, instrumentation, chromatographic parameters, factors affecting resolution and | 06 | 25% |



| | | | |
|--|--|--|--|
| | applications of the following: a) Paper chromatography b) Thin Layer chromatography c) Ion exchange chromatography d) Column chromatography e) Gas chromatography f) High Performance Liquid chromatography g) Affinity chromatography | | |
|--|--|--|--|

| 2. Evaluation | | |
|---------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------------|--|-------------------|------------------|
| 1. | Dr. B.K Sharma | Instrumental Methods of Chemical Analysis | Krishna Prakashan | 24 th |
| 2. | A.I. Vogel, | Vogel's Textbook of Quantitative Chemical Analysis | Pearson Education | 6 th |
| 3 | D. C. Garrett | Quantitative Analysis of Drugs | Springer US | 3 rd |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------------------|---|-------------------------------|-----------------|
| 1. | P. D. Sethi | Quantitative Analysis of Drugs in Pharmaceutical Formulations | CBS Publishers & Distributors | 3 rd |
| 2. | Robert M Silverstein | Spectrometric Identification of Organic compounds - | John Wiley & Sons | 6th |
| 3. | Willards | Instrumental methods of analysis | CBS publishers | 7th |



| | | | | |
|----|---|--|---------------|-----|
| 4. | Doglas A Skoog, F. James Holler, Timothy A. Nieman | Principles of Instrumental Analysis - | Eastern press | 5th |
|----|---|--|---------------|-----|





SWARRNIM SCIENCE COLLEGE

MSc Quality Assurance Programme

Semester 1

Course Title: PHARMACEUTICAL DOSAGE FORMS

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256080102 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course the student should be able to:

CO1: Outline basics of different dosage forms like tablet capsules, aerosol and parenteral.

CO2: Design and develop various conventional dosage forms.

CO3: Discuss the basic requirement of cGMP and industrial management.

CO4: Categories the biopharmaceutical consideration for product development

CO5: Prioritise the factor affecting drug product performance.

CO6: Illustrate the requirement of scale up and post approval changes.



Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1. | <p>Tablets: a. Introduction, ideal characteristics of tablets, classification of tablets. Excipients, Formulation of tablets, granulation methods, compression and processing problems. Equipment and tablet tooling.</p> <p>Capsules: a. Hard gelatin capsules: Introduction, Production of hard gelatin capsule shells. Size of capsules, Filling, finishing and special techniques of formulation of hard gelatin capsules, manufacturing defects. b. Soft gelatin capsules: Nature of shell and capsule content, size of capsules, importance of base adsorption and minim/gram factors, production, in process and final product quality control tests. Packing, storage and stability testing of soft gelatin capsules</p> | 08 | 20 % |
| 2. | <p>Parenteral Products: a. Definition, types, advantages and limitations. Preformulation factors and essential requirements, vehicles, additives, b. Production procedure, production facilities and controls, aseptic processing c. Formulation of injection. d. Containers and closures selection, filling and sealing of ampoules, vials and infusion fluids.</p> <p>Pharmaceutical Aerosols: Definition, propellants, containers, valves, types of aerosol systems; formulation and manufacture of aerosols; Evaluation of aerosols; Quality control and stability studies</p> | 08 | 20 % |
| 3. | <p>Biopharmaceutic considerations in drug product design and In Vitro Drug Product Performance: Introduction, biopharmaceutic factors affecting drug bioavailability, rate-limiting steps in drug absorption, physicochemical nature of the drug formulation factors affecting drug product performance, in vitro: dissolution and drug release testing, compendial methods of dissolution, alternative methods of dissolution testing, meeting dissolution requirements, problems of variable control in dissolution testing performance of drug products. In vitro–in vivo correlation, dissolution profile comparisons, drug product stability, considerations in the design of a drug product.</p> | 08 | 20 % |
| 4. | <p>Drug Product Performance, In Vivo: Bioavailability and Bioequivalence: drug product performance, purpose of</p> | 08 | 20 % |



| | | | |
|----|--|----|-----|
| | bioavailability studies, relative and absolute availability. methods for assessing bioavailability, bioequivalence studies, design and evaluation of bioequivalence studies, study designs, crossover study designs, evaluation of the data, bioequivalence example, study submission and drug review process. biopharmaceutics classification system, methods. Permeability: In-vitro, in-situ and In-vivo methods. generic biologics (biosimilar drug products), clinical significance of bioequivalence studies, special concerns in bioavailability and bioequivalence studies, generic substitution | | |
| 5. | cGMP & Industrial Management: Objectives and policies of current good manufacturing practices, layout of buildings, services, equipment and their maintenance Production management: Production organization, materials management, handling and transportation, inventory management and control, production and planning control, Sales forecasting, budget and cost control, industrial and personal relationship. | 06 | 15% |
| 6. | Pilot plant scale up techniques: General considerations – including significance of personnel requirements, space requirements, raw materials, Pilot plant scale up considerations for solids, liquid orals, semi solids and relevant documentation, SUPAC guidelines, Introduction to platform technology | 04 | 5% |

| 2. Evaluation | | |
|---------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|------------------------|--|-------------------------------|---------|
| 1. | Lachmann and Libermann | Theory and Practice of Industrial Pharmacy | Publisher Lea & Febiger, U.S. | 3rd |



| | | | | |
|----|-------------------------|--|-------------------|-----------------|
| 2. | Sidney H. Willig. | Good manufacturing practices for Pharmaceuticals: A plan for total quality control | Marcel Dekker Inc | 2 nd |
| 3 | Gillbert and S. Banker. | Modern Pharmaceutics | CRC press | 4 th |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------|-------------------------------------|-----------------------------|-----------------|
| 1. | P.P. Sharma. | How to practice GMPs | Vandhana Publications, Agra | 5 th |
| 2. | Rawlins. | Bentley's Textbook of Pharmaceutics | Elsevier | Old |





SWARNIM SCIENCE COLLEGE

MSc Quality Assurance Programme

Semester 1

Course Title: FUNDAMENTALS OF PHARMACOLOGY AND CLINICAL RESEARCH

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| Core | 256080103 | 4 | 40 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | | 20 % | 10 % | - | 70 % | - |

Course Outcomes

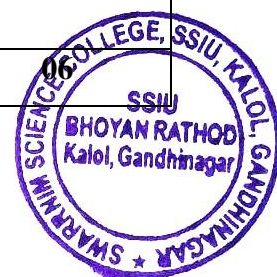
Upon completion of syllabus, students can able to

- CO1. Identify various routes of administration of drugs and their pharmacokinetic processes.
- CO2. Understand the concepts of drug action and mechanisms involved along with basics of cell biology and secondary messengers.
- CO3. Summarize the basic principles of transmission including transmission of neurotransmitters of autonomic and central nervous system.
- CO4. Describe the principles and applications of various techniques used in basic research.
- CO5. Demonstrate about the laboratory animals, their maintenance as per the guidelines, basic knowledge of preclinical and toxicological evaluation processes.
- CO6. Illustrate the basic fundamentals of clinical research.



1. Syllabus:

| Module | Contents | No of Sessions |
|----------|--|----------------|
| 1 | General Pharmacology Routes of Drug Administration Pharmacokinetics: The dynamics of drug absorption, distribution, biotransformation and elimination. Significance of protein binding. | 05 |
| 2 | Cell biology and cell signalling: Structure and functions of cell and its organelles, Transport across the cell membrane. Classification of receptor family and molecular structure ligand gated ion channels; G-protein coupled receptors, tyrosine kinase receptors and nuclear receptors. Secondary messengers: cyclic AMP, cyclic GMP, calcium ion, inositol 1, 4, 5-trisphosphate, (IP3), NO, and diacylglycerol. | 06 |
| 3 | Neurotransmission a. General aspects and steps involved in neurotransmission. b. Neurohumoral transmission in autonomic nervous system c. Neurohumoral transmission in central nervous system | 05 |
| 4 | Principles and applications of following tools DNA electrophoresis, Polymerase chain reaction, SDS page, ELISA, Western blotting technique, Recombinant DNA technology and gene therapy. | 08 |
| 5 | Preclinical and toxicological screening Common laboratory animals, Transgenic animals, CPCSEA guidelines to conduct experiments on animals. Anaesthesia and euthanasia of experimental animals. General principles of preclinical screening. Basic definition and types of toxicology. ICH guidelines for conducting toxicity studies. Oral and dermal toxicity studies as per OECD guidelines. General principles of treatment of poisoning. | 10 |
| 6 | Basics of clinical research | |



| | | |
|--|---|--|
| | a. Introduction to Clinical research. b. Adverse drug reactions: Definition, Terminologies and types of ADR. Causality assessment, Severity and seriousness assessment. c. Drug interactions (Pharmacokinetic and Pharmacodynamic interactions) d. Phases of clinical trials e. Origin and Principles of ICH-GCP (Good Clinical Practice) guidelines f. Institutional Review Board | |
|--|---|--|

5. Evaluation

| | | |
|---|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

6. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---------------------------------|------------------------------------|--|-----------------|
| 1. | K. D. Tripathi | Essentials of Medical Pharmacology | Jaypee Brothers Medical Publishers Ltd | 7 th |
| 2. | Julia Lloyd and Ann Raven | Handbook of clinical Research | Churchill Livingstone | 2 nd |
| 3. | Karen E. Stine, Thomas M. Brown | Principles of toxicology | CRC Press | 3 rd |

7. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---------------------------------------|--|-----------------------|------------------|
| 1. | Bjorn Knollmann, Laurence Brunton | Goodman and Gillman's, The Pharmacological Basis of Therapeutics | McGraw-Hill Education | 14 th |
| 2. | David Machin, Simon Day, Sylvan Green | Textbook of Clinical Trials | John Wiley and Sons | 2 nd |





SWARNIM SCIENCE COLLEGE

MSc Quality Assurance Programme

Semester 1

Course Title: CONCEPTS OF NATURAL PRODUCTS

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256080104 | 4 | 40 | 20 % | 10 % | - | 70 % | - |

8. Course Outcomes

Upon completion of this course the student should be able to:

CO1: Explain medicinal importance of natural drugs

CO2: Illustrate the importance of quality control of drugs of natural origin.

CO3: Describe importance of primary and secondary metabolites of medicinal plants.

CO4: Discuss the principles of alternative system of medicines.

CO5: Demonstrate various extraction and estimation techniques of Phytoconstituents.

CO6: Brief outline the uses of herbs in nutraceuticals and cosmeceuticals.



Syllabus

| Module | Contents | No of Sessions | Weightage | | | | | | | | | | | | | | | | |
|--------------------------------|--|----------------|-----------|--------------------------|-------------------------------|-------------------|--|--------------------------------|---|-------------------|-----------|-------------|---------------------------|---------------|----------------------|-------------------------------|-----------------------|----|------|
| 1. | Definition, history, present status, and scope of Pharmacognosy Classification of Natural drugs: <ul style="list-style-type: none">● Alphabetical● Taxonomical● Morphological● Pharmacological● Chemical● Chemo-taxonomical Adulteration of drugs of natural origin. WHO guidelines in quality assessment of herbal drugs. | 07 | 15 % | | | | | | | | | | | | | | | | |
| 2. | Introduction to primary and secondary metabolites: Definition, classification, properties and test for identification of Carbohydrates, Proteins, Lipids, Alkaloids, Glycosides, Flavonoids, Tannins, Volatile oil and Resins Basic principles involved in the traditional systems of medicine like: Ayurveda, Siddha, Unani and Homeopathy | 10 | 20 % | | | | | | | | | | | | | | | | |
| 3. | Biological source, chemical constituents, and therapeutic efficacy of the following categories of crude drugs. <table><tr><td>Cardiotonic</td><td>Digitalis</td></tr><tr><td>Drugs acting on GI tract</td><td>Fennel, Ginger, Black Pepper,</td></tr><tr><td>Asafoetida, Senna</td><td></td></tr><tr><td>Drugs acting on nervous system</td><td>Datura, Opium, Tea leaves, Coffee seeds</td></tr><tr><td>Anti-hypertensive</td><td>Rauwolfia</td></tr><tr><td>Anti-Cancer</td><td>Vinca, Podophyllum, Taxus</td></tr><tr><td>Antidiabetics</td><td>Pterocarpus, Gymnema</td></tr><tr><td>Antiseptics and disinfectants</td><td>Neem, Turmeric, Tulsi</td></tr></table> | Cardiotonic | Digitalis | Drugs acting on GI tract | Fennel, Ginger, Black Pepper, | Asafoetida, Senna | | Drugs acting on nervous system | Datura, Opium, Tea leaves, Coffee seeds | Anti-hypertensive | Rauwolfia | Anti-Cancer | Vinca, Podophyllum, Taxus | Antidiabetics | Pterocarpus, Gymnema | Antiseptics and disinfectants | Neem, Turmeric, Tulsi | 08 | 20 % |
| Cardiotonic | Digitalis | | | | | | | | | | | | | | | | | | |
| Drugs acting on GI tract | Fennel, Ginger, Black Pepper, | | | | | | | | | | | | | | | | | | |
| Asafoetida, Senna | | | | | | | | | | | | | | | | | | | |
| Drugs acting on nervous system | Datura, Opium, Tea leaves, Coffee seeds | | | | | | | | | | | | | | | | | | |
| Anti-hypertensive | Rauwolfia | | | | | | | | | | | | | | | | | | |
| Anti-Cancer | Vinca, Podophyllum, Taxus | | | | | | | | | | | | | | | | | | |
| Antidiabetics | Pterocarpus, Gymnema | | | | | | | | | | | | | | | | | | |
| Antiseptics and disinfectants | Neem, Turmeric, Tulsi | | | | | | | | | | | | | | | | | | |



| | | | | |
|-----------|---|---------------------|-----------|------|
| | Antimalarials | Cinchona, Artemisia | | |
| 4. | Basics of Phytochemistry Modern methods of extraction, application of latest techniques like Spectroscopy, chromatography and electrophoresis in the isolation, purification and identification of natural drugs. | | 08 | 20 % |
| 5. | Nutraceuticals: Brief introduction, Regulatory aspects, FSSAI guidelines and therapeutic applications of Nutraceuticals. Different herbs used as a health food. Herbal cosmetics: Sources and description of raw materials of herbal origin used via, fixed oils, waxes, gums colours, perfumes, protective agents, bleaching agents, antioxidants in products such as skin care, hair care and oral hygiene products. | | 07 | 25% |

| 9. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

10. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------------------------|---|------------------------------|------------------|
| 1. | C.K. Kokate, Purohit, Gokhlae. | Text book of Pharmacognosy, Gokhlae (2007), | Nirali Prakashan, Pune, 2007 | 37 th |
| 2. | V.D. Rangari | Textbook of Pharmacognosy & Phytochemistry; Vol 1 | Career publication | - |



| | | | | |
|----|--------------|------------------|---|------|
| 3 | H.Pande | Herbal Cosmetics | Asia Pacific Business press, Inc, New Delhi. | - |
| 4. | Mohammad Ali | Pharmacognosy | CBS Publishers & Distributors, New Delhi 2008 | 2008 |

11. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-------------------------------|--|--|------------------|
| 1. | W. C. Evans, Trease and Evans | Pharmacognosy | W.B. Sounders & Co., London, 2009 | 16 th |
| 2. | WHO | WHO: Quality Control Methods for Medicinal Plant Materials | WHO, Geneva | 1988 |
| 3. | Mukherjee P.W. | Quality Control of Herbal Drugs: An Approach to Evaluation of Botanicals | Business Horizons Publishers, New Delhi, India | 2002 |
| 4. | Agrawal S.S. | Herbal Drug Technology | Orient Blackswan, New Delhi, 2012 | 2 nd |





SWARNIM SCIENCE COLLEGE

MSc Quality Assurance Programme

Semester 1

Course Title: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES-I PRACTICAL

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256080105 | 4 | 120 | | | | | |
| | | | | - | - | 50% | - | 50% |

Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Develop skills in the Analysis of Pharmacopoeial Compounds and Formulations by different spectroscopy.

CO2: Describe and perform different practical methods for performing and separating of mixtures by paper and thin layer chromatography.

CO3: Develop the ability to document experimental procedures, record observations, and effectively communicate results. Emphasize the importance of maintaining accurate and organized experimental records.

CO4: Understand and apply the fundamental principles of HPLC, including the role of the stationary phase, mobile phase, and detector in achieving high-resolution separations.

CO5: Apply knowledge and hands-on skills on Gas Chromatography Instrumentation Proficiency



| No. | Title | Hours/ week |
|-----|--|----------------|
| 1 | Analysis of pharmacopoeial compounds and their formulations by UV Vis spectrophotometer (Any TWO) | 8 |
| 2 | Simultaneous estimation of multi component containing formulations by UV spectrophotometry (Any TWO) | |
| 3 | Assay of raw materials as per official monographs (Any TWO) | |
| 4 | Determination of absorption maxima and effect of solvents on absorption maxima of organic compounds | |
| 5 | To determine isobestic point of indicator by UV Spectrophotometry | |
| 6 | To determine dissociation constant of indicators by UV spectrophotometry | |
| 7 | Estimation of Sulfanilamide by colorimetry | |
| 8 | Estimation of non-coloured drugs by derivatization | |
| 9 | Determination of vitamin C | |
| 10 | Estimation of quinine sulfate by fluorimetry | |
| 11 | Study of quenching of fluorescence | |
| 12 | Separation of amino acids by paper chromatography | |
| 13 | Separation of sugars by thin layer chromatography | |
| 14 | Separation of plant pigments by column chromatography | |
| 15 | Demonstration experiment on HPLC and Gas Chromatography | |

1. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---------------------------------|--|----------------|-----------------|
| 1. | Beckett and Stenlake | Practical Pharmaceutical Chemistry – Vol II | CBS Publishers | 4 th |
| 2. | P. D. Sethi, Dilip Charegaonkar | Identification of Drugs and Pharmaceutical Formulations by Thin Layer Chromatography | CBS Publishers | 2 nd |

2. Reference Books:



| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---|---|-------------------------------|-----------------|
| 1. | P. D. Sethi | Quantitative Analysis of Drugs in Pharmaceutical Formulations | CBS Publishers & Distributors | 3 rd |
| 2. | Doglas A Skoog, F. James Holler, Timothy A. Nieman | Principles of Instrumental Analysis | Eastern press | 5th |
| 3. | F. D. Snell and C. T. Snell | Colorimetric Methods of analysis (Van Nostrand Reinhold Company, N.Y.). | John Wiley and Sons | 3 rd |
| 4. | A.C.Moffat, M. David Osselton, Brain Widdop, L. Y. Galichet | Clarke's Analysis of Drugs and Poisons | Pharmaceutical Press | 3 rd |
| 5. | K. A. Connors | Text book of Pharmaceutical Analysis | John Wiley & Sons | 3 rd |





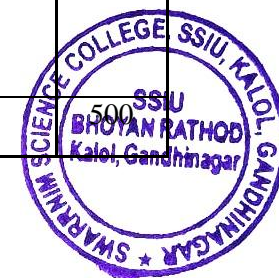
Swarnim Startup & Innovation University

SWARNIM SCIENCE COLLEGE

Master of Science (M.Sc.) Quality Assurance; Teaching syllabus & examination pattern

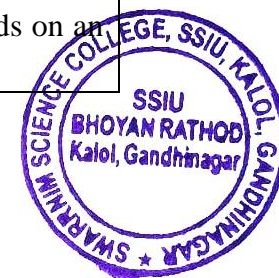
Semester 2

| Sr. No. | Subject Code | Subject Name | Credit | Teaching scheme per week | | | | Examination | | | | | | | | Total |
|---------|--------------|---|--------|--------------------------|-----|-----------|-------|-------------|---------|-----|---------|----------|---------|----|---------|-------|
| | | | | Th | Tut | Practical | Total | Internal | | | | External | | | | |
| | | | | | | | | Th | PASSING | Pr | PASSING | Th | PASSING | Pr | PASSING | |
| 1 | 256080201 | Modern Pharmaceutical analytical techniques II | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 2 | 256080202 | Regulatory Affairs | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 3 | 256080203 | Pharmaceutical Validation and Quality Management system | 4 | 4 | - | - | 4 | 30 | 12 | - | - | 70 | 25 | - | - | 100 |
| 5 | 256080204 | Pharmaceutical Quality Assurance Practicals II | 8 | - | - | 12 | 12 | - | - | 200 | 80 | - | - | - | - | 200 |
| 6 | | Total | 20 | 12 | - | 12 | 24 | 90 | - | 200 | - | 210 | - | 0 | - | |



Program Outcomes (POs)

| |
|---|
| 1. Pharmacy Knowledge: Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; and manufacturing practices. |
| 2. Planning Abilities: Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines. |
| 3. Problem analysis: Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions. |
| 4. Modern tool usage: Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations. |
| 5. Leadership skills: Understand and consider the human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being. |
| 6. Professional Identity: Understand, analyze and communicate the value of their professional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees). |
| 7. Pharmaceutical Ethics: Honour personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions. |
| 8. Communication: Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions. |
| 9. The Pharmacist and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice. |
| 10. Environment and sustainability: Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development. |
| 11. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis. |





SWARNIM SCIENCE COLLEGE

MSc Quality Assurance Programme

Semester 2

Course Title: MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES-II

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256080201 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Explain and demonstrate the principles of Fluorescence spectroscopy and Atomic absorption and emission spectroscopy along with its instrumentation and application

CO2: Describe the theory, principle, instrumentation, and applications of Gas chromatography

CO3: Explain the theory, principle, methodology, pros, cons, and applications of High-performance liquid chromatography

CO4: Understand and get knowledge about the basics of High-performance Thin layer chromatography with its instrumentation and applications.

CO5: Develop theoretical and practical skills for validation and calibration of various analytical instruments

CO6: Outline the HPLC and Bio-analytical method development



Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1. | Atomic Absorption And Plasma Emission Spectroscopy: Principle, instrumentation, interferences and applications in Pharmacy Spectrofluorimetry: Theory of Fluorescence, Factors affecting fluorescence, Quenchers, Instrumentation and Applications of fluorescence spectrophotometer | 08 | 20 % |
| 2. | Gas Chromatography: Introduction; Theory and Principle of Gas-Chromatography; Mobile phase, Stationary phases for GSC and GLC; Instrumentation (including temperature programming and derivatization) and applications of GC; Overview of GC-MS. High-Performance Liquid Chromatography: Introduction; Theory, Classification and Principle of HPLC; Mobile phase, Stationary phases for normal and reversed-phase HPLC; Instrumentation (including the significance of guard column) and applications of HPLC; Comparison of HPLC with GC; Overview of LC-MS, LC-MS/MS. | 12 | 25 % |
| 3. | HPTLC Principle; Comparison with HPLC; Instrumentation, applications, advantages, and limitations of HPTLC | 8 | 15 % |
| 4. | Validation and calibration of various instruments used for drug analysis: pH Meter, Conductometer, UV Visible Spectrophotometer, IR Spectrophotometer, HPLC, HPTLC | 4 | 15 % |
| 5. | HPLC Method Development: Basics of separation including Column resolution, Plate number, Plate height, Selectivity factor, Capacity factor, and their optimization. Selection of detector and column Mobile phase optimization including the selection of the correct pH value Bio-analytical HPLC method development and validation: Biological sample preparation: Protein precipitation, liquid-liquid extractions, solid phase extractions, and membrane separations | 8 | 25% |



| 2. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|--|-------------------|------------------|
| 1. | Dr. B.K Sharma | Instrumental Methods of Chemical Analysis | Krishna Prakashan | 24 th |
| 2. | A.I. Vogel, | Vogel's Textbook of Quantitative Chemical Analysis | Pearson Education | 6 th |
| 3 | D. C. Garrett | Quantitative Analysis of Drugs | Springer US | 3 rd |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|---|-------------------------------|-----------------|
| 1. | P. D. Sethi | Quantitative Analysis of Drugs in Pharmaceutical Formulations | CBS Publishers & Distributors | 3 rd |
| 2. | Robert M Silverstein | Spectrometric Identification of Organic compounds - | John Wiley & Sons | 6th |
| 3. | Willards | Instrumental methods of analysis | CBS publishers | 7th |
| 4. | Doglas A Skoog, F. James Holler, Timothy A. Nieman | Principles of Instrumental Analysis - | Eastern press | 5th |



Course Title: REGULATORY AFFAIRS

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256080202 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1. The Concepts of innovator and generic drugs, drug development process.

CO2. The Regulatory guidance's and guidelines for filing and approval Process

CO3. Preparation of Dossiers and their submission to regulatory agencies in different countries

CO4. Post approval regulatory requirements for actives and drug products

CO5. Submission of global documents in CTD/ eCTD formats

CO6. Clinical trials requirements for approvals for conducting clinical trials, Pharmacovigilance and process of monitoring in clinical trials.



| Sr. No | Course Content | Total Hrs |
|--------|---|-----------|
| 1. | <p>a. Documentation in Pharmaceutical industry: Master formula record, DMF (Drug Master File), distribution records. Generic drugs product development Introduction, Hatch- Waxman act and amendments, CFR (CODE OF FEDERAL REGULATION), drug product performance, invitro, ANDA regulatory approval process, NDA approval process, BE and drug product assessment, in –vivo, scale up process approval changes, post marketing surveillance, outsourcing BA and BE to CRO.</p> <p>b. Regulatory requirement for product approval: API, biologics, novel, therapies obtaining NDA, ANDA for generic drugs ways and means of US registration for foreign drugs</p> | 15 |
| 2 | CMC, post approval regulatory affairs. Regulation for combination Products and medical devices.CTD and ECTD format, industry and FDA liaison. ICH - Guidelines of ICH-Q, S E, M. Regulatory requirements of EU, MHRA, TGA and ROW countries. | 10 |
| 3 | Non clinical drug development: Global submission of IND, NDA, ANDA. Investigation of medicinal products dossier, dossier (IMPD) and investigator brochure (IB) | 7 |
| 4 | Clinical trials: Developing clinical trial protocols. Institutional review board/ independent ethics committee Formulation and working procedures informed Consent process and procedures. HIPAA- new, requirement to clinical study process, pharmacovigilance safety monitoring in clinical trials. | 8 |



| 2. Evaluation | | |
|----------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|------------------------------------|---|--------------------------------|----------------|
| 1. | Ira R. Berry and Robert P.Martin, | The Pharmaceutical Regulatory Process, Second Edition Edited Drugs and the Pharmaceutical Sciences, | Informa Health care Publishers | Vol.185 |
| 2. | Fay A.Rozovsky and Rodney K. Adams | Clinical Trials and Human Research: A Practical Guide to Regulatory Compliance | - | - |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------------|--|--|----------------|
| 1. | Richard A Guarino, | New Drug Approval Process: Accelerating Global Registrations | Drugs and the Pharmaceutical Sciences, Vol.190 | 5th edition, |
| 2. | Leon Shargel and IsaderKaufer | Generic Drug Product Development, Solid Oral Dosage forms | Marcel Dekker series, | Vol.143 |



**Course Title: PHARMACEUTICAL VALIDATION AND QUALITY MANAGEMENT
SYSTEM**

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | 256080203 | 4 | 40 | | | | | |
| | | | | 20 % | 10 % | - | 70 % | - |

1. Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Explain and demonstrate the principles of Fluorescence spectroscopy and Atomic absorption and emission spectroscopy along with its instrumentation and application

CO2: Describe the theory, principle, instrumentation, and applications of Gas chromatography

CO3: Explain the theory, principle, methodology, pros, cons, and applications of High-performance liquid chromatography

CO4: Understand and get knowledge about the basics of High-performance Thin layer chromatography with its instrumentation and applications.

CO5: Develop theoretical and practical skills for validation and calibration of various analytical instruments

CO6: Outline the HPLC and Bio-analytical method development



Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1. | Introduction to validation: Definition of Calibration, Qualification and Validation, Scope, frequency, and importance. Difference between calibration and validation. Calibration of weights and measures. Advantages of Validation, scope of Validation, Organization for Validation, Validation Master plan, Types of Validation, Streamlining of qualification and validation process and Validation Master Plan. Qualification: User requirement specification, Design qualification, Factory Acceptance Test (FAT)/Site Acceptance Test (SAT), Installation qualification, Operational qualification, Performance qualification, Re-Qualification (Maintaining status Calibration Preventive Maintenance, Change management). | 8 | 25 % |
| 2. | Process Validation: Concept, Process, and documentation of Process Validation. Prospective, Concurrent & Retrospective Validation, Re validation criteria, Process Validation of various formulations (Coated tablets, Capsules, Ointment/Creams, Liquid Orals, and aerosols.), Aseptic filling: Media fill validation, USFDA guidelines on Process Validation-A life cycle approach. Analytical method validation: General principles, Validation of analytical method as per ICH guidelines and USP | 8 | 20 % |
| 3. | Cleaning Validation: Cleaning Method development, Validation of analytical method used in cleaning, Cleaning of Equipment, Cleaning of Facilities. Cleaning in place(CIP). Validation of facilities in sterile and non-sterile plants. Computerized system validation: Electronic records and digital signature-21CFR Part11and GAMP | 8 | 20 % |
| 4. | Process analytical technology (PAT): FDA initiative on process analytical technology. PAT as a driver for improving quality and reducing costs: quality by design (QbD), QA, QC, and GAMP. PAT guidance, standards, and regulatory requirements | 8 | 15 % |
| 5. | Quality as a Strategic Decision: Meaning of strategy and strategic quality management, mission and vision statements, quality policy, Quality objectives, strategic planning and implementation, McKinsey 7s model, Competitive analysis, Management commitment to quality Six System Inspection model: Quality Management system, Production system, Facility and Equipment system, Laboratory control system, Materials system, Packaging and Labeling system. Concept of self-inspection. Quality | 8 | 20 % |



| | | | |
|--|--|--|--|
| | systems: Change Management/ Change control. Deviations, Out of Specifications (OOS), Out of Trend (OOT), Complaints - evaluation and handling, Investigation and determination of root cause, Corrective and preventive Actions (CAPA), Returns and Recalls, Vendor Qualification, Annual Product Reviews, Batch Review and Batch Release. Concept area clearance/ Line clearance. | | |
|--|--|--|--|

2. Evaluation

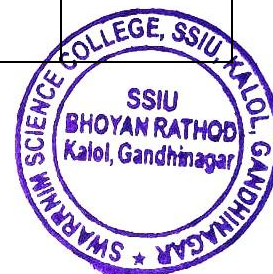
| | | |
|---|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 10% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 70% (External Assessment) |

3. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------------------|--|------------------------------------|-----------------|
| 1. | Nancy R. Tague | The Quality Toolbox | | 2 nd |
| 2. | Duke Okes | Root Cause Analysis, The Core of Problem Solving and Corrective Action | ASQ Publications | - |
| 3. | Phillip A.Cloud | Pharmaceutical Equipment Validation: The Ultimate Qualification Handbook | Interpharm Press | - |
| 4. | Huber L. | Validation and Qualification in Analytical Laboratories. | Informa Healthcare | - |
| 5. | Snyder, Kirkland, Glaich | Practical HPLC Method Development | John Wiley & Sons, New Jersey. USA | 2 nd |

4. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---------------------------|--|-------------------------|-----------------|
| 1. | B. T. Loftus & R. A. Nash | Pharmaceutical Process Validation, Drugs and Pharm Sci. Series, Vol. 129 | Marcel Dekker Inc., N.Y | 3 rd |



| | | | | |
|----|---|--|--|-----------------|
| 2. | Frederick J. Carlton and James Agalloco | Validation of Pharmaceutical Processes: Sterile Products | Marcel Dekker Inc., N.Y | - |
| 3 | Frederick J. Carlton and James Agalloco | Validation of Aseptic Pharmaceutical Processes | Marcel Dekker Inc., N.Y | 2 nd |
| 4 | Joseph M. Juran and Joseph A. De Feo | Juran's Quality Handbook | ASQ Publications | 6 th |
| 5 | Christine Avery; Diane Zabel, Routledge | The Quality Management Sourcebook: An International Guide to Materials and Resources | ---- | - |
| 6 | James W. Fairfield-Sonn | Corporate Culture and the Quality Organization | Quorum Books | - |
| 7 | Roger L Bertholf, Ruth E Winecker | Chromatographic methods in clinical chemistry & Toxicology | John Wiley & Sons, New Jersey, USA. 2007 | - |
| 8 | John A Adamovics | Chromatographic Analysis of Pharmaceuticals | Marcel Dekker, New York, USA. 1997 | 2 nd |



Course Title: PHARMACEUTICAL QUALITY ASSURANCE PRACTICAL - II

| Category of Course | Course Code | Credit | Content Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| Core | 256080204 | 4 | 120 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | | - | - | 100% | - | - |

Course Outcomes

Upon completion of this course, the student should be able to:

CO1: Develop skills and understanding for qualification of pharmaceutical equipment, pharmaceutical testing equipment and analytical instrument.

CO2: Execute validation studies and document results to ensure compliance with ICH guidelines.

CO3: Analyze case studies to understand the application of PAT and QbD tools and techniques.

CO4: Develop the ability to document experimental procedures, record observations, and effectively communicate results. Emphasize the importance of maintaining accurate and organized experimental records.

| No. | Title | Hours/ week |
|-----|---|-------------|
| 1 | Qualification of the equipment: Autoclave and Hot air oven | 8 |
| 2 | Qualification of the equipment: Powder Mixer (Dry) and Tablet Compression Machine | |
| 3 | To perform linearity, range, LOD, and LOQ studies for a given drug | |
| 4 | To perform an Accuracy study for a given drug | |
| 5 | To perform a Precision study of a given drug | |
| 6 | Validation of a processing area | |
| 7 | Qualification of analytical instrument: UV Visible Spectroscopy | |
| 8 | Qualification of analytical instrument: pH Meter | |
| 9 | Qualification of analytical instrument: HPLC | |
| 10 | Cleaning validation of one equipment | |
| 11 | Qualification of Pharmaceutical Testing Equipment: Friability Apparatus | |



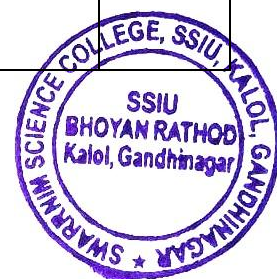
| | | |
|----|--|--|
| 12 | Qualification of Pharmaceutical Testing Equipment: Disintegration Tester | |
| 13 | Qualification of Pharmaceutical Testing Equipment: Dissolution testing apparatus | |
| 14 | Case study on application of QbD | |
| 15 | Case study on the application of PAT | |

1. Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---|--|----------------------------|-----------------|
| 1. | Chung Chow Chan, Herman Lam, Xue-Ming Zhang | Practical Approaches to Method Validation and Essential Instrument Qualification | John Wiley & Sons | - |
| 2. | Joachim Ermer, Phil W. Nethercote | Method Validation In Pharmaceutical Analysis: A Guide To Best Practice | John Wiley & Sons | 2 nd |
| 3. | Bakeev | Process Analytical Technology | Cambridge University Press | - |

2. Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---|---|-------------------|-----------------|
| 1. | Phil Cloud | Pharmaceutical Equipment Validation: The Ultimate Qualification Guidebook | CRC Press | 1 st |
| 2. | Shiv Shankar Shukla, Ravindra Kumar Pandey, Beena Gidwani, Gunjan Kalyani | Pharmaceutical Calibration, Validation and Qualification: A Comprehensive Approach | Springer | - |
| 3. | K. A. Connors | Text book of Pharmaceutical Analysis | John Wiley & Sons | 3 rd |
| 4. | Walkiria S. Schlindwein, Mark Gibson | Pharmaceutical Quality by Design: A Practical Approach | John Wiley & Sons | - |
| 5. | Katherine A. Bakeev | Process Analytical Technology: Spectroscopic Tools and Implementation Strategies for the Chemical and Pharmaceutical Industries | John Wiley & Sons | - |





School of Management, Commerce & Liberal Arts

BBA (Honours) Programme

BBA Semester I

Course Title: Principles of Management

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Major/ Core | BBA230101 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Understanding the concept and nature of Management and recognize various perspectives on Management.
2. Identify the steps involved in the process of management.
3. Design plans and take business decisions by using the apt tools and techniques.
4. Create organization charts, establish authority responsibility relationship, create departments and perform other functions of organization.
5. Identify the need for Staffing, Motivation & Leadership for adopt the best methods & Theories, styles.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Introduction to management: <ul style="list-style-type: none">• Management- Meaning & Concepts, Nature & Significance• Combination of Art & Science, Management as a Profession,• Management Vs Administration,• Levels of Management-• Elements of managerial processes- Styles & Roles of Managers in Organizations. | 9 | 15% |
| 2 | Planning & Decision making: <p>Planning:</p> <ul style="list-style-type: none">• Concept, Meaning & Definition of planning• Nature for planning,• Importance of Planning• Process of planning,• Types of plans. <p>Decision Making:</p> <ul style="list-style-type: none">• Concept, Meaning & Definition of Decision Making• Nature & Importance of Decision Making• Process of Decision Making• Methods of Decision Making | 12 | 20% |
| 3 | Organizing & Staffing <p>Organizing</p> <ul style="list-style-type: none">• Concept, Meaning & Definitions• Process of Organizing,• Principles of Organizing,• Organizational Structures (Line, Line & Staff, Matrix, Committee) & its features, merits and demerits• Departmentation & its various bases, Centralization and Decentralization (Benefits and Limitations),• Formal vs. Informal Organizations,• Delegation of Authority: Meaning. Definition, Process, principles, Blocks to | 15 | 25% |

| | | | |
|----------|--|-----------|------------|
| | <p>effective delegation.</p> <p>Staffing</p> <ul style="list-style-type: none"> • Concept, Meaning & Definition, • Features of Staffing • Process of Staffing • Difference between Recruitment and Selection, • Concepts & Sources of Recruitment | | |
| 4 | <p>Directing & Coordination</p> <p>Directing</p> <ul style="list-style-type: none"> • Concept, Meaning & Definition of directing • Features/Elements of Directing • Principles of Directing • Maslow's theory of Motivation • Leadership- Concept and Styles <p>Coordination</p> <ul style="list-style-type: none"> • Concept, Meaning & Definition • Features of Coordination • Principles of Coordination • Techniques of Coordination | 12 | 20% |
| 5 | <p>Controlling</p> <ul style="list-style-type: none"> • Concept, Meaning and Definition • Nature and importance of control • Process of Control • Essentials/principles of an effective control system • Relationship between planning and controlling • Reasons for Resistance to control • Methods: TQM, Kaizen, Six Sigma, Benchmarking, Break-Even Analysis | 12 | 20% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments/ Quizzes/Class Participation / Role Play/Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|--------------------------|---------------------|----------------|
| 1 | Dr. Jayasankar | Principles of Management | Margham Publication | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------------------|-------------------------------------|--------------------|----------------|
| 1 | Peter F. Drucker | The Practice of management | Harper Collins | Latest |
| 2 | P.C Tripathi and P.N Readdy | Principles of Management | Mcgrawhill | Latest |
| 3 | L. M. Prasad | Principles & Practice of Management | Sultan chand& sons | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- International Journal of Business and Management
- Business Standards
- Harvard Business Review
- Business Today



School of Management, Commerce & Liberal Arts

BBA (Honours) Programme

BBA Semester I

Course Title: Financial Accounting

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Major/ Core | BBA230102 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Acquiring the knowledge of different accounting concepts, methods and statements.
2. Ability to prepare financial statements in accordance with appropriate standards.
3. Creating critical thinking skills for analysis of financial data of an organization.
4. Ability to interpret different financial statements.
5. To make aware about accounting of Non-profit making organization

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | Introduction to Accounting <ul style="list-style-type: none">• Definition & scope of accounting• Objectives of accounting• Accounting v/s Bookkeeping• Users of Accounting information & it's Limitations• Branches of accounting• Accounting policies & principles• Brief Overview of Accounting standards in India | 9 | 15% |
| 2 | Accounting for Royalty <ul style="list-style-type: none">• Meaning of royalty and types of royalties• Minimum rent and short workings• Recouping short workings• Accounting treatment in the books of lessor and lessee | 12 | 20% |
| 3 | Accounts of Joint Ventures <ul style="list-style-type: none">• Meaning of joint ventures and distinction between Joint venture and partnership accounts• Accounting treatment – separate sets of books for the joint venture & covertures• Methods of recording in the books<ol style="list-style-type: none">a) When a separate books of account is maintainedb) When no separate books are maintainedc) Memorandum method | 12 | 20% |
| 4 | Final Accounts of Non-profit making organization <ul style="list-style-type: none">• Preparation of Receipts and Payments Account• Income & Expenditure Account• Balance Sheet of Non Trading Organizations (simple problems) | 12 | 20% |

| | | | |
|----------|---|-----------|------------|
| 5 | Final Accounts of Company <ul style="list-style-type: none"> Accounting Cycle Journal Rules of debit and credit Relationship between Journal and Ledger Rules regarding posting Preparation of Journal, Ledger and Trial Balance, Profit and Loss A/c, Balance Sheet Concept of Income and its Measurement | 15 | 25% |
|----------|---|-----------|------------|

| Evaluation | | |
|-------------------|---|--------------------------|
| 1 | Assignments/ Quizzes/Class Participation / Role Play/Project etc. | 30%(Internal assessment) |
| 2 | Internal Examination | 20%(Internal Assessment) |
| 3 | External Examination (University Exam) | 50%(External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------------|-------------------------|-----------------------|----------------|
| 1 | Gupta. R.L. and Radhaswamy. M | Financial Accounting | Sultan Chand and Sons | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|-------------------------|-------------------|----------------|
| 1 | Monga J.R., Ahuja Girish, and Sehgal Ashok | Financial Accounting; | Mayur Paper Back | Latest |
| 2 | Shukla. M.C., Grewal T.S., and Gupta, S.C | Advanced Accounts: | S. Chand & Co. | Latest |
| 3 | Anthony, RN. and Reece. J.S. | Accounting Principles | Richard Irwin Inc | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Journal of Accounting
- Journal of Accounting Research
- Accounting Review
- Review of Accounting studies



School of Management, Commerce & Liberal Arts

BBA (Honours) Programme

BBA Semester I

Course Title: Marketing Management

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Minor | BBA230103 | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Understanding of the basic terms used in marketing and the differences between them.
2. Ability to apply the concepts, principles of marketing to improve marketplace performance
3. Understanding of Product Management Concepts
4. Ability to identify what drives customer value and importance of buying behaviour
5. Critically analyse an organization's Distribution system and branding strategies.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | Understanding Marketing Management <ul style="list-style-type: none">• Concept and Meaning of Marketing and Marketing Management, what can be marketed?• Nature, Scope and Importance of Marketing• Key Customer Market, Needs, Wants & Demands• Evolutions of Marketing Concepts: Product Concept, Production Concept, Marketing Concept, Societal Concept, Holistic Marketing Concept. | 6 | 10% |
| 2 | Marketing Mix <ul style="list-style-type: none">• Concept of Marketing Mix, it's useful in Business,• 4 Ps of Marketing Mix - Product, Price, Place & Promotion, Extended Marketing Mix- 7 P's• Key Difference between Sales & Marketing,• Value Delivery Process,• SWOC Analysis• Marketing Environment: Micro Environment, Macro Environment | 12 | 20% |
| 3 | Product Management <ul style="list-style-type: none">• Product Concept, Classification of Products, Product Decisions,• Branding, Packaging, Labelling and After Sales Services,• Concept and New Product Development Process,• Concept of Product Life Cycle and Stages Product life cycle, Extended Product Life Cycle Stages• Portfolio approach-Boston Consulting Group (BCG) | 15 | 25% |

| | | | |
|----------|---|-----------|------------|
| 4 | Consumer Behavior <ul style="list-style-type: none"> • Concept of Consumer Behavior, • Factors Affecting Consumer Behavior: <ul style="list-style-type: none"> – Cultural Factors, – Social Factors, – Personal Factors, and – Psychological Factors; • Targeting, Target Market Selection Process, • Positioning, Differentiation, Types of Differentiation, Differentiation Strategies, • Types of Buying Process: • Consumer Buying Process, • Business Buying Process. | 18 | 30% |
| 5 | Marketing Channels & Tools of Promotion <ul style="list-style-type: none"> • Distribution Channel, • Types of Distribution Channel, • Channel Intermediaries, • Role & Importance of Channel, • Evaluating & Channel Mgt. Decisions, • Benefits of Distribution Channels, • Promotional Tools. | 9 | 15% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of theBook | Publisher | Edition |
|----------------|-----------------------------------|------------------------------------|-------------------|----------------|
| 1 | Philip Kotler & Kevin Lane Keller | Marketing Management | Pearson Education | Latest |
| 2 | Philip Kotler, Gary Armstrong | Principles of Marketing Management | Pearson Education | Latest |

Reference Books:

| Sr. No. | Author/s | Name of theBook | Publisher | Edition |
|----------------|-------------------------------|---------------------------|-------------------|----------------|
| 1 | Stanton, Etzel & Walker | Fundamentals of Marketing | McGraw Hill | Latest |
| 2 | Kotler, Keller, Koshy and Jha | Marketing Management | Pearson Education | Latest |
| 3 | Arunkumar and Meenakshi | Marketing Management | Vikas Publication | Latest |
| 4 | Lamb Hair, Sharma & McDaniel | Principles of Marketing | Cengage | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Journal of Marketing
- Harvard Business Review
- Journal of Marketing Management
- Business Standard
- Business Today



School of Management, Commerce & Liberal Arts

BBA (Honours) Programme

BBA Semester I

Course Title: Office Automation

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MDC | BBA230104 | 4 | 60 | 10% | 30% | 10% | 25% | 25% |

Course Outcomes (COs)

1. The understanding of the basic nature & scope of computer usage
2. The identification of various peripheral devices, internet environment, word processing, spread sheets and presentation in computer related terminology.
3. The knowledge about different computer concepts such as internet environment.
4. Ability to use digital resources at workplace for effective organization.
5. To equip students with practical knowledge of MS office

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Computer Basics <ul style="list-style-type: none">• Definition of the computer,• Block diagram of computer,• Characteristics of computer• Generation of the computer: - Analog computer, digital computer (mini, micro, mainframe, super), hybrid computer• Types of Memory: -RAM, ROM, PROM, EPROM, EEPROM• Storage Device:-floppy disk ,hard disk, CD, DVD, Pen drive | 12 | 20% |
| 2 | OPERATING SYSTEMS Windows: <ul style="list-style-type: none">• Definition of Operating System• Functions of OS• Types of OS: Single user, Multi-User, multi-task.• Windows Desk top – GUI: Definition, Standards, Cursors/Pointers, Icons, GUI Menus.• Data – Desktop icons and their functions: My computer, my documents, Network neighborhood, Recycle Bin, Quick launch tool bar, System tray, Start menu.• Task Bar - System Tray - Quick launch tool bar - Start button - Parts of Windows -Title bar-Menu bar - Scroll bar- Status bar, Maximize, Minimize, close and Resize & Moving a Window• Windows - Start Menu –Help Menu- Preview Menu; Logoff & Shutdown• Personalizing Windows. | 12 | 20% |

| | | | |
|---|--|----|-----|
| 3 | Input and output device <ul style="list-style-type: none"> • Input Device: - keyboard, Mouse, Scanner, MICR, Micro phone, Barcode reader, touch screen • Output Device: - Visual display unit- CRT, LCD, LED • Printers- Impact -Daisy wheel, dot matrix printer, Non-Impact– drum, ink-jet, laser | 6 | 10% |
| 4 | Internet Basic <ul style="list-style-type: none"> • Internet Concept • Internet Services: - E-mail, Chatting, Conference Internet telephony, • Internet connection methods:-Dial-up connection, leased line connection • Addressing-IP addressing, DNS, • Overview: - FTP, WWW. Web browser | 6 | 10% |
| 5 | Practical <ul style="list-style-type: none"> • MS-Word Editing, Font formatting, Paragraph formatting, Page setups and printing document, Mail-merge • Ms-Excel Preparing worksheet, Formatting cell, Page setup, building formulas, library functions (sum (), average (), count (), left (), right (), mid (), if (), or (), and (), not (), date (), now (), time(), fv(), pv(), pmt(), ipmt(), irr(), yield(), rate()) • MS- PowerPoint Preparing interactive presentation Viewing and navigating presentation | 24 | 40% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination (Theory & Practical) | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) (Theory & | 50% (External Assessment) |

| | | |
|--|------------|--|
| | Practical) | |
|--|------------|--|

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|-------------------------|------------------|----------------|
| 1 | P.K.Sinha | Computer Fundamentals | BPB publication | Latest |
| 2 | Bittu Kumar | Mastering OF MSoffice | V&S Publication | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------------|-------------------------|------------------|----------------|
| 1 | Anita Goel | Computer Fundamentals | Pearson | Latest |
| 2 | Microsoft Office 2010 | MS Office Book | BPB publication | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Office Pro Magazine
- Journal of Office Automation
- Business Automation Magazine
- AIIM's Digital Landfill
- Computer world
- Information Week

Web Resources

- www.computerhope.com
- www.teach-ict.com
- www.coursera.org
- www.csfieldguide.org.nz
- www.techterms.com



School of Management, Commerce & Liberal Arts
BBA (Honors) Programme
BBA Semester I

Course Title: Communication Skills

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| AEC | AEC230101 | 2 | 30 | 20% | 30% | - | 50% | |

Course Outcomes(COs)

1. Inculcation of different skills will be added in a student's career.
2. Students' employability skills will be enhanced.
3. Ability to speak in English will be improved through practice.
4. Self-Analysis tool will help the students to identify their strengths and weaknesses to work upon.

Syllabus:

| Module | Contents* | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Introduction to Communication Skills <ul style="list-style-type: none">• Definition & meaning of Communication, Types of communication, importance of communication• Essential Skills for Success - Trainer will introduce himself/herself and briefly talk about soft skills. Talk about what soft skills are and their importance.• SWOT Analysis - Trainer will help students understand their strengths, weaknesses, opportunities and threats. | 9 | 30% |
| 2 | First Impressions <ul style="list-style-type: none">• Self-Presentation - Trainer will talk about how students can present themselves to others in various settings. Self-presentation plays a crucial role in creating initial impressions. A positive and confident self-presentation can set the tone for successful interactions and relationships.• 4 A'S of Dressing - 4 A's of appearance which are: Appropriate Dressing, Authentic Dressing, Approachable Dressing and Affordable Dressing.• The Art of Attitude - the importance of attitude management, impact of attitude on personal and professional growth, power of positive attitude.• Modes of Communication, Role of Verbal and Non-Verbal Communication, 7Cs of Effective Communication | 9 | 30% |

| | | | |
|----------|--|-----------|------------|
| 3 | Professional Ethics <ul style="list-style-type: none"> • Polite Protocol - the importance of greeting etiquettes, formal greetings and informal greetings. • Concept of Happiness & Appreciation - the importance of happiness and how to identify own happiness. • Professional Interaction - the concept of professionalism, professional ethics. An interactive activity will be conducted and there will be three scenarios presented in the activity, followed by a discussion about professional ethics. • Types of Ethics – types of professional ethics, importance of ethics • Barriers to effective communication, Overcoming barriers | 12 | 40% |
|----------|--|-----------|------------|

*Note:

1. Activities and content topics may vary according to the feasibility of technical, environmental and physical conditions.

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Text books:

| Sr No: | Text Book | Author Name | Publisher | Edition |
|---------------|--------------------------|--------------------|--------------------------|----------------|
| 1. | Corporate Soft Skills | Sarvesh Gulati | Rupa Publications | 2006 |
| 2. | Successful Communication | Ken Lawson | Axis Publishing Limited | 2006 |
| 3. | Soft Skills For Dummies | John Wiley & Sons | John Wiley & Sons, Inc., | 2023 |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-----------------------------------|--|---------------------------|---------|
| 1 | Nitin Bhattnagar, Mamta Bhatnagar | Effective Communication And Soft Skills | Pearson Pub. | 2012 |
| 2 | ©AICTE Approved | Communications Skills WorkBook | NA | NA |
| 3 | Roshan Lal Raina | Professional Communication | Himalaya Publishing House | 2012 |
| 4 | Christie Marlowe | Presenting Yourself: Business Manners, Personality, Etiquettes | Mason Crest | 2014 |
| 5 | Jeff Keller | Attitude is everything | Harper Collins | 2017 |

❖ List of Websites/ videos for reference:

- [Basics Of Communication Skills](#)
- [Essential Skills For Success](#)
- [Self-Presentation](#)
- [Fundamentals Of Communication](#)
- [Appreciation And Gratitude](#)



School of Management, Commerce & Liberal Arts

BBA (Honours) Programme

BBA Semester I

Course Title: Foundation of Entrepreneurship

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| SEC | SEC230101 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To know various theories of entrepreneurship and trends.
2. To identify various issues and challenges in starting a new venture.
3. To understand innovation and its implications
4. To create entrepreneurial mindset through understanding entrepreneurial personality

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | Introduction to Entrepreneurship: <ul style="list-style-type: none">• Meaning, Role of Entrepreneur,• Entrepreneurial Process and different approaches,• Motivation for becoming an entrepreneur: Maslow's theory, Herzberg's theory, MC Gregor's theory, McClelland 's Need - achievement theory• Importance of Entrepreneurship, Functions of an Entrepreneur, Types of Entrepreneurs, Issues & Problems in Entrepreneurial Practices, entrepreneurial education and entrepreneurial mind,• Value creation- economic value and social Value,• Intrapreneurship (Corporate Entrepreneurship, Entrepreneurship and Startup | 12 | 40% |
| 2 | Characteristics or traits of successful entrepreneurs and myths related to entrepreneurship: <ul style="list-style-type: none">• Characteristics or traits of successful entrepreneurs, need for studying success characteristics / traits of entrepreneurs,• How to develop successful characteristics/traits of entrepreneur• Myths related to entrepreneurship. | 9 | 30% |
| 3 | Cognitive foundations of entrepreneurship <ul style="list-style-type: none">• Human cognition: its basic nature- and important limitations,• Creativity and innovation• Ideas to reality | 9 | 30% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------------|--|-----------------------|----------------|
| 1 | S.S. Khanka, Gupta. C.B. | Entrepreneurship & Small Business Management | Sultan Chand and Sons | Latest |
| 2 | Sami Uddin | Entrepreneurship Development in India | Mittal Publications | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------------------------|---|-----------------------|----------------|
| 1 | Dr. Bhatia. R.C | Entrepreneurship: Business and Management | Sultan Chand and Sons | Latest |
| 2 | Bruce R. Barringer | Entrepreneurship: Successfully Launching New Ventures | Pearson Education | Latest |
| 3 | <u>Janakiram. B., Rizwana. M.</u> | Entrepreneurship development | Excel Books | Latest |
| 4 | Khanna. S.S. | Entrepreneurial Development | Excel Books | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

1. Journal of Entrepreneurship
2. Journal of Small Business Management
3. Journal of Entrepreneurship & Management
4. AMC Indian Journal of Entrepreneurship



School of Management, Commerce & Liberal Arts

BBA (Honours) Programme

BBA Semester I

Course Title: Indian Economy & Business Model

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| IKS | IKS230101 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Enlightening the students about the ancient fundamentals about Indian economics which will frame out a basic land of understanding the modern trends.
2. Understanding the Indian economic models during ancient India.
3. Enhancing the knowledge of Indian business models (pre – post independence) in comparison of world business models

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Introduction to Ancient Indian Economy <ul style="list-style-type: none">• World GDP during 0 AD• Indian Economy since the ancient periods• Ethics in Economics during ancient periods• Government & Business during ancient periods• GDP of India & other countries/regions from 0 AD to 1700 AD | 9 | 30% |
| 2 | Indian Economic Models <ul style="list-style-type: none">• World economic models – Capitalism, Communism, Asian Economic models• Features of Western economic models• Impact of History & Culture on economic development• Features of Indian economic models | 9 | 30% |
| 3 | Business Models <ul style="list-style-type: none">• Western & Eastern business models with its universality• Business in ancient India• Business during pre & post-Independence India• Business models during present period• Features of Indian business models• Brief introduction about Indian Management Models• India as a an Economic power in 21st Century | 12 | 40% |

| Evaluation | | |
|------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------|---|---|-------------------------------|
| 1 | P. Kanagasabapathi | Indian Models of Economy, Business & Management | PHI learning Private Limited, New Delhi | 3 rd Edition, 2012 |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|----------------------|--|--|----------------|
| 1 | L.N. Rangarajan, | Kautilya, The Arthashastra | Penguin Books Ltd, London | Latest Edition |
| 2 | Priyadarshni Academy | Kautilya's Arthashastra: The Way of Financial Management and Economic Governance | Jaico Publishing House, Mumbai, India. | Latest Edition |

Web resources:

- Goswami Anandajit, Economic Modelling, Analysis, and Policy for Sustainability, IGI, Global, Latest Edition.
- Ganguly Anirban, Redefining Governance, published by Prabhat Prakashan, Latest Edition.
- Vaidyanathan R., India Unincorporated, ICFAI Books, Latest Edition.



School of Management, Commerce & Liberal Arts

BBA (Honours) Programme

BBA Semester II

Course Title: Fundamentals of Economics

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Major/ Core | BBA230202 | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. The understanding of the basic nature & scope of economics.
2. The identification of various economic variables in general business atmosphere.
3. The knowledge about different micro economic concepts such as demand & supply.
4. Ability to forecast future demand for business.
5. Understanding various macro-economic indicators.
6. Understanding different aspects of monetary policy and fiscal policy of a nation.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|----------|---|----------------|------------|
| 1 | Introduction to Economics <ul style="list-style-type: none">• Meaning of Economic problem• Early definitions (Wealth, Welfare, Scarcity, Growth)• Types of Economics: Micro & Macro, Micro Economics (Definition, Importance and Limitations)• Economics as a positive or normative science, Scope of Economics• Meaning, Origin, Scope of Macroeconomics, Microeconomics v/s macroeconomics• Importance and Limitations of Macroeconomics• Concepts of Macroeconomic Analysis | 12 | 20% |
| 2 | Demand and Supply analysis <ul style="list-style-type: none">• Meaning, Types of demand, Demand Curve, Estimation of demand on the basis of Price and Income and determinants of demand• Meaning, the determinants of supply Demand Elasticity <ul style="list-style-type: none">• Meaning & Definition• Price, Income and Cross Elasticity (Meaning, equations and Factors affecting) | 15 | 25% |
| 3 | Cost & Revenue Analysis <ul style="list-style-type: none">• Three concepts of the term "cost - real cost, opportunity cost, money cost and types of costs• Short-run Total Cost Curves - Fixed and Variable, Short-run Average and Marginal Cost Curves Types of revenues, Relationship between average revenue & marginal revenue under different market conditions | 12 | 20% |
| 4 | Macro-Economic Indicators <ul style="list-style-type: none">• Meaning and Methods of Measuring | 15 | 25% |

| | | | |
|----------|--|----------|------------|
| | Inflation, Types of Inflation, Social & Economic Effects of Inflation <ul style="list-style-type: none"> • Meaning, types, causes, Economic effects of unemployment • Definition, Features and phases of Business Cycle • Factors of Production, Basic Concepts, Production Function • National Income: Meaning & Definitions, Basic Concept of national income • Methods of measuring National income, Difficulties in measuring national income | | |
| 5 | Policy Framework of Indian Economy <ul style="list-style-type: none"> • Meaning and Scope of Monetary Policy • Instrument of Monetary Policy • Limitations and Effectiveness of Monetary Policy • Meaning and Scope of Fiscal Policy • Objectives of making fiscal policy • Instrument of Fiscal policy – Budget | 6 | 10% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------|----------------------------------|------------------|----------------|
| 1 | Deviga Venedasalam | Principles of Economics | Oxford | Latest Edition |
| 2. | Diwedi D N | Macroeconomics Theory and Policy | Tata McGraw Hill | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|-------------------------|------------------|----------------|
| 1 | N. Gregory | Principles of Economics | Cengage | Latest Edition |

| | | | | |
|---|--|--------------------------|---------------------|----------------|
| | Mankiw | | | |
| 2 | Geetika, Piyali Ghosh, Purba Roy Choudhury | Managerial Economics | McGraw Hill | Latest Edition |
| 3 | R. Cauvery | Microeconomic Theory | S. Chand | Latest Edition |
| 4 | Robert S. Pindyck | Microeconomics | Pearson | Latest Edition |
| 5 | Eugene Diutio | Macro-economic Theory | Tata McGraw Hill | Latest Edition |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Business Standard
- The Economic Times
- Business Today
- Indian Journal of Business Research and Economics



School of Management, Commerce & Liberal Arts

BBA (Honours) Programme

BBA Semester II

Course Title: Environmental Studies

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| VAC | VAC230201 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Enabling students to understand and realize the multi- disciplinary nature of the environment, its components, and inter-relationship between man and environment.
2. Understanding the relevance and importance of natural resources in the sustenance of life on earth and living standard. the importance of ecosystem, biodiversity, and nature.
3. Correlating the human population growth and its trend to the environmental degradation and developing the awareness about his/her role towards environmental protection. Identifying different types of environmental pollution and control measures.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Introduction to Environment and <ul style="list-style-type: none">• Definition and Components of Environment, Relationship between the different components of Environment, Man and Environment relationship, Impact of technology on Environment, Environmental Degradation, its scope.• Water resources: Sources of water - Surface and Ground water sources, Indian and Global scenario.• Land resources: Land pollution, land use, land degradation & its causes.• Forest resources: Definition and Types of Forests importance and benefits of forest, Deforestation causes and effects. | 9 | 30% |
| 2 | Ecology and Ecosystems: <ul style="list-style-type: none">• Ecology: Introduction, Objectives and Classification, Concept of an ecosystem-structure of ecosystem or Components of ecosystem- Producers, Consumers, Decomposers• Ecosystems: Forest Ecosystem, Grassland Ecosystem, Desert Ecosystem, Aquatic Ecosystem, Estuarine Ecosystem• Human Population and Environment: Population Growth, World and Indian scenario, Population and Environmental Degradation, Malthusian theory, Optimum theory,• Urbanization: Urban population growth and Environmental problems | 12 | 40% |
| 3 | Environmental pollutions: <ul style="list-style-type: none">• Water Pollution: Introduction – Water Quality standards, sources of water | 9 | 30% |

| | | | |
|--|---|--|--|
| | <p>pollution Classification of water pollutants. Eutrophication</p> <ul style="list-style-type: none"> • Air Pollution: Composition of air, Structure of atmosphere, Ambient Air Quality Standards, Classification of air pollutants, • Land Pollution: Land uses, Land degradation: causes, effects and control, soil erosion • Noise Pollution: Introduction, Sound and Noise, Causes and Effects • Global Environmental Issues: Climate Change, Global Warming and Green House Effect, Acid Rain, Depletion of Ozone layer | | |
|--|---|--|--|

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------|---------------------------------|--------------------------|----------------|
| 1 | Snehal Popli & B.R.Shah | Basics of Environmental studies | Mahajan Publishing House | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------------|---------------------------------|--|----------------|
| 1 | Prof Dr N S Varandani | Basics of Environmental Studies | LAP -Lambert Academic Publishing Germany | Latest |
| 2 | R. Rajagopalan | Environmental Studies | Oxford University Press | Latest |
| 3 | U K Khare | Basics of Environmental Studies | Tata McGraw Hill | Latest |

| | | | | |
|---|--|---------------------------|-----------------------|--------|
| 4 | Daniel B Botkin &Edward A Keller | Environmental Sciences | John Wiley & Sons. | Latest |
|---|--|---------------------------|-----------------------|--------|

❖ **List of Journals / Periodicals / Magazines / Newspapers:**

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Environmental Standard
- Indian Journal of Environmental Research and Studies
- Journal of Environmental Science and Technology.



School of Management, Commerce & Liberal Arts

BBA (Honours) Programme

BBA Semester II

Course Title: Financial Management

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Minor | BBA230203 | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. The understanding of how the Indian financial system works.
2. The knowledge of different avenues of raising and investing funds to establish and run the business.
3. The ability to apply time value of money in taking financial investment decision
4. Enhancing the ability to understand operating cycle
5. Enabling students to know how to manage working capital finance

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | Introduction of Financial Management <ul style="list-style-type: none">• Meaning and Nature of Financial Management (FM)• Indian Financial System - Structure and types of financial markets and instruments• Evolution of Financial Management-Traditional, Transitional and Modern,• Goals of FM: Profit Maximization, Wealth Maximization.• Functions of finance Financing Decision, Investment Decision, Dividend Decision and Liquidity Decision,• Organization of financial Function (status and duties of financial manager: Treasurer and Controller) | | 20% |
| 2 | Sources of Finance <ul style="list-style-type: none">• Long-Term Finance - Features, Advantages and Disadvantages of the following forms of finance:<ol style="list-style-type: none">1) Equity Shares2) Preference shares3) Debentures4) Term Loan5) Right shares (brief idea)6) Retained earnings• Short-Term/ Sources of Working Capital Finance<ol style="list-style-type: none">1) Accruals2) Trade Credit3) Public Deposits4) Factoring5) Commercial Paper6) Inter-corporate Deposit7) Certificate of Deposit | | 25% |
| 3 | Long term Investment Decision <ul style="list-style-type: none">• Capital Budgeting – Meaning, definition & characteristics• Evaluation techniques Accounting Rate of Return, Net Present Value, | | 20% |

| | | | |
|----------|---|--|------------|
| | Internal Rate of Return, Net Terminal Value, Profitably Index Method and Pay Back Period (including numerical) | | |
| 4 | Working Capital Management <ul style="list-style-type: none"> • Introduction of Working Capital Management • Meaning of working capital, Types - Gross, Net, factors affecting working capital, brief idea different components of working capital • Operating cycle and cash cycle, estimation of working capital requirement (numerical) • Management of Cash: objective of cash management, motives to hold cash, Cash management technique-managing cash inflow and managing cash outflow techniques | | 20% |
| 5 | Receivables Management <ul style="list-style-type: none"> • Objectives, Credit Policy variables, Costs Collection Cost, Capital Cost, Default Cost, Delinquency Cost • Credit Evaluation Methods (Traditional, Numerical credit scoring, Risk Classification) • Monitoring receivable (Days Sales Outstanding, Aging Schedule, Collection Matrix) | | 15% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------------|---|-------------------------------------|----------------|
| 1 | M.Y. Khan & P.K. Jain | Financial Management - Text Problem and Cases | Tata McGraw Hill Publishing Co.Ltd. | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---|--|------------------------------|----------------|
| 1 | I. M. Pandey | Financial Management - Theory and Practices | Vikas Publishing House | Latest Edition |
| 2 | R. P. Rustog | Financial Management - Theory Concepts and Practices | Taxmann Publication | Latest Edition |
| 3 | J.V. Horne & J.M. Wachowicz | Fundamentals of Financial Management | McGraw Hill Higher Education | Latest Edition |
| 4 | R.A. Brealey, S.C. Myers, F. Allen & P. Mohanty | Principles of Corporate Finance | Prentice Hall | Latest Edition |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- The Journal of Finance
- Journal of Financial Economics
- Business Today
- Journal of Banking & Finance
- Journal of International Money & Finance



School of Management, Commerce & Liberal Arts

BBA (Honours) Programme

BBA Semester II

Course Title: Foundation in Statistical Method

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MDC | BBA230204 | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes(COs):

1. The understanding of the basic Mathematical Concepts.
2. The identification of structured Business Problems in a mathematical form.
3. Application of the mathematical concepts learnt to business courses.
4. Ability to test the hypothesis relating to economics, business and finance.
5. Analyzing business data using time series technique.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Population and Sample <ul style="list-style-type: none">• Definition of statistics• Scope of Statistics in Economics• Management Science and Industry.• Concept of population and sample with illustration.• Methods of Sampling – SRSWR, SRSWOR, stratified, systematics (Description of Sampling only)• Data Condensation and Graphical Methods: Raw data, Attributes and variable, classification, Frequency distribution, cumulative frequency distribution | 12 | 20% |
| 2 | Measures of Central Tendency <ul style="list-style-type: none">• Criteria for good measures of central tendency• Arithmetic mean, median and mode for grouped and ungrouped data• Measures of dispersion• Concept of dispersion• Absolute and relative measure of dispersion• Range, Variance, Standard Deviation• Coefficient of variance• Quartile deviation and Coefficient of Quartile deviation | 15 | 25% |
| 3 | Correlation and Regression Correlation <ul style="list-style-type: none">• Concept of Correlation• Positive & negative correlation• Karl Pearson's Coefficient of correlation Regression <ul style="list-style-type: none">• Meaning of Regression• Two regression equations• Regression Coefficients and properties | 9 | 15% |

| | | | |
|--------------------|--|---|--|
| 4 | Testing of Hypothesis <ul style="list-style-type: none"> • Introduction • Statistical assumption • Level of significance • Confidence interval • Type -I & Type -II error • Critical Value • Application of small sample test – t and F test | 15 | 25% |
| 5. | Time series Analysis <ul style="list-style-type: none"> • Objectives and uses of Time series analysis | 9 | 15% |
| Category of Course | Course Code Component of Time series • Measurement of averages method BBA230204 | Contact Hours Trend by moving Theory 45 | Internal Continuous Assessment Practical 10% 30% 10% External Theory Practical 25% 25% |

| Evaluation | | |
|------------|--|--------------------------|
| 1 | Course Outcomes (COs): Assignments/ Quizzes/Class Participation / Role Play/Project etc. | 30%(Internal Assessment) |
| 2 | Internal Examination | 20%(Internal Assessment) |
| 3 | External Examination (University Exam) | 50%(External Assessment) |

2. To develop an understanding of the impact of emerging technologies on business models and processes.

Basic Text Books:

| Sr. No. | Authors | Name of the Book | Publisher | Edition |
|---------|-----------------------------|----------------------------|-----------------------|---------------|
| 1 | Ravish R Singh, Mukul Bhatt | Probability And Statistics | McGraw Hill Education | First Edition |
| | | | | |

Reference Books:

| Sr. No. | Authors | Name of the Book | Publisher | Edition |
|---------|------------------------------------|---|-----------------------------------|----------------|
| 1 | S.G Gupta | Fundamental of Statistics | Sultan Chand & Sons, Delhi | Twelth Edition |
| 2 | D.N.Elhance | Fundamental of Statistics | Kitab Mahal,Alhabad | Second Edition |
| 3 | Halg Lee | Foundation of Applied Statistical Methods | Springer International Publishing | Latest |
| 4 | Goran Kauermann, Christian Heumann | Statistical Fundamental , Reasoning and inference | Springer International Publishing | Latest |

❖ **List of Journals / Periodicals / Magazines / Newspapers:**

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Journal of the Indian Society for Probability and Statistics
- International Statistical Review
- Journal of the Royal Statistical Society, Series B: Statistical Methodology
- Advances in Statistical Analysis
- Calcutta Statistical Association Bulletin



School of Management, Commerce & Liberal Arts

BBA (Honours) Programme

BBA Semester II

Course Title: Organisational Behaviour

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Major/ Core | BBA230201 | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To familiarize with the concept of individual, group and organisation behaviour at work.
2. To understand individual behavior in organizations due to diversity, attitudes, job satisfaction, emotions, personality, perception, motivation that influence the decision making and work.
3. To familiarize with concept of leadership and theories of motivation.
4. To explain how power and culture affect working relationships within organizations.
5. To ability to adapt the organizational change.
6. To understand the concept of stress and methods of managing the stress to improve the organizational performance.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | Introduction to Organization Behaviour (OB): <ul style="list-style-type: none">• Concept, Disciplines that Contribute to OB.• Diversity: Demographic Characteristics, Levels of Diversity.• Attitude and Job Satisfaction: Concept and Importance. | 12 | 20% |
| 2 | Emotions and Mood: <ul style="list-style-type: none">• Concept and Sources• Personality: Concept and Framework. Hofsted's Framework of Cultural Values.• Perception: Concept and Individual Decision Making. | 12 | 20% |
| 3 | Motivation: <ul style="list-style-type: none">• Concept and Early Theories.• Foundation of group Behaviour: Definition stages of Group Development, Group Decision Making. Groups and Teams: Types of teams.• Leadership: Concept, trait and behavior theory. | 15 | 25% |
| 4 | Organizational power: <ul style="list-style-type: none">• Basis of power• Conflict: concept and process• Negotiation process• Organizational culture: what culture do, how to learn culture | 15 | 25% |

| | | | |
|----------|---|----------|------------|
| 5 | Organization Change: <ul style="list-style-type: none"> Forces of change, resistance to change, overcoming resistance to change, Managing change using Lewin's Model and Kotter's Eight-Step Plan Stress and managing stress | 6 | 10% |
|----------|---|----------|------------|

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------|-------------------------|----------------------------------|--------------------------------|
| 1 | Stephen P. Robins | Organisational Behavior | PHI Learning / Pearson Education | latest edition or 2018 |
| 2 | Fred Luthans | Organisational Behavior | McGraw Hill | 11 th Edition, 2001 |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------------|-------------------------|-------------------------|-------------------------------|
| 1 | Schermerhorn, Hunt and Osborn | Organisational Behavior | John Wiley | 9 th Edition, 2008 |
| 2 | Udai Pareek | Organisational Behavior | Oxford Higher Education | 2004 |

| | | | | |
|---|---------------------------------|-------------------------------------|-------------------|------|
| 3 | Mc Shane & Von Glinov | Organisational Behavior | Tata Mc Graw Hill | 2007 |
| 4 | Hellrigal, Slocum and Woodman | Organisational Behavior | Cengage Learning | 2007 |
| 5 | Ivancevich, Konopaske & Maheson | Oranisationl Behaviour & Management | Tata McGraw Hill | 2008 |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Harvard Business Review
- Times Ascent and Times of India Editorial Page
- Journal of Human Values (IIM Calcutta Journal)



School of Management, Commerce & Liberal Arts

BBA (Honours) Programme

BBA Semester II

Course Title: Identifying Entrepreneurial Opportunities

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| SEC | SEC230202 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Exploration of opportunities from the market
2. Check technical, market, financial and other types of Feasibility of a business idea.
3. Develop business model to describe the rationale of how an organization creates, delivers, and captures value

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Opportunities: Their nature, discovery, and Creation: <ul style="list-style-type: none">• Opportunities: Their basic nature, opportunities: Discovered, created, or both, Opportunities: The role of information, experience and social network- The role of information in opportunity recognition, The role of experience and social networks in opportunity recognition,• How entrepreneurs can become skilled at recognizing opportunities...Entrepreneurship, Entrepreneurship and Startup | 12 | 40% |
| 2 | Business Idea Creation & IPR <ul style="list-style-type: none">• Meaning, sources of business ideas, techniques for idea generation like brain storming,• Focus group, six thinking hats as idea generation,• Characteristics of brilliant business ideas Introduction: <ul style="list-style-type: none">• Knowledge creation, Innovation and Intellectual Property Rights, Concept of Intellectual Property,• Types of IPR – Patents – Copyright – Trademark – Industrial Designs – Trade Secrets – Geographical | 9 | 30% |
| 3 | Business Model: <ul style="list-style-type: none">• Introduction to business model, Types of business model,• Developing and testing a business model, Business modelling process, Business model canvas,• Business Models and value proposition, Business Model Failure: Reasons and Remedies Reinventing business model | 9 | 30% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------------|--|-----------------------|----------------|
| 1 | S.S. Khanka, Gupta. C.B. | Entrepreneurship & Small Business Management | Sultan Chand and Sons | Latest |
| 2 | Sami Uddin | Entrepreneurship Development in India | Mittal Publications | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------------------------|---|-----------------------|----------------|
| 1 | Dr. Bhatia. R.C | Entrepreneurship: Business and Management | Sultan Chand and Sons | Latest |
| 2 | Bruce R. Barringer | Entrepreneurship: Successfully Launching New Ventures | Pearson Education | Latest |
| 3 | <u>Janakiram. B., Rizwana. M.</u> | Entrepreneurship development | Excel Books | Latest |
| 4 | Khanna. S.S. | Entrepreneurial Development | Excel Books | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

1. Journal of Entrepreneurship
2. Journal of Small Business Management
3. Journal of Entrepreneurship & Management
4. AMC Indian Journal of Entrepreneurship



School of Management, Commerce & Liberal Arts

BBA (Honours) Programme

BBA Semester II

Course Title: Logical and Critical Thinking

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| ACE | AEC230202 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Ability to understand the basic concept of Logical and Critical Thinking and are able to solve problems
2. Increasing the analytical ability.
3. Helping students in employability in service based company, government sector, PSU and in pursuing for higher studies also.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Simplification and Approximation <ul style="list-style-type: none">BODMAS Rule, Approximation. Short trick, Digit Sum, Square Roots and Cube roots based QuestionCoding Decoding: Coding means Encryption and Decoding means Decryption among letters, alphabets and Special Symbols | 9 | 30% |
| 2 | Logical Reasoning <ul style="list-style-type: none">Crypt arithmetic: Crypt arithmetic is a type of mathematical game consisting of Mathematical EquationAnalogy & Odd one out: An Analogy is a comparison between two objects or system of objects in which they are thought to be similar.Direction & Distance: Description of Directions and Determination of Distance wrt. Directions, Sunrise and Sunset with Shadow Concept.Blood Relations: In such questions, one person describes his /her relation with another person, Pointer- narrator relations, Symbols relation as well as group relation | 9 | 30% |
| 3 | Number System <ul style="list-style-type: none">Classifications of Number System Rational/Irrational No's, Integers, fraction, Even-odd, Prime - Composite no'sPerfect number & Square, Face Value- Place value, Frequency of Digit OccurrenceConcept of Divisibility Rule - finding the division of a numberCyclicity rule - Unit digit Concept, Trailing ZeroesBinomial Theorem - for remainderFactorizations - Prime - Composite factors, Total factors, Even-Odd factors | 12 | 40% |

| Evaluation | | |
|-------------------|--|--------------------------|
| 1 | Assignments/ Quizzes/ClassParticipation / Role Play/Project etc. | 30%(Internal Assessment) |
| 2 | Internal Examination | 20%(InternalAssessment) |
| 3 | External Examination(University Exam) | 50%(External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|--|------------------|----------------|
| 1 | R.S.AGRWAL | Reasoning for Competitive Examinations | S CHAND | 2022 |
| 2 | R.S. AGRWAL | Quantitative Aptitude for Competitive Examinations | S CHAND | 2022 |

Reference Books:

| i | Author/s | Name of the Book | Publisher | Edition |
|----------|-----------------|--|-----------------------|-----------------------|
| 1 | ARUN SHARMA | How To Prepare For Quantitative Aptitude | McGraw Hill Education | 10 TH 2022 |
| 2 | R. PRAVEEN | Quantitative Aptitude and Reasoning | PHI Learning Pvt Ltd | 3 RD 2016 |

Relevant Websites

1. ARIHANT REASONING E-BOOK PDF
<https://parikshatop.com/arihant-reasoning-book-pdf-download-free/>
2. E BOOK FOR REASONING – ARUN SHARMA
<https://z-lib.is/book/how-to-prepare-for-logical-reasoning-for-the-cat>
3. E BOOK FOR APTITUDE– ARUN SHARMA
<https://z-lib.is/book/how-to-prepare-for-quantitative-aptitude-for-the-cat>
4. LINK FOR MULTIPLE QUANT E BOOK
<https://www.google.com/search?q=aptitude+book+for+placement+pdf&oq=APTITUDE+BOOK&aqs=chrome.3.0i512l10.12648j0j15&sourceid=chrome&ie=UTF-8>



School of Management, Commerce & Liberal Arts

BBA (Honors) Programme

BBA Semester III

Course Title: Business Environment

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | BBA230301 | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs):

1. Understanding the concepts of Business environment & Macro/Micro environment
2. Ability to correlate current economic scenario and environmental impact on business
3. Ability to understand the importance of socio cultural factors affecting business operations
4. Identification of possible threats and opportunities from ever changing technological environment
5. Making students acquaintance with the knowledge of taking business globally

Syllabus

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | An Overview of Business Environment: <ul style="list-style-type: none"> • Business Definition • Environment Definition • Business Environment—Definition, Objectives and Characteristics. • Internal Environment • External Environment: [MICRO & MACRO] • Environment Analysis – Definition, Factors, Uses and Limitations | 09 | 15% |
| 2 | Economic Environment <ul style="list-style-type: none"> • Nature of Economic Environment. Economic factors-growth strategy • Basic economic system, economic planning, Economic policies- new industrial policy. • Monetary and fiscal policies. • Liberalization, Privatization and Globalization of Indian Economy | 12 | 20% |
| 3 | Social Environment <ul style="list-style-type: none"> • Concept and significance of Socio-cultural Environment, Social responsibility concept and stake holder approach • Social Responsibilities models- Ackerman's Model, Carroll's Four Part model • Arguments for and against social responsibility | 12 | 20% |
| 4 | Technological Environment <ul style="list-style-type: none"> • Meaning and Features • Impact of Technology on Society, Economy, Organization • Management of Technology • Transfer of Technology | 12 | 20% |
| 5 | International Business Environment <ul style="list-style-type: none"> • Meaning of International Business Environment • Why company goes to international? | 15 | 25% |

| | | | |
|--|--|--|--|
| | <ul style="list-style-type: none"> • Nature of International Business Environment • Implication of International Business Environment on Indian Business/Economy • WTO (World Trade Organization) | | |
|--|--|--|--|

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------------|--------------------------------------|---------------------------|---------|
| 1 | Francis Cherunilam | Business Environment: Text and Cases | Himalaya Publishing House | Latest |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-----------------|------------------------------------|---------------------------|---------|
| 1 | K Aswathappa | Essentials of Business Environment | Himalaya Publishing House | Latest |
| 2 | Shaikh Salem | Business Environment | Pearson Education | Latest |
| 3 | Vivek Mittal | Business Environment | Excel Books | Latest |
| 4 | Dr. C. B. Gupta | Business Environment | Sultan Chand & Sons | Latest |

Reference Books:

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Business Standard
- Business Today
- International Journal of Business Environment
- Business Strategy and the Environment

CO PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|------|--------|------|-----|------|------|------|-----|-----|------|
| CO1 | High | Medium | Low | Low | High | High | High | Low | Low | High |
| CO2 | High | High | High | Low | High | High | High | Low | Low | High |
| CO3 | High | High | High | Low | High | High | High | Low | Low | High |
| CO4 | High | High | High | Low | High | High | High | Low | Low | High |
| CO5 | High | High | High | Low | High | High | High | Low | Low | High |



School of Management, Commerce & Liberal Arts

BBA (Honors) Programme

BBA Semester III

Course Title: Information System

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | BBA230302 | 4 | 60 | 10% | 30% | 10% | 25% | 25% |

Course Outcomes (COs)

1. Learners should be able to understand the concept and application of Information Systems
2. Learners should be able to create reports and represent data graphically using excel and access.
3. Learners should be able to understand and evaluate the Enterprise software based on the user requirements and the functionality it serves.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Introduction <ul style="list-style-type: none">• Basic Concepts of Information System• Role of data and information, Organization structures• Business Process• Systems Approach and introduction to Information Systems• Types of IS Resources and components of Information System• Transaction Processing System• Management Information System, Expert Systems and Artificial Intelligence | 09 | 15% |
| 2 | Application Software (MS-Office XP 2003) <ul style="list-style-type: none">• MS Excel: Excel basics, rearranging worksheets• Working with graphics, using worksheets as databases, automating “what-if” projects. | 09 | 15% |
| 3 | Application Software (MS-Office XP 2003) <ul style="list-style-type: none">• Paste Special all Option Basic If Formulas, Statistical Functions Lookup Functions, What If Analysis, Conditional Formatting and Working with Charts, Pivot Table and Pivot Chart, Preparation of the Dashboards | 15 | 25% |
| 4 | Application Software (MS-Office XP 2003) <ul style="list-style-type: none">• Overview of Microsoft Access Databases, Design and Create Tables to Store Data, Simplify Data Entry with Forms, Obtain Valuable Information Using Queries, Create Professional Quality Output with Reports. | 12 | 20% |
| 5 | ERP <ul style="list-style-type: none">• Introduction• Integrated Information Management Benefits of ERP, Risks,• Functional modules of ERP software Implementation of ERP, People involved in implementation;• Success and failure in implementation – factors. | 15 | 25% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 50% (Internal Assessment) |
| 2 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|--------------------------------|---------------------------------|----------------|
| 1 | Alexis Leon | Enterprise Resource Planning | Second Edition – TMH | Latest Edition |
| 2 | O'Brien, James A., | Management information systems | Published by McGraw-Hill/Irwin, | Latest Edition |
| 3 | Michael Alexander, Richard Kusleika, John Walkenbach | Excel 2019 Bible | Wiley Publication | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|---|------------------|----------------|
| 1 | Naveen Mishra | Excel with Microsoft Excel: Comprehensive & Easy Guide to Learn Advanced MS Excel | Penman Books | Latest |
| 2 | Joseph Brady | Problem-Solving Cases Using MS Access and Excel | Cengage Learning | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- International Journal of Technology Management and Sustainable Development
- Journal of Information Technology Case and Application Research
- International Journal of Information and Learning Technology

CO PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| CO1 | High | Medium | Low | Low | Low | Low | Low | Low | Low | High |
| CO2 | High | Medium | Low | Low | Low | Low | Low | Low | Low | High |
| CO3 | High | Low | Low | Low | Low | Medium | Low | Low | Low | High |
| CO4 | High | High | High | Low | Medium | Medium | Low | Low | Low | High |
| CO5 | High | Medium | Medium | Medium | Medium | High | Medium | Medium | Low | High |



School of Management, Commerce & Liberal Arts

BBA (Honors) Programme

BBA Semester III

Course Title: Corporate Social Responsibility

| Course Of Category | Course Code | Credit | Contact Hours | Internal | | | External | |
|-----------------------|-------------|--------|------------------|----------|--------------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | BBA230303 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 50% | |

Course Outcomes (COs)

1. Create awareness of the CSR theoretical framework, its ethical foundation and importance to improve the general welfare.
2. Understand the meaning, definition, and nature and appreciate its role in adding human and social values.
3. Identify the key components of corporate social responsibility through case study and real life examples.
4. Provide students with comprehensive knowledge of stakeholders' expectations and sustainability challenges companies face.
5. This will help in inculcating entrepreneurial spirit with give back to the society for enhancing quality of life.
6. Demonstrate students that CSR is viable, when integrated into a global business strategy.

Syllabus:

| Module | Contents | No. of Sessions | Weightage |
|--------|--|-----------------|-----------|
| 1 | Introduction to CSR: <ul style="list-style-type: none"> • Meaning & Definition of CSR, History & evolution of CSR. Concept of Charity, • Corporate philanthropy, Corporate Citizenship, • CSR-an overlapping concept. Concept of sustainability & Stakeholder Management. • CSR through triple bottom line and Sustainable Business; relation between CSR and Corporate governance; • Environmental aspect of CSR. • Chronological evolution of CSR in India; models of CSR in India, Carroll's model; drivers of CSR; • Major codes on CSR; Initiatives in India. | 18 | 30% |
| 2 | International framework for corporate social Responsibility: <ul style="list-style-type: none"> • International framework for corporate social Responsibility, • Millennium Development goals, Sustainable development goals, • Relationship between CSR and MDGs. United Nations (UN) Global Compact 2011. • UN guiding principles on business and human rights. OECD CSR policy tool, ILO tri-partite declaration of principles on multinational enterprises and social policy. | 12 | 20% |
| 3 | CSR-Legislation In India & the world: <ul style="list-style-type: none"> • CSR-Legislation In India & the world. Section 135 of Companies Act 2013.Scope for CSR Activities under Schedule VII, • Appointment of Independent Directors on the Board, and Computation of Net Profit's Implementing Process in India. • The Drivers of CSR in India, • Market based pressure and incentives civil society pressure, • The regulatory environment in India Counter trends. Performance in major business and programs. • Voluntarism Judicial activism. | 15 | 25% |

| | | | |
|---|---|----|-----|
| 4 | Identifying key stakeholders of CSR & their roles: <ul style="list-style-type: none"> Identifying key stakeholders of CSR & their roles. Role of Public Sector in Corporate, government programs that encourage voluntary responsible action of corporations. Role of Nonprofit & Local Self Governance in implementing CSR; Contemporary issues in CSR & MDGs. Global Compact Self-Assessment Tool, National Voluntary Guidelines by Govt. of India. Understanding roles and responsibilities of corporate foundations. Review current trends and opportunities in CSR. CSR as a Strategic Business tool for Sustainable development. Review of successful corporate initiatives & challenges of CSR. Case Studies of Major CSR Initiatives. | 15 | 25% |
|---|---|----|-----|

Basic Text Book

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------------------------------|---------------------------------|-----------|---------|
| 1 | Jean-Pascal Gond and Jeremy Moon | Corporate Social Responsibility | Routledge | Latest |

Reference Books

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-------------------------------------|--|-----------------------------|---------|
| 1 | Sri Ram Murthy Choppakatla | Corporate Social Responsibility- The Indian Corporate Perspective | Scholars' Press | Latest |
| 2 | Ronald Paul Hill and Ryan Langan | Hand book of Research on Marketing and Corporate Social Responsibility | Edward Elgar Publishing Ltd | Latest |
| 3 | Michel Magnan and Giovanna Michelon | Handbook on Corporate Governance and Corporate Social Responsibility | Edward Elgar Publishing Ltd | Latest |

List of Journals / Periodicals / Magazines / Newspapers

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- International Journal of Corporate Social Responsibility
- The CSR Journal
- Business Today

CO PO Mapping

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|------|--------|-----|-----|------|-----|------|-----|------|------|
| CO1 | High | Low | Low | Low | Low | Low | High | Low | High | Low |
| CO2 | High | High | Low | Low | Low | Low | High | Low | High | Low |
| CO3 | High | High | Low | Low | Low | Low | High | Low | High | Low |
| CO4 | High | High | Low | Low | High | Low | High | Low | High | Low |
| CO5 | High | Medium | Low | Low | Low | Low | High | Low | High | Low |
| CO6 | High | Medium | Low | Low | Low | Low | High | Low | High | Low |



School of Management, Commerce & Liberal Arts

BBA (Honors) Programme BBA

Semester III

Course Title: Introduction to Psychology

| Course Of Category | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MDC | BBA230304 | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 50% | |

Course Outcomes (COs)

1. To understand the meaning and important of Psychology in Everyday life
2. To identify the psychosomatic behavior and mental healing.
3. To understand different theories and methods in Psychology
4. To identify barriers to rectify different testing and assessments of Psychology
5. To understand the maximum user friendly techniques for ultimate professional use of the Psychology

Syllabus

| Module | Contents | No. of Sessions | Weightage |
|--------|---|-----------------|-----------|
| 1 | Introduction to Psychology <ul style="list-style-type: none"> • Meaning and definition of Psychology • History of Psychology • Scopes and Branches of Psychology • Role of Psychologist in everyday life • Methods of Psychology • Theory and schools of psychology • Important Key word from Oxford Dictionary of psychology | 15 | 25% |
| 2 | Biology of Behavior with the perspective of psychosomatic <ul style="list-style-type: none"> • What is Psychosomatic? How can we define this? • Types of Behavior pattern • Brain and Behavior • Neurons and Synapses • How to build Healthy Thought process | 15 | 25% |
| 3 | Sensory Processes <ul style="list-style-type: none"> • Sensory Channels • Sensory processes through vision • Sensory processes through hearing • Sensory processes through smell • Sensory processes through Taste • Sensory processes through skin senses • Sensory processes to perception • Development during Infancy to Childhood • Development during Adolescence, adult hood, And Old Age Emotion and Stress <ul style="list-style-type: none"> • Types of Stress • Healthy Emotion • Healthy coping • Neuron pathway | 18 | 30% |

| | | | |
|---|--|----|-----|
| 4 | Psychological Assessment and Testing <ul style="list-style-type: none"> • Important of Testing and Assessment • Who can do Testing and Assessment? • Types of Testing and assessment Behavior Assessment, Personality assessment • Clinical questions • Testing for Special Aptitude | 12 | 20% |
|---|--|----|-----|

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------------|--|-----------------------------|---------|
| 1 | Robert S. Feld Man | Essentials of Understanding Psychology | New Delhi Tata McGrew-Hill. | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---------------------------------------|--|--------------------------|---------|
| 1 | Cornelissesen R. M, Mishra, G & Varna | Foundations Of Indian Psychology, Theories and concept (VOL-1) | New Delhi, India Pearson | Latest |
| 2 | Sdorow, L.M | Psychology | Boston McGraw-Hill | Latest |
| 3 | Clifford T. Morgan | Introduction to Psychology | Excel Books | Latest |

List of Journals / Periodicals / Magazines / Newspapers

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- International Journal of Psychology
- American Psychological Association
- The International Journal of Indian Psychology

CO PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|------|--------|------|--------|------|------|------|--------|--------|------|
| CO1 | High | Medium | Low | Medium | High | High | High | Medium | Medium | High |
| CO2 | High | High | High | Medium | High | High | High | Medium | Medium | High |
| CO3 | High | High | High | Medium | High | High | High | Medium | Medium | High |
| CO4 | High | High | High | Medium | High | High | High | Medium | Medium | High |
| O5 | High | High | High | High | High | High | High | Medium | Low | High |



School of Management, Commerce & Liberal Arts

BBA (Honors) Programme

BBA Semester III

Course Title: Financial Literacy

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| AEC | AEC230303 | 2 | 30 | 20% | 30% | - | 50% | |

Course Outcomes(COs)

1. Increasing familiarities with financial literacy and its different aspects.
2. Leading them towards financial wellbeing by teaching to manage their money.
3. Making them literate about the personal tax structure of India
4. Enable them to understand the process of tax e filing

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | Introduction to Financial Literacy <ul style="list-style-type: none">• Definition and importance of financial literacy• Brief of Financial Inclusion• Industrial revolution and birth of financial literacy• Financial literacy challenges• Personal finance and well being | 9 | 30% |
| 2 | Financial Planning and Financial Institutions <ul style="list-style-type: none">• Types of Financial Institutions• Understanding banking services• Investment avenues and Financial products• Money Management: Challenges, Importance and Strategies | 9 | 30% |
| 3 | Personal Tax <ul style="list-style-type: none">• Introduction to personal tax structure in India for personal taxation• Exemptions and deductions for individuals (with Practical problems)• E filing (Hands on) | 12 | 40% |

Note: Students may conduct a survey on financial literacy at least to 30 – 50 respondents to measure financial literacy level in their surroundings and share the findings in form of report

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------------------------------|---|---|---------|
| 1. | Introduction to financial planning | | Indian institute of banking and finance | Latest |
| 2. | Financial Planning: A ready Reckoner | Sinha, Madhu | McGraw Hill | Latest |
| 3 | Fiancial Literay Basics | Varsha Gondaliya, Vishal Naik, Ramesh M, Divakara Reddy | REST publisher | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Business Standard
- Business Today
- Journal of Behavioural Finance
- Journal of Financial Literacy and Wellbeing

CO PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|------|--------|--------|-----|-----|-----|-----|-----|-----|------|
| CO1 | High | Medium | Low | Low | Low | Low | Low | Low | Low | High |
| CO2 | High | Medium | Low | Low | Low | Low | Low | Low | Low | High |
| CO3 | High | Medium | Medium | Low | Low | Low | Low | Low | Low | High |
| CO4 | High | High | High | Low | Low | Low | Low | Low | Low | High |



School of Management, Commerce & Liberal Arts

BBA (Honours) Programme

BBA Semester III

Course Title: Marketing Strategies for Start Ups

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| SEC | SEC230303 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Exploration of Marketing basics in real world
2. Understanding customer ways of reacting to marketing and various types of customers.
3. Understanding Brand and its importance as well as various techniques of Integrated marketing
4. Exploration of the new buzz social marketing basics

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | Entrepreneurial marketing: Entrepreneurship and marketing interface Introduction, marketing and Entrepreneurship definitions, importance of the Entrepreneurship and marketing interface, Elements of marketing mix Foundations of marketing decision-making Case Study: Versare, Inc Introduction, Five forces in the entrepreneurial marketing environment Case Study: Consumer insight | 8 | 25% |
| 2 | Entrepreneurial market identification Introduction, B2C, B2G and B2B marketing, stages in the buying process, adoption process, the product life cycle, Industrial advertising and promotion Case Study: Big D Custom Screen Printing marketing dilemma Entrepreneurial marketing Segmentation Consumer, industrial, and governmental markets Market segmentation techniques Industry and Competitive analysis Case Study: Funrent.com-success or failure? Entrepreneurial product/service policy Introduction, product, product planning and development process, types of new products/services, Product mix, Branding, Packaging, Labelling Case Study: Computer for the blind | 14 | 50% |
| 3 | Entrepreneurial pricing policy Introduction, fundamental aspects of pricing, methods and factors affecting pricing, General pricing strategies Case Study: Jamie Lloyd and West End ticket prices Entrepreneurial distribution policy Introduction, distribution channel essentials, structure and conflicts, Physical distribution, other distribution channels | 8 | 25% |

| | | | |
|--|--|--|--|
| | Case Study: Gentli Shoes Entrepreneurial Promotion policy Introduction, elements of promotion mix, Social media and digital technology, types of entrepreneurial campaigns, Promotion budget Case Study: Shoney's International entrepreneurial marketing The entrepreneurial marketing plan | | |
|--|--|--|--|

NOTE: - The sessions in the 3rd semester will be conducted in combination with in-house faculty and industry experts in different marketing domains, using different pedagogies to give meaningful insights and real-time experience in entrepreneurial marketing.

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr.No. | Author/s | Name of the Book | Publisher | Edition |
|---------------|---------------------------------------|--|--|----------------|
| 1 | Robert D. Hisrich and Veland Ramadani | Entrepreneurial Marketing A Practical Managerial Approach | EE Edward Elgar Publishing Cheltenham, UK Northampton, MA, USA | Latest |
| 2 | Phillip Kotler | Marketing Management | Pearson | Latest |

Reference Books:

| Sr.No. | Author/s | Name of the Book | Publisher | Edition |
|---------------|---|---|-----------------------|----------------|
| 1 | Dr. Bhatia. R.C | Entrepreneurship: Business and Management | Sultan Chand and Sons | Latest |
| 2 | Bruce R. Barringer | Entrepreneurship: Successfully Launching New Ventures | Pearson Education | Latest |
| 3 | <u>Janakiram. B.</u> , <u>Rizwana. M.</u> | Entrepreneurship development | Excel Books | Latest |
| 4 | Khanna. S.S. | Entrepreneurial Development | Excel Books | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

1. Journal of Entrepreneurship
2. Journal of Small Business Management
3. Journal of Entrepreneurship & Management
4. AMC Indian Journal of Entrepreneurship

CO PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|--------|--------|--------|--------|--------|--------|--------|-----|--------|--------|
| CO1 | High | Medium | Medium | Medium | Medium | Low | Medium | Low | Medium | Low |
| CO2 | Medium | Medium | Medium | Medium | Medium | Medium | High | Low | Low | Medium |
| CO3 | High | High | High | Medium | Medium | Medium | High | Low | Medium | Medium |
| CO4 | Low | High | High | Medium | Medium | High | Medium | Low | Medium | Medium |
| CO5 | High | Medium | Medium | Medium | Medium | Low | Medium | Low | Medium | Low |



School of Management, Commerce & Liberal Arts

BBA (Honors) Programme

BBA Semester III

Course Title: Understanding India

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| IKS | IKS230303 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To understand the meaning and important of Indian Knowledge System
2. To identify the Actual foundational concepts for science and technology.
3. To understand the values of Humanities and Social Science.

Syllabus

| Module | Contents | No. of Sessions | Weightage |
|--------|---|-----------------|-----------|
| 1 | Introduction to Knowledge <ul style="list-style-type: none">• The Indian Knowledge System- an Overview• The Vedic Corpus• Philosophical System• Wisdom through the Ages | 10 | 34% |
| 2 | Foundational Concepts For Science And Technology <ul style="list-style-type: none">• Linguistics• Number System and Units of Measurement• Knowledge: Frame work and Classification | 10 | 33% |
| 3 | Humanities and Social Science <ul style="list-style-type: none">• Health, Wellness and Psychology• Governance and Administration | 10 | 33% |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---|--|---------------------------------|---------|
| 1 | B.Mahadevan , Vinayak Rajat Bhat Narendra Pavan R.N | Introduction to Indian knowledge system- Concepts-Applications | PHI Learning Private Limited | Latest |

Reference Books

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------------|--|-----------------------|---------|
| 1 | Amit Jha | Traditional Knowledge System In India | Atlantic | Latest |
| 2 | Prof. Saroj Sharma | Scientific Basis Of Indian Knowledge System | Shipra Publication | Latest |

CO PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|--------|--------|--------|------|--------|--------|--------|--------|--------|------|
| CO1 | Medium | High | Medium | High | High | High | High | Medium | Medium | High |
| CO2 | Medium | Medium | Low | Low | High | Medium | Medium | High | High | High |
| CO3 | High | High | Low | Low | Medium | High | Medium | High | High | High |



School of Management, Commerce & Liberal Arts

BBA (Honors) Programme

BBA Semester IV

Course Title: Production and Operations Management

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | BBA230401 | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To understand how production systems are used in managing operations
2. To understand the managerial responsibility for Operations
3. To gain an understanding and appreciation of the principles and applications relevant to the
Planning, design, and operations of manufacturing/service firms.
4. To develop skills necessary to effectively analyze and synthesize the many inter-relationships inherent in complex socio-economic productive systems.
5. To apply quantitative methods to assist in decision making on operations management and strategy.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | INTRODUCTION TO PRODUCTION AND OPERATION MANAGEMENT: <ul style="list-style-type: none">• Introduction to operations management• Role of operations management in total management system, and interface between the operation systems and systems of other functional areas,• Process planning and process design,• Production planning and control: basic functions of production planning and control,• Production cycle, characteristics of process technologies, project, job shop, assembly, batch and continuous,• Inter relationship between product life cycle and process life cycle. | 09 | 15% |
| 2 | SCHEDULING AND CONTROL OF PRODUCTION OPERATIONS: <ul style="list-style-type: none">• Aggregate planning,• Operations scheduling and product sequencing: sequencing of products in multi-product multi stage situations,• Plant capacity and line balancing; Plant layout, different types of layouts Designs,• Facility location and the factors influencing location;• Maintenance management: objectives, failure concept, reliability, preventive and breakdown maintenance, replacement policies. | 12 | 20% |
| 3 | QUALITY CONTROL: <ul style="list-style-type: none">• Standards and specifications, quality assurance and quality circles, statistical quality control• Control charts for variables, average, range and Standard deviation; Control charts for attributes, Fraction defective and number of defects, acceptance• Sampling plans, and OC curve work-study. Various Techniques in the methods study for identifying the most appropriate method; Work measurement, its uses and different methods, computation of allowance and | 12 | 20% |

| | | | |
|---|--|----|-----|
| | allowed time. | | |
| 4 | INVENTORY AND STORE MANAGEMENT: <ul style="list-style-type: none"> • Basic Economic Order Quantity (EOQ) Model • Quantity Discount Models; • Spare Parts Inventory; • Material Resources Planning; Manufacturing Resource Planning; • Purchasing Objectives. • Objectives of stores management, requirements for efficient. Management of stores, safety stock inventory control, different systems of inventory control types of inventory | 12 | 20% |
| 5 | SOME SPECIAL TOPICS: <ul style="list-style-type: none"> • Costs systems of inventory control ABC, VED and FNSD analyses, • Value analysis, importance in cost reduction, concepts and procedures. • Case studies on Production and Operations Management. | 15 | 25% |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------------------------|--------------------------------------|-----------|---------|
| 1 | Aswathappa K. and SridharaBhat | Production and Operations Management | HPH | Latest |

Reference Books:

| Sr. No. | Author/s | Name of theBook | Publisher | Edition |
|---------|--|--------------------------------------|--|---------|
| 1 | Kanishka Bedi | Production and Operations Management | Oxford University Press. | Latest |
| 2 | James R Evans, David A. Collier | Operations Management | Cengage Learning, | Latest |
| 3 | Jay Heizer, Barry Render, Chuck Munson | Operations Management | Pearson | Latest |
| 4 | Panneerselvam R | Production and Operations Management | Prentice Hall India Learning Private Limited | Latest |
| 5 | Stevenson J. William | Operations Management | Tata McGraw Hill | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals order to get relevant topic/information pertaining to the subject.

- International Journal of Operations & Production Management
- Journal of Operations Management
- Journal of Supply Chain Management
- Manufacturing & Service Operations Management
- Journal of Business Logistics
- European Journal of Operational Research
- Journal of the Operational Research Society.

CO PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|--------|--------|--------|--------|------|--------|--------|--------|--------|--------|
| CO1 | HIGH | HIGH | HIGH | MEDIUM | HIGH | MEDIUM | LOW | MEDIUM | LOW | LOW |
| CO2 | HIGH | MEDIUM | HIGH | MEDIUM | LOW | LOW | MEDIUM | LOW | MEDIUM | LOW |
| CO3 | MEDIUM | HIGH | HIGH | LOW | LOW | MEDIUM | LOW | LOW | LOW | MEDIUM |
| CO4 | LOW | HIGH | MEDIUM | LOW | HIGH | LOW | LOW | MEDIUM | LOW | LOW |
| CO5 | LOW | HIGH | LOW | LOW | LOW | LOW | LOW | LOW | LOW | LOW |



School of Management, Commerce & Liberal Arts

BBA (Honors) Programme

BBA Semester IV

Course Title: Business Law

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | BBA230402 | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs):

1. Gaining knowledge of the branches of law which relate to business transactions
2. Making students aware about the legal implications for unpaid seller
3. Enhancing awareness regarding various negotiable instruments used in business
4. Making students acquainted with legal formalities for registering business as limited Company.
5. In the modern business world where consumer is king, Increasing knowledge for consumer's rights

Syllabus

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | THE INDIAN CONTRACT ACT 1872 <ul style="list-style-type: none"> • Overview of the subject: brief discussions on the topics covered in syllabus • Indian Contract Act: Definitions & Classification of contracts • Essentials of a valid contract, Offer and acceptance, capacity to contract, free consent, legality of object, void agreements, performance of contract • Discharge of contract • Remedies for breach of contract • Quasi Contracts | 15 | 25% |
| 2 | THE SALE OF GOODS ACT 1930 <ul style="list-style-type: none"> • Sale and agreement to sell • Sale vs. hire purchase, • Sale and barter, exchange, bailment • Condition and warranties • Transfer of property, performance of a contract, rights of an unpaid seller. | 09 | 15% |
| 3 | THE NEGOTIABLE INSTRUMENTS ACT 1881 <ul style="list-style-type: none"> • Concept and significance of Socio-cultural Environment, Social responsibility concept and stake holder approach • Notes, bills and cheques. • Parties to a negotiable instrument, holder and holder in due course • Negotiation and Endorsement , | 12 | 20% |
| 4 | THE COMPANIES ACT 1956 <ul style="list-style-type: none"> • Nature and types of companies, Formation of Companies, Memorandum of association • Articles of association, prospectus • Meeting Process & winding up Process | 15 | 25% |
| 5 | THE CONSUMER PROTECTION ACT 1986 | 09 | 15% |

| | | | |
|--|--|--|--|
| | <ul style="list-style-type: none"> Definitions, consumer protection councils, dispute redressing agencies and forums & its enforcement State and national commission, Penalties. | | |
|--|--|--|--|

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-------------|----------------------------|--------------|---------|
| 1 | N.D. KAPOOR | Elements of Mercantile Law | Sultan Chand | Latest |

| Evaluation | | |
|------------|---|---------------------------|
| 1 | Assignments/ Quizzes/Class Participation / Role Play/Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-----------------------|--------------------------------|---------------------|---------|
| 1 | M. C. & Vivek Kuchhal | Elements of Business Laws | Vikas Publication | Latest |
| 2 | Rohini Agrawal | Mercantile and Commercial Laws | Taxmann's Publisher | Latest |
| 3 | C L Bansal | Business and Corporate Laws | Excel Books | Latest |
| 4 | Tejpal Seth | Business Laws | Pearson | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Business Standard
- Business Today
- NLIU Journal of Business Laws
- Journal of Business Law and Ethics

CO PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|------|--------|-----|-----|------|-----|------|-----|------|------|
| CO1 | High | Low | Low | Low | Low | Low | High | Low | High | Low |
| CO2 | High | High | Low | Low | Low | Low | High | Low | High | Low |
| CO3 | High | High | Low | Low | Low | Low | High | Low | High | Low |
| CO4 | High | High | Low | Low | High | Low | High | Low | High | Low |
| CO5 | High | Medium | Low | Low | Low | Low | High | Low | High | Low |



School of Management, Commerce & Liberal Arts

BBA (Honors) Programme

BBA Semester IV

Course Title: Project Management

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | BBA230403 | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs):

1. Understand the contemporary and cutting edge Project Management.
2. Analyze stakeholder expectations and engagement to ensure a successful project outcome.
3. Manage projects effectively including the management of scope, time, costs, and quality, ensuring satisfying the needs of the project.
4. Apply project management practices in a variety of organizational and international settings.
5. Apply processes required to manage the procurement of a project, including acquiring goods and services from outside the organization.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | BASICS OF PROJECT MANAGEMENT: <ul style="list-style-type: none"> • Concept of Project, Attributes of a Project • Importance of Project Management • Project Management Process, Project Lifecycle • Project Stakeholders • Project Management Structures • Choosing Appropriate Project Management Structure • Implications of Organizational Culture • Main Causes of Project Failure • Project Definition, Defining Scope, Establishing Priorities • Creating the Work Breakdown Structure (WBS), integrating the WBS with the organization • Coding the WBS for information system • Project Roll Up, Process Breakdown Structure, Responsibility Matrices | 9 | 15% |
| 2 | PROJECT IDENTIFICATION: <ul style="list-style-type: none"> • Selection of product, identification of market preparation of feasibility study/report Project formulation, Evaluation of risks preparation of Project report. • Selection of location & site of the project • Factors affecting location - policies of Central – State Government towards location – Legal aspects of project management. • Project Planning - Estimating Project Times and Costs • Factors Influencing Quality of Estimates Estimation Guidelines for Time, Costs and resources • Macro versus Micro Estimating • Methods for Estimating Project Times and Costs • Level of detail, Developing Budgets • Types of Costs, Refining estimates • Developing a Project Plan • Developing the Project Network • From Work Package to Network • Constructing a Project Network • Activity-On-Arrow, Fundamentals, Network Computation process | 12 | 20% |

| | | | |
|---|---|----|-----|
| | <ul style="list-style-type: none"> • Using the Forward and Backward pass information • Level of Detail for activities • Extended Network techniques. | | |
| 3 | PROJECT SCHEDULING : <ul style="list-style-type: none"> • Types of Project Constraints Classification of Scheduling Problem • Resource Allocation Methods, Splitting, Multitasking Benefits of scheduling resources • Multi Project resource Schedules, Rationale for reducing project duration Options for accelerating Project Completion, Concept and construction of a Project Cost – Duration Graph, Practical • Considerations. Managing Risk: Risk Management process – Risk Identification, Risk Assessment, Risk Response • Development, Contingency Planning, Risk Response Control, Change Control Management • Project Organization The Project Manager Role and Responsibilities of the project Manager, Planning, Organizing, Controlling, Skills of the Project Manager | 12 | 20% |
| 4 | PROJECT EVALUATION <ul style="list-style-type: none"> • Progress and Performance Management and Evaluation: Structure of a Project Monitoring Information System, Project Control Process, Monitoring Time Performance, Need for an Integrated • Information System, Developing a status report and index to monitor progress, Forecasting final project cost, and other control issues. Project Audit and Closure: Project Audit, Project Audit Process, Project Closure, Team, Team member and Project Manager Evaluations. | 12 | 20% |
| 5 | SPECIAL TOPICS IN PROJECT MANAGEMENT <ul style="list-style-type: none"> • Computers, e-markets and their role in Project management • Case studies in Project management. • Project Management soft wares. | 15 | 25% |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-------------|---|-------------|---------|
| 1 | Kim Heldman | PMP - Project Management Professional - “Study Guide” | Wiley India | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|------------------|--------------------------------|---------------------|---------|
| 1 | Sadhan Choudhary | Project Management | McGraw Hill | Latest |
| 2 | Prasanna Chandra | Project Management | McGraw Hill | Latest |
| 3 | P. K. Mattoo | Project Appraisal | | Latest |
| 4 | Vasant Desai | Project Management | Himalaya | Latest |
| 5 | Sitanshu Khatua | Project Management & Appraisal | Oxford Publications | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals order to get relevant topic/information pertaining to the subject.

- International Journal of Managing Projects in Business.
- Harvard Business Review.
- International Journal of Construction Project Management.
- The Engineering Project Organization Journal.

CO PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| CO1 | HIGH | HIGH | HIGH | MEDIUM | HIGH | MEDIUM | LOW | MEDIUM | LOW | LOW |
| CO2 | HIGH | MEDIUM | HIGH | MEDIUM | LOW | LOW | MEDIUM | LOW | MEDIUM | LOW |
| CO3 | MEDIUM | HIGH | HIGH | LOW | LOW | MEDIUM | LOW | LOW | LOW | MEDIUM |
| CO4 | LOW | HIGH | MEDIUM | LOW | HIGH | LOW | LOW | MEDIUM | LOW | LOW |
| CO5 | MEDIUM | HIGH | LOW | LOW | MEDIUM | LOW | MEDIUM | LOW | MEDIUM | MEDIUM |



School of Management, Commerce & Liberal Arts

BBA (Honors) Programme

BBA Semester IV

Course Title: Human Resource Management

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Minor | BBA230404 | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To demonstrate knowledge about fundamental principles, generalizations, and/or theories and concepts in human resources management and Human Resource Planning.
2. To apply course material to improve thinking, problem solving, and decision making along with recruitment and selected and Induction in the advanced human resources management arena.
3. To assess potential and to prepare an employee through appropriate feedback and guidance for higher responsibilities which connects with monetary rewards and to act as a tool for Human Resource Development.
4. To secure industrial peace and harmony by providing machinery and procedure for the investigation and settlement of Industrial Disputes.
5. To create a productive, engaged workforce and to eliminate the perception that organized labor and management have a perpetually adversarial relationship.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | Introduction to HRM and Human Resource Planning (HRP): <ul style="list-style-type: none"> • Introduction, Meaning, Definition of HRM • Scope of HRM, • Functions of HRM, • Role of Human Resource Officer (HRO) Human Resource Planning (HRP)- <ul style="list-style-type: none"> • Introduction, Meaning, Definition, • HRP Process, • Factors affecting HRP | 09 | 15% |
| 2 | Job Analysis and Design, Recruitment & Selection and Induction: Job Analysis and Design <ul style="list-style-type: none"> • Introduction, meaning and definition of Job Analysis • Features • Methods of Job Analysis • Job Description, Job Specification • Job Evaluation and Difference Recruitment & Selection <ul style="list-style-type: none"> • Introduction, definition and meaning of Recruitment, • Sources of Recruitment. • Introduction, definition and meaning of Selection, • Selection Process Induction <ul style="list-style-type: none"> • Introduction, Meaning and Definition of Induction • Induction Process | 12 | 20% |
| 3 | Training and Management Development & Performance Appraisal: Training and Management Development- <ul style="list-style-type: none"> • Introduction, definition and meaning of Training and Development • Training Process • Methods of Training • Concept and Methods of | 15 | 25% |

| | | | |
|---|--|----|-----|
| | <p>Management Development</p> <p>Performance Appraisal</p> <ul style="list-style-type: none"> • Introduction, definition and meaning of Performance Appraisal • Performance Appraisal Process • Performance Appraisal Methods - (360 degree method, Management by Objectives (MBO), Paired Comparison Method, Behaviorally Anchored Rating Scale) | | |
| 4 | <p>Industrial Conflict, Dispute Resolution:</p> <p>Industrial conflict</p> <ul style="list-style-type: none"> • Meaning • Nature of Industrial conflict <p>Industrial disputes</p> <ul style="list-style-type: none"> • Meaning • Causes • Types <p>Grievance Handling</p> <ul style="list-style-type: none"> • Introduction, Meaning and Definitions, • Sources of Grievance • Procedure of Grievance Management | 12 | 20% |
| 5 | <p>Industrial Relations, Trade Union and Current Trends in HRM</p> <p>Industrial Relations</p> <ul style="list-style-type: none"> • Definition & Characteristics • Objectives of Industrial Relations, • Factors affecting IR, <p>Trade Union -</p> <ul style="list-style-type: none"> • Introduction , Meaning and Definition of Trade Unions • Features and Objectives of Trade unions <p>Current Trends in HRM -</p> <ul style="list-style-type: none"> • Employee Retention • Employee Engagement • Talent Management • Diversity at work place | 12 | 20% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments/ Quizzes/Class Participation / Role Play/Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|----------------------------|---|---------------------------|----------------|
| 1 | Gary, D. | Fundamentals of Human Resource Management: Content, Competencies and Applications | Pearson Education India | Latest |
| 2 | Aswathappa, K. E. M. A. L. | Human resource management | Human resource management | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---|--|-----------------------|----------------|
| 1 | Hollenbeck, J. R., Noe, R. A., & Gerhart, B. A. | Human resource management: Gaining a competitive advantage | McGraw-Hill Education | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- International Journal of Human Resource Management, Sage Publication
- Business Standards
- Harvard Business Review

CO-PO MAPPING

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| CO1 | High | High | High | Medium | High | Medium | Medium | Medium | High | High |
| CO2 | High | High | High | High | Medium | Low | Medium | Medium | High | High |
| CO3 | High | High | High | High | Medium | Medium | Medium | Low | Medium | High |
| CO4 | High | High | High | High | High | Medium | Medium | Low | Medium | High |
| CO5 | High | High | High | High | High | Medium | Medium | Medium | Medium | High |



School of Management, Commerce & Liberal Arts

BBA Programme

BBA Semester IV

Course Title: Soft Skills

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| AEC | AEC230404 | 2 | 30 | 20% | 30% | | 50% | |

Course Outcomes (COs)

1. Learners should understand the nuance of communication at workplace
2. The learners will be able to create various forms of business letters
3. The learners will be able to create various forms of business reports

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|------------|
| 1 | Communication in the Workplace Fundamentals of Business Writing: Adaptation and the Selection of Words, Construction of Clear Sentences and Paragraphs, Writing for a Positive Effect | 09 | 30% |
| 2 | Basic Patterns of Business Messages The Writing Process and the Main Forms of Business Messages, Directness in Good-News and Neutral Messages, Indirectness in Bad-News Messages, Indirectness in Persuasive Messages, Communicating in the Job-Search Process | 12 | 40% |
| 3 | Fundamentals of Report Writing Basics of Report Writing, Types of Business Reports, Graphics in Reports and Other Documents | 09 | 30% |

| Evaluation | | |
|------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 50% (Internal Assessment) |
| 2 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--|----------------------------------|-------------|---------|
| 1 | Kathryn Rentz, Marie E. Flatley, Paula Lentz | Lesikar's Business Communication | McGraw Hill | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-------------------------------------|---|------------------------|---------|
| 1 | Laura Brown, Rich Karlgaard | The Only Business Writing Book You'll Ever Need | W. W. Norton & Company | Latest |
| 2 | Robert W. Bly and Regina Anne Kelly | The Encyclopedia of Business Letters, Faxes, and E-mail | RWW Career Press | |
| | Andy R Kraus (Author) | Business Correspondence: How To Write A Business Letter | Garcia Books | 2024 |

List of Journals / Periodicals / Magazines / Newspapers:

1. SMART-Journal of Business Management Studies
2. Gurukul Business Review-GBR
3. Vision-The Journal Of Business Perspective
4. IIM Kozhikode Society & Management Review

CO PO MAPPING

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|------|--------|--------|------|--------|--------|--------|--------|------|------|
| CO1 | High | Medium | High | High | High | Medium | Medium | Medium | High | High |
| CO2 | Low | High | Medium | High | Medium | Medium | Low | Low | High | High |
| CO3 | Low | High | Medium | High | Medium | Medium | Low | Low | High | High |



School of Management, Commerce & Liberal Arts

BBA (Honors) Programme

BBA Semester IV

Course Title: Finance and Funding for Start Up

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| SEC | SEC230404 | 2 | 30 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Finance and its importance in the real world
2. Various ways of development of finance for the company
3. Understanding the importance of accounting and its impact
4. Importance of ratio and how its effects the balance sheet of the company

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | THE ENTREPRENEURIAL ENVIRONMENT. <ul style="list-style-type: none">• Introduction to Finance for Entrepreneurs.• Developing the Business Idea. ORGANIZING AND OPERATING THE VENTURE <ul style="list-style-type: none">• Organizing and Financing a New Venture.• Preparing and Using Financial Statements.• Evaluating Operating and Financial Performance. | 08 | 25% |
| 2 | PLANNING FOR THE FUTURE <ul style="list-style-type: none">• Managing Cash Flow.• Types and Costs of Financial Capital.• Law Considerations When Obtaining Venture Financing. CREATING AND RECOGNIZING VENTURE VALUE. <ul style="list-style-type: none">• Projecting Financial Statements.• Valuing Early-Stage Ventures.• Venture Capital Valuation Methods | 08 | 25% |
| 3 | STRUCTURING FINANCING FOR THE GROWING VENTURE. <ul style="list-style-type: none">• Professional Venture Capital.• Other Financing Alternatives EXIT AND TURNAROUND STRATEGIES. <ul style="list-style-type: none">• Harvesting the Business Venture Investment.• Financially Troubled Ventures: Turnaround Opportunities? CAPSTONE CASES. Case 1. Eco-Products, Inc. Case 2. Spatial Technology, Inc. | 14 | 50% |

NOTE: -

The sessions in the 4th semester will be conducted jointly with in-house faculty and industry experts. Further, the sessions shall also be conducted with government officials and investors who are directly involved in financing and policymaking in the startup ecosystem.

| Evaluation | | |
|------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------------------|--|------------------|----------------|
| 1 | J. Chris Leach Ronald W. Melicher | Entrepreneurial Finance | Cengage | Latest |
| 2 | Frank J Fabozzi | Entrepreneurial Finance and Accounting for High-Tech Companies | MIT Press | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|------------------------------------|--|---------------------------|----------------|
| 1 | Smith J K, Smith R L and Bliss R T | Entrepreneurial Finance: Strategy, Valuation and Deal Structure | Stanford University Press | Latest |
| 2 | Marco Da Rin and Thomas Hellman | Fundamentals of Entrepreneurial Finance | Oxford University Press | Latest |
| 3 | Chris Leach and Ronald Melicher | Entrepreneurial Finance | New Delhi | Latest |
| 4 | Marco Da Rin and Thomas Hellman | Fundamentals of Entrepreneurial Finance | Oxford University Press | Latest |
| 5 | Gregory Becker | Accounting Principles: The Ultimate Beginner's Guide to Accounting | Gregory Becker | Latest Edition |
| 6 | Berkeley | Accounting for Small Business Owners | Tycho Press | Latest Edition |

CO PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| CO1 | High | High | Medium | Low | Low | Low | Medium | Low | Medium | Low |
| CO2 | Medium | Medium | Medium | Low | Low | Low | High | Low | Low | Medium |
| CO3 | High | High | High | Low | Medium | Low | High | Low | Medium | Medium |
| CO4 | High | High | High | Low | Low | Low | Medium | Low | Medium | Medium |
| CO5 | High | High | Medium | Low | Low | Low | Medium | Low | Medium | Low |



School of Management, Commerce & Liberal Arts

BBA (Honors) Programme

BBA Semester IV

Course Title: Emerging Technologies

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| VAC | VAC230402 | 2 | 30 | - | 20% | 30% | - | 50% |

Course Outcomes (COs)

1. Learners should be able to understand the concept and application..
2. Learners should be able to apply the tools, functions in Power BI and Tableau at the beginners level
3. Learners should be able to create a dashboard.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Introduction <ul style="list-style-type: none"> • Introduction and concept of Data Warehousing and Cloud Computing. • Overview of concepts of –Big Data, Data Mining, Artificial Intelligence and other emerging technologies. | 10 | 33% |
| 2 | Tableau <ul style="list-style-type: none"> • Introduction to tableau, tableau products • Data connections in tableau interface, Visualizing data, putting everything together in a dashboard | 10 | 33% |
| 3 | Power BI <ul style="list-style-type: none"> • Introduction to Power BI, Power BI Desktop and Data Transformation • Data Visualization and Power BI Service | 10 | 34% |

| Evaluation | | |
|------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 50% (Internal Assessment) |
| 2 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------------------------|--|--|---------|
| 1 | Paul Raj Ponniah | Data warehousing fundamentals for IT professionals | John Wiley&Sons, Inc., Hoboken, New Jersey | Latest |
| 2 | Marleen Meier David Baldwin | Mastering Tableau 2019.1 Second Edition | Published by Packt Publishing Ltd. | Latest |
| 3 | Microsoft | Microsoft Power Bi Dashboards Step By Step | Pearson Education | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-------------------|--|----------------------|---------|
| 1 | <u>Dr.Abhinav</u> | Data Visualization using Python Programming- - A Technical Guide for Beginners, Researchers and Data Analyst | Shashwat Publication | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- International Journal of Technology Management and Sustainable Development
- Journal of Information Technology Case and Application Research
- International Journal of Information and Learning Technology

CO PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|--------|--------|--------|--------|--------|------|--------|-----|-----|------|
| CO1 | High | High | High | Medium | Low | High | Low | Low | Low | High |
| CO2 | Medium | Medium | Medium | Medium | Medium | High | Medium | Low | Low | High |
| CO3 | High | High | High | High | Medium | High | Low | Low | Low | High |



SYLLABUS

Master of Business Administration Program

2 years || 4 Semesters

Full-Time

Program Batch

2023 – 2025



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester I

Course Title: Managerial Economics

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MBA101MAE | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To equip the students of management with techniques of managerial economics to enable them its relevance decision making.
2. Analyze the demand and supply conditions and assess the position of a company
3. To understand the production and cost function using curves and theories.
4. Design competition strategies, including costing, pricing, product differentiation, according to the natures of products and the structures of the markets.
5. To understand the Concept of National Income, Fiscal and Monetary Policies and Macro Environment in business decisions

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|---|-----------------------|------------------|
| 1 | Introduction to Economics: Concept of scarcity- trade-offs, opportunity cost, basic economic problems. microeconomics and macroeconomics , Managerial functions of Economics, Nature and scope of managerial economics, relation with other subjects, fundamentals concepts of Managerial Economics, Decision Making Process, Decision making under certainty, uncertainty, and Risk. | 10 | 17% |
| 2 | Theory of Utility and Demand & Supply Analysis: Theory of Utility & Demand utility, Marginal Utility, Law of Marginal Utility Demand Analysis- meaning of demand, determinants of demand, demand equation, Law of Demand, elasticity of demand, types of elasticity, measurement of elasticity, Demand forecasting-meaning, types and measurement, Supply Analysis- supply- meaning, determinants, Law of Supply, types of supply market equilibrium. | 16 | 27% |

| | | | |
|----------|---|-----------|------------|
| 3 | Production and Cost Function: Production-meaning, Determinants of production Functions in the Short and Long Run, laws of production-law of variable proportions and laws of returns to scale, isoquants, Cost Functions – Determinants of Costs – Cost Forecasting - Short Run and Long Run Costs – Short-term and Long-term Cost Curves, Iso Cost Curve, Type of Costs, Break-even analysis- BEP | 14 | 22% |
| 4 | Market Structure: Product Markets - Determination Under Different Markets Market Structure – Perfect Competition Monopoly, Monopolistic Competition, Duopsony, Duopoly Oligopoly Pricing and Employment of Inputs Under Different Market Structures – Price Discrimination - Degrees of Price Discrimination. | 10 | 17% |
| 5 | Macro Economics and Economic Transition Introduction to National Income, National Income Concepts, National Income Determination, Economic Indicators, Technology and Employment - Issues and Challenges, Business Cycles Phases, Macro-Economic Environment , Economic Transition in India - A quick Review - Liberalization, Privatization and Globalization | 10 | 17% |

| Evaluation | | |
|-------------------|--|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Presentation etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|----------------------------|---|-----------------------------|-------------------------|
| 1 | Pindyck, Rubinfeld & Mehta | Microeconomic | Pearson Education | 7 th Edition |
| 2 | P.L. Mehta | Managerial Economics - Analysis, Problems and Cases | Sultan Chand, New Delhi | Latest Edition |
| 3 | D. N. Dwivedi | Managerial Economics | Vikas Publication Pvt. Ltd. | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|--|-------------------|---------------------|
| 1 | Christopher R Thomas and S. Charles Murice | Managerial Economics – Concepts and Applications | Tata McGraw Hill. | Latest Edition 2005 |
| 2 | N. Gregory Mankiw | Principles of Economics | | 2015 |



School of Management, Commerce & Liberal Arts

MBA Programme

Course Title: Principles & Practices of Management

| Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|---------------|----------------------|-----------------|-----------------------|-----------|-----------------|-----------|
| MBA102PPM | 3 | 45 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Understanding the concept and nature of Management and recognize various perspectives on Management.
2. To develop strategic planning and summarize the concept and complete the process of organizing.
3. To develop an understanding of staffing, Directing and Controlling
4. To develop an understanding of leadership and Styles
5. To develop strategic decision-making strategies in an organization.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | Basic concepts of management: <ul style="list-style-type: none">● Introduction, Meaning and Definition● Need and Scope of Management● Combination of Art & Science, Management as a Profession● Different schools of management thought – Behavioural, Scientific, Systems, and Contingency● Contribution of Management Thinkers: Taylor, Fayol, Elton Mayo | 12 | 20% |
| 2 | Functions of Management-I Planning <ul style="list-style-type: none">● Concept, Meaning and Definition,● Nature & Importance,● Steps of planning● Limitations,● Management by objectives (MBO) Organizing <ul style="list-style-type: none">● Concept, Meaning and Definition,● Nature & Importance,● Principles● Centralization, Decentralization, | 13 | 22% |

| | | | |
|----------|--|-----------|------------|
| | <ul style="list-style-type: none"> ● Organization Structures- Line and Staff Authority, Functional, Product, Matrix, Geographical, Customer | | |
| 3 | Functions of Management-II Staffing: <ul style="list-style-type: none"> ● Concept, Meaning and Definition ● Nature & Importance, ● Steps of staffing ● Concept of knowledge worker. Directing: <ul style="list-style-type: none"> ● Concept, Meaning and Definition ● Nature & Importance. Controlling: <ul style="list-style-type: none"> ● Concept, Meaning and Definition ● Nature & Importance, ● Process of controlling, ● Control Techniques. | 13 | 22% |
| 4 | Leadership: <ul style="list-style-type: none"> ● Concept, Meaning and Definition ● Nature & Importance, ● Attributes of a leader, ● Developing 10 leaders across the organization, ● Leadership Grid. | 10 | 16% |

| | | | |
|----------|--|-----------|------------|
| 5 | Decision making: <ul style="list-style-type: none"> ● Concept, Meaning and Definition ● Nature & Importance, ● Process ● Types of decisions. ● Problems in decision making, ● Case Study: Planning, Decision Making, Leadership | 12 | 20% |
|----------|--|-----------|------------|

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments/ Quizzes/Class Participation / Role Play/Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|--------------------------|---------------------|----------------|
| 1 | Dr. Jayasankar | Principles of Management | Margham Publication | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------------------|----------------------------|------------------|----------------|
| 1 | Peter F. Drucker | The Practice of management | Harper Collins | Latest |
| 2 | P.C Tripathi and P.N Readdy | Principles of Management | Mcgrawhill | Latest |

| | | | | |
|---|--------------|---|------------------------|--------|
| 3 | L. M. Prasad | Principles & Practice of Management | Sultan chand & sons | Latest |
|---|--------------|---|------------------------|--------|

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Journal of International Business Studies
- International Journal of Business and Management
- Business Standards
- Harvard Business Review



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester I

Course Title: Marketing Management

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MBA103MAM | 4 | 60 | | | | | |
| | | | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To familiarize with the basic concept and techniques of marketing management, marketing mix and influence of environment on the marketing decisions.
2. To understand various concepts of product and role and importance of various pricing methods on marketing decisions.
3. To create awareness about channel intermediaries and various elements of promotion mix.
4. To analyze the marketing research and various steps involved in marketing research process.
5. Highlighting the ethical issues and developments in marketing along with understanding the current trends in marketing environment.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Introduction to Marketing Management <ul style="list-style-type: none">● Concept, nature, scope and importance of marketing● Marketing concepts and its evolution● Marketing mix● Strategic marketing planning● Types of marketing environment – micro & macro and its impact on marketing decisions● Marketing segmentation and targeting● Concept of Positioning and Differentiation and its types● Buyer behavior and consumer decision making process | 11 | 15% |
| 2 | Product and Pricing Decisions <ul style="list-style-type: none">● Concept & Classification of products● Product line & product mix● Stages in Product Life Cycle● Price Decisions● Objectives of pricing● Types of pricing methods● Factors affecting price determination | 15 | 30% |

| | | | |
|----------|--|-----------|------------|
| | <ul style="list-style-type: none"> ● Pricing policies and strategies ● Discounts & rebates | | |
| 3 | Distribution Channels & Promotion Decisions <ul style="list-style-type: none"> ● Distribution channel intermediaries ● Decisions related to channel management ● Concept of retailing and wholesaling ● Concept of promotion decisions ● Promotion mix ● Elements of promotion mix ● Determining advertising budget ● Media selection ● Sales promotion – tools and techniques | 15 | 30% |
| 4 | Marketing Research & Marketing Organization and Control <ul style="list-style-type: none"> ● Meaning and scope of marketing research ● Process of marketing research ● Concept of marketing organizations ● Organizing marketing operations ● Controlling marketing operations ● Marketing implementation and control | 11 | 15% |

| | | | |
|-------------------|--|--------------------------|------------|
| 5 | Issues and Developments in Marketing <ul style="list-style-type: none"> • Social, ethical and legal aspects of marketing • Marketing of services • Green marketing • International marketing • Relationship marketing • Current trends in marketing | 8 | 10% |
| Evaluation | | | |
| 1 | Assignments/ Quizzes/ClassParticipation / Role Play/Projectetc. | 30%(Internal Assessment) | |
| 2 | InternalExamination | 20%(InternalAssessment) | |
| 3 | ExternalExamination(UniversityExam) | 50%(External Assessment) | |

Basic Text Books:

| Sr. No. | Author/s | Nameof the Book | Publisher | Edition |
|---------|-----------------------------------|------------------------------------|-------------------|----------------|
| 1 | Philip Kotler & Kevin Lane Keller | Marketing Management | Pearson Education | Latest Edition |
| 2 | Philip Kotler, Gary Armstrong | Principles of Marketing Management | Pearson Education | Latest Edition |

Reference Books:

| Sr. | Author/s | Name of | Publisher | Edition |
|-----|----------|---------|-----------|---------|
|-----|----------|---------|-----------|---------|

| No. | | theBook | | |
|-----|------------------------------|--|------------------|----------------|
| 1 | Stanton, Etzel & Walker | Fundamentals of Marketing | McGraw Hill | Latest Edition |
| 2 | Saxena, Rajan | Marketing Management | Tata-McGraw Hill | Latest Edition |
| 3 | McCarthy, E.J. | Basic Marketing: A managerial approach | Irwin, New York | Latest Edition |
| 4 | Lamb Hair, Sharma & McDaniel | Principles of Marketing | Cengage | Latest Edition |

List of Journals/Periodicals / Magazines/ Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Journal of Marketing by Sage Publication
- Journal of Services Marketing
- Journal of Marketing Management
- Business Standard



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester I

Course Title: Organisation Behaviour

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| MBA104ORB | 4 | 60 | Theory | Continuous Assessment | Practical | Theory | Practical |
| | | | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Learners will be able to understand and apply the concept of individual, group and organization behavior at work.
2. To demonstrate the understanding of individual behavior in organizations due to diversity, attitudes, job satisfaction, emotions, personality, perception, motivation that influence the decision making and work.
3. To with concept of leadership and power.
4. Explain how organizational change and culture affect working relationships within organizations.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | <p>What is Organization Behaviour (OB): Concept, Managerial Roles, Disciplines that Contribute to OB and Challenges and Opportunities.</p> <p>Diversity: Demographic Characteristics, Levels of Diversity, Biographical Characteristics and Diversity Management Strategies</p> | 12 | 20% |

| | | | |
|----------|---|-----------|------------|
| 2 | <p>Attitude and Job Satisfaction: Concept and Importance, Job Attitudes, Causes of Job Satisfaction and Impact of Job Dissatisfaction</p> <p>Emotions and Mood: Concept, Sources and Applications</p> <p>Perception: Concept, Factors Influencing, Attribution Theory, and Individual Decision Making.</p> | 12 | 20% |
| 3 | <p>Personality and Value: Concept, Framework and Big Five Personality, Dark Triad, Hofsted's Framework of Cultural Values, Linking Personality and Value.</p> <p>Motivation: Concept, Early and Contemporary Theories, Job Characteristics Model.</p> <p>Foundation of group Behaviour: Definition stages of Group Development, Group Decision Making. Groups and Teams: Types of teams.</p> | 12 | 20% |
| 4 | <p>Leadership: Concept, trait, behavior, contingency, contemporary theories</p> <p>Organizational culture: Concept, how learn culture, what culture do, how to learn culture</p> | 12 | 20% |
| 5 | <p>Organization Change: forces of change, resistance to change, overcoming resistance to change, managing change using Lewin's Model</p> | 12 | 20% |

| | | | |
|--|-------------------------------------|--|--|
| | and Kotter's Eight-Step Plan. | | |
| | Stress, Sources and managing stress | | |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------|--------------------------|----------------------------------|--------------------------------|
| 1 | Stephen P. Robins | Organisational Behavior, | PHI Learning / Pearson Education | latest edition or 2018 |
| 2 | Fred Luthans | Organisational Behavior | McGraw Hill | 11 th Edition, 2001 |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---------------------------------|-------------------------------------|------------------|----------------|
| 1 | Hellrigal, Slocum and Woodman | Organisational Behavior | Cengage Learning | 2007 |
| 2 | Ivancevich, Konopaske & Maheson | Oranisationl Behaviour & Management | Tata McGraw Hill | 2008 |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Harvard Business Review
- Times Ascent and Times of India Editorial Page
- Journal of Human Values (IIM Calcutta Journal)



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester I

Course Title: Production and Operation management

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MBA105POM | 3 | 45 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

- 1 Apply the skills which are necessary to analyze and synthesize the inter relationships inherent Operation and production system.
2. To understand the evolution of MRPII and enterprise resource planning used in managing operations.
3. To develop the knowledge of Quality Circles and Quality Control in business operations.
4. To enhance the skills of inventory management and inventory control like ABC, VED, FNSD analyses and value analysis.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Introduction to Production and Operation management: Introduction to operations management, role of operations management in total management system, and interface between the operation systems and systems of other functional areas, process planning and process design, production planning and control: basic functions of production planning and control, production cycle, characteristics of process technologies, project, job shop, assembly, batch and continuous, inter relationship between product life cycle and process life cycle. | 10 | 17% |
| 2 | Scheduling and control of Production Operations: Aggregate planning, operations scheduling and product sequencing: sequencing of products in multi- product multi stage situations, plant capacity and line balancing; Plant layout, different types of layouts Designs, facility location and the factors influencing location; Maintenance management: objectives, failure concept, reliability, preventive and breakdown maintenance, replacement policies. | 16 | 27% |
| 3 | Quality Control: Standards and specifications, quality assurance and quality circles, statistical quality control: control charts for variables, average, range and standard deviation; Control charts for attributes, fraction defective and number of defects, acceptance sampling plans, and OC curve work-study. Various techniques in the methods study for identifying the | 14 | 22% |

| | | | |
|----------|--|-----------|------------|
| | most appropriate method; Work measurement, its uses and different methods, computation of allowance and allowed time. | | |
| 4 | Inventory and store management: Basic Economic Order Quantity (EOQ) Model; Quantity Discount Models; Spare Parts Inventory; Material Resources Planning; Manufacturing Resource Planning; Purchasing Objectives. Objectives of stores management, requirements for efficient. Management of stores, safety stock inventory control, different systems of inventory control types of inventory; Costs systems of inventory control ABC, VED and FNSD analyses, value analysis, importance in cost reduction, concepts and procedures. | 10 | 17% |

| Evaluation | | |
|-------------------|--|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Presentation etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|--------------------------------------|--|-------------------------------|
| 1 | Aswathappa K. and SridharaBhat | Production and Operations Management | HPH | 2 nd Edition, 2010 |
| 2 | Jay Heizer, Barry Render, Chuck Munson | Operations Management | Pearson | 12th Edition, 2020 |
| 3 | Panneerselvam R | Production and Operations Management | Prentice Hall India Learning Private Limited | 3rd Edition, 2012 |
| | Stevenson J. William | Operations Management | Tata McGraw Hill | 9th Edition, 2009 |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---------------------------------|--------------------------------------|--------------------------|-------------------|
| 1 | . Kanishka Bedi | *Production and Operations Managemen | Oxford University Press. | 2nd Edition, 2007 |
| 2 | James R Evans, David A. Collier | Operations Management | Cengage Learning, | 3rd Edition, 2007 |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester I

Course Title: Accounting for Managers

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MBA106AFM | 4 | 60 | | | | | |
| | | | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To communicate the major management accounting concepts related to planning, directing, controlling and decision making.
2. To make the students aware about using management accounting tools for pricing and budgetary control.
3. To understand the concept of responsibility accounting and the role of a manager in the process of responsibility accounting.
4. Analyze cost-volume-profit techniques to determine optimal managerial decisions.
5. Enable the students to determine standard prices of materials, labour and overheads as well as to analyze the difference between standard and actual prices through variance analysis.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|---|-----------------------|------------------|
| 1 | Introduction to Accounting Meaning and Scope of Accounting <ul style="list-style-type: none">• Definition & scope of accounting• Objectives of accounting• Accounting v/s Bookkeeping Preparation of books of Accounts: <ul style="list-style-type: none">• Journals, Subsidiary books, three column cash book, ledgers and trial balance.• Depreciation- Straight line and Written down Value Methods. | 9 | 15% |
| 2 | Final Accounts of Company <ul style="list-style-type: none">• Accounting Cycle• Journal Rules of debit and credit• Relationship between Journal and Ledger• Rules regarding posting• Preparation of Journal, Ledger and Trial Balance, Profit and Loss A/c, Balance Sheet | 12 | 20% |
| 3 | Budget and Budgetary Control <ul style="list-style-type: none">• Meaning and definition of Budget & Budgetary Control• Advantage & Limitations of Budgetary Control & Essentials of Effective Budgeting• Classification of Budget & concept of Zero Base Budgeting• Practical Examples of Cash Budget | 15 | 25% |
| 4 | Standard Costing <ul style="list-style-type: none">• Definition, Meaning, significance and Applications of standard Costing• Standard Cost for Material, Labour & Overhead | 12 | 20% |

| | | | |
|----------|--|-----------|------------|
| | <ul style="list-style-type: none"> Variance Analysis & Control | | |
| 5 | Marginal costing <ul style="list-style-type: none"> Distinction between absorption costing and marginal costing- Cost volume profit (CVP) Analysis- Break Even Analysis- Margin of safety. | 12 | 20% |

| Evaluation | | |
|-------------------|---|--------------------------|
| 1 | Assignments/ Quizzes/ClassParticipation / Role Play/Projectetc. | 30%(Internal Assessment) |
| 2 | InternalExamination | 20%(InternalAssessment) |
| 3 | ExternalExamination(UniversityExam) | 50%(External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Nameof the Book | Publisher | Edition |
|----------------|----------------------|-------------------------------|----------------------------------|-------------------------|
| 1 | M.Y. Khan, P.K. Jain | Management Accounting | Tata McGraw Hill | 8 th Edition |
| 2 | R. Kishore | Advance Management Accounting | Taxman allied Services Pvt. Ltd. | 3 rd Edition |

Reference Books:

| Sr. No. | Author/s | Name of theBook | Publisher | Edition |
|----------------|----------------------------|---------------------------------------|-------------------|--------------------------|
| 1 | Horngren, Sundem, Stratton | Introduction to Management Accounting | Pearson Education | 16 th Edition |

| | | | | |
|---|--------------------|-----------------------|----------------------|-------------------------|
| 2 | Anthony, Robert N. | Management Accounting | Hawkins and Merchant | 3 rd Edition |
|---|--------------------|-----------------------|----------------------|-------------------------|

List of Journals/Periodicals/Magazines/Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- The Management Accountant Journal
- Management Account Research
- The management Accountant
- International Journal of Management, Account & Economics



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester I

Entrepreneurship and Start-up

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MBA107EAS | 3 | 45 | | | | | |
| | | | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To know various theories of entrepreneurship and trends.
2. To identify various issues and challenges in starting a new venture.
3. To understand innovation and its implications
4. To create entrepreneurial mindset and to know how to start a startup with practical.

Syllabus:

| Module. No. | Module Description | Hours | Weight |
|--------------------|---|--------------|---------------|
| 1 | Basis of entrepreneurship and start-up <ul style="list-style-type: none"> ● Entrepreneurship concept ● Entrepreneurship as a Career ● Entrepreneurial Personality ● Characteristics of Successful, Entrepreneur ● start-up concept ● Knowledge and Skills Requirements for Business Start-up ● Self-assessment of Skills and Abilities ● Action Plans for Self-development | 10 | 22 |
| 2 | Business Planning and Enterprise Start-up <ul style="list-style-type: none"> ● The Importance of Business Planning Expectations of Lenders and Investors ● Business Plan Format and Structure ● Planning and Funding High-tech and High-growth Start-ups Start-up opportunities | 15 | 34 |

| | | | |
|---|---|----|----|
| | <ul style="list-style-type: none"> • The New Industrial Revolution – • The Big Idea- Generate Ideas with Brainstorming- Business Start-up - Ideation- Venture Choices – • The Rise of The start-up Economy – • The Six Forces of Change- • The Start-up Equation – | | |
| 3 | Start-up Capital Requirements and Legal Environment <ul style="list-style-type: none"> • Identifying Start-up capital Resource requirements estimating Start-up cash requirements – • Develop financial assumptions Constructing Launch strategy to reduce risks- • The Legal Environment- Approval for New Ventures Taxes or duties payable for new ventures– | 10 | 22 |
| 4 | Start-up Survival and Growth: <ul style="list-style-type: none"> • Stages of growth in a new venture- • Growing with the market - Growing within the industry- Venture life patterns- • Reasons for new venture failures Scaling Ventures – preparing for change - Leadership succession. • Support for growth and sustainability of the venture. • Planning for Harvest and Exit: Dealing with Failure: Bankruptcy, • Exit Strategies Selling the business - Cashing out but staying in-being acquired- Going Public (IPO) – Liquidation. | 10 | 22 |

| Evaluation | | |
|------------|--------------------------------|---------------------------|
| 1 | Assignments / Startup Projects | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |

| | | |
|---|--|---------------------------|
| 3 | External Examination (University Exam) | 50% (External Assessment) |
|---|--|---------------------------|

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------------------|--|-----------------------|----------------|
| 1 | S.S. Khanka, Gupta. C.B. | Entrepreneurship & Small Business Management | Sultan Chand and Sons | Latest Edition |
| 2 | Sami Uddin | Entrepreneurship Development in India | Mittal Publications | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---|---|-----------------------|---------|
| 1 | Dr. Bhatia.R.C | Entrepreneurship: Business and Management | Sultan Chand and Sons | Latest |
| 2 | Bruce R. Barringer | Entrepreneurship: Successfully Launching New Ventures | Pearson Education | Latest |
| 3 | <u>Janakiram. B.</u> , <u>Rizwana. M.</u> | Entrepreneurship development | Excel Books | Latest |
| 4 | Khanna. S.S. | Entrepreneurial Development | Excel Books | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

1. Journal of Entrepreneurship
2. Journal of Small Business Management
3. Journal of Entrepreneurship & Management
4. AMC Indian Journal of Entrepreneurship



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester II

Course Title: Business Statistics

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MBA201BUS | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To understand the basic Statistics Concepts.
2. To identify structure and Business Problems in a mathematical form.
3. Apply the Statistical concepts to other business courses.
4. Validate Statistical statements relating to economics, business and finance.
5. Discuss data analysis by using measures of central tendency and demonstrate dispersion in data.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | Probability and Random Variables <ul style="list-style-type: none">• Definition of Probability• Some Important Terms and Concepts• Theorems on Probability• Bayes' Theorem• Random Variables• Probability Mass Functions• Discrete Distribution Function• Continuous Distribution Function• Two-Dimensional Discrete random Variable• Two-Dimensional Continuous random Variable | 12 | 20% |
| 2 | Measures of Central Tendency <ul style="list-style-type: none">• Criteria for good measures of central tendency• Arithmetics mean, median and mode for grouped and ungrouped data• Measures of dispersion• Concept of dispersion• Absolute and relative measure of dispersion• Range ,variance , standard deviation• Coefficient of variance• Quartile deviation and Coefficient of Quartile deviation | 12 | 20% |
| 3 | Correlation and Regression <p>Correlation :</p> <ul style="list-style-type: none">• Concept of Correlation• Positive & negative correlation• Karl pearson's Coefficient of correlation <p>Regression :</p> <ul style="list-style-type: none">• Concept of regression• Two regression equations• Regression Coefficients and properties | 12 | 20% |

| | | | |
|----------|---|-----------|------------|
| 4 | Testing of Hypothesis <ul style="list-style-type: none"> • Introduction • Statistical assumption • Level of significance • Confidence level • Type -I & Type -II error • Critical Value • Small sample test – t and F test • Chi-square Test | 12 | 20% |
| 5 | Time Series Analysis and Curve Fitting <ul style="list-style-type: none"> • Objectives and uses of Time series analysis • Components of Time series • Measurement of Trend by Moving averages method Curve Fitting <ul style="list-style-type: none"> • Introduction • Fitting of Linear curves • Least squares method. | 12 | 20% |

| Evaluation | | |
|-------------------|---|--------------------------|
| 1 | Assignments/ Quizzes/ClassParticipation / Role Play/Projectetc. | 30%(InternalAssessment) |
| 2 | InternalExamination | 20%(InternalAssessment) |
| 3 | ExternalExamination(UniversityExam) | 50%(External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of theBook | Publisher | Edition |
|----------------|--------------------------------|----------------------------|-----------------------|----------------|
| 1 | Ravish R singh, Mukul Bhatt | Probability And Statistics | McGraw Hill Education | Frist Edition |

Reference Books:

| Sr. No. | Author/s | Name of theBook | Publisher | Edition |
|---------|-----------------------------------|---|----------------------------------|-----------------|
| 1 | S.G Gupta | Fundamental of Statistics | Sultan Chand & Sons, Delhi | Twelfth Edition |
| 2 | D.N.Elhance | Fundamental of Statistics | KitabMahal,Alhabad | Second Edition |
| 3 | Halg Lee | Foundation of Applied Statistical Methods | Springer Internatinal Publishing | Latest |
| 4 | GoranKauermann, Christian Heumann | Statistical Fundamental , Reasoning and interence | Springer Internatinal Publishing | Latest |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester II

Course Title: Human Resource Management

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MBA202HRM | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To understand basic of Human Resource Management
2. To understand importance of Human Resource Planning & Recruitment and Selection
3. To understand induction and Training and Development
4. To have glance to Performance Appraisal, Job analysis and Job
5. To understand basic of Compensation, Grievance and Employee Welfare Management

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Introduction to Human Resources Management: <ul style="list-style-type: none">• Introduction, Concept, Meaning and Definition of Human Resource Management• Functions of HRM• Scope of HRM• Roles of Human Resource Manager• Changing role of HRM• HR Structure and Strategy;• Role of Government and Personnel Environment including MNCs. | 11 | 18% |
| 2 | Human Resource Planning, Recruitment and Selection: HRP <ul style="list-style-type: none">• Concept, Meaning and Definition• Process• Need of HRP Recruitment and Selection <ul style="list-style-type: none">• Concept of recruitment• Factors and Sources of Recruitment• Glance of recruitment policy• Concept of Selection | 12 | 20% |

| | | | |
|----------|---|-----------|------------|
| | <ul style="list-style-type: none"> • Selection Process • Selection test and Interview | | |
| 3 | Induction & Training and Development Induction: <ul style="list-style-type: none"> • Concept and Meaning • Objective of Induction • Process of Induction Training and Development: <ul style="list-style-type: none"> • Concept, Meaning and Definition • Needs of training • Methods of training • Evaluation of training • Concept of Management Development • Difference between Training and Development | 12 | 20% |
| 4 | Performance Appraisal, Job analysis and Job Evaluation: Performance Appraisal: <ul style="list-style-type: none"> • Concept • Needs • Types • 360 Degree Job Analysis: <ul style="list-style-type: none"> • Job Description • Job Specification • Process of Job analysis • Methods Job Evaluation: <ul style="list-style-type: none"> • Concept | 13 | 22% |

| | | | |
|----------|---|-----------|------------|
| | <ul style="list-style-type: none"> Objectives Techniques | | |
| 5 | Compensation, Grievance and Employee Welfare Management Compensation Management: <ul style="list-style-type: none"> Concept of rewards and incentives Wage and Salary Administration Grievance Management: <ul style="list-style-type: none"> Concept Causes and Redressal procedure Need of Redressal process Employee Welfare Management: <ul style="list-style-type: none"> Concept Types and benefits | 12 | 20% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments/ Quizzes/Class Participation / Role Play/Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|---------------------------|---------------------------|----------------|
| 1 | V.P Michael | Human Resource Management | Himalaya Publishing House | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------------------|---------------------------|------------------|----------------|
| 1 | Gary Dessler & Biju Varrkey | Human Resource Management | Pearson | Latest Edition |
| 2 | K Aswathappa & Sadhna Dash | Human Resource Management | Mc Graw Hill | Latest Edition |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Journal of Human Resource Management, Sage publication
- Business Standards
- Harvard Business Review



School of Management, Commerce & Liberal Arts
MBA Programme
MBA Semester II

Course Title: Information Technology for Managers

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MBA203ITM | 4 | 60 | | | | | |
| | | | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Learner should be able to perform editing, formatting functions on text, pictures and table, and producing a mail merge
2. Learners should be able to demonstrate the use and utility of functions, formulas, organizing and displaying large amounts and complex data.
3. Learners should understand basic use of Enterprise software, and its role in integrating business functions
4. Learners will understand the scope of e-business platforms and related technology for offering better service to customers.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | Application Software (MS-Office XP 2003) MS Word: word basics, formatting text and documents, introduction to mail merge & macros. MS Excel: Excel basics, rearranging worksheets, working with graphics, using worksheet as databases, automating “what-if” projects. MS PowerPoint : PowerPoint basics, creating presentation MS Access: Database creation, screen/form design, report generation using wizard | 15 | 25% |
| 2 | Paste Special all Option Basic If Formulas, Statistical Functions Lookup Functions, What If Analysis, Conditional Formatting and Working with Charts, Pivot Table and Pivot Chart, Preparation of the Dashboards | 10 | 21% |
| 3 | E-Business: Fundamentals, E-Business framework, E-Business application, Technology Infrastructure for E-Business. E-Business Models: Elements of Business models, B2B, B2C models 10 5. Payment Systems: Type of E-payment, digital token-based e-payment, smart card, credit card payment systems, risk on e-payment, designing e-payment 6. Security Environment: Security Threats, Technology Solutions, Client-server security, data and message security, document security, firewalls. Ethical Social and Political issues in ecommerce. | 10 | 21% |

| | | | |
|---|--|----|-----|
| 4 | ERP-Introduction; Integrated Information Management; Benefits of ERP, Risks, Functional modules of ERP software.; Implementation of ERP, People involved in implementation; Success and failure in implementation – factors. | 10 | 21% |
|---|--|----|-----|

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------------------|--------------------------|---|----------------|
| 1 | Kamlesh K. Bajaj & Debjani Nag | E-Commerce | Tata McGraw Hills, New Delhi, | Latest Edition |
| 2 | Ravi Kalakotta & Whinston | Frontiers of E-Commerce | Pearson Education, Reprint 2009 New Delhi | Latest Edition |
| 3 | Parag Kulkarni & P.K. Chande, | IT Strategy for Business | 1st edition Oxford University Press 2008 | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|-------------------------|------------------|----------------|
| 1 | R. Kalakotta & M. Robinson, “E-Business: Roadmap for Success”, Pearson Education | | | Latest Edition |

| | | | | |
|---|--|--|--|----------------|
| | Reprint 2009, New Delhi. | | | |
| 2 | 1. Enterprise Resource Planning – Alexis Leon – Second Edition – TMH | | | Latest Edition |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- International Journal of Technology Management and Sustainable Development
- Journal of Information Technology Case and Application Research
- International Journal of Information and Learning Technology



School of Management, Commerce & Liberal Arts
MBA Programme
MBA Semester II

Course Title: Financial Management

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MBA204FIM | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. The understanding of how the Indian financial system works.
2. The students have foundation of financial principles like concepts of time value of money & present value
3. Enhancing the financial analytical skills which helps in taking investment decisions
4. The knowledge of managing working capital finance
5. Increase capability to use financial concepts leverage and capital structure in business organisation.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|----------|--|----------------|------------|
| 1 | Introduction of Financial Management <ul style="list-style-type: none">• Meaning and Goals of Financial Management (FM) (Profit v/s Wealth)• Indian Financial System - Structure and types of financial markets and instruments• Functions of finance Financing Decision, Investment Decision, Dividend Decision and Liquidity Decision | 12 | 20% |
| 2 | Concept of time value of money <ul style="list-style-type: none">• Time Preference for Money, Compound Value, Present Value, Value of an Annuity Due, Compound Value of an Annuity, Present Value of an Annuity | 6 | 10% |
| 3 | Capital Budgeting <ul style="list-style-type: none">• Capital Budgeting – Meaning, definition & characteristics• Investment Evaluation Criteria, Net Present Value Method, Internal Rate of Return Method, Profitability Index, Payback, Discounted Payback Period, Accounting Rate of Return Method, NPV v/s IRR (Sums) | 15 | 25% |
| 4 | Working Capital Management | 15 | 25% |

| | | | |
|----------|--|-----------|------------|
| | <ul style="list-style-type: none"> Principles of working capital, Working Capital Cycle, Determinants of working capital Cash Management - technique-managing cash inflow and managing cash outflow techniques Inventory Management Receivable Management Sources of Working capital management | | |
| 5 | Leverage & Capital Structure <ul style="list-style-type: none"> Financial and Operating Leverage Measures of Financial Leverage, Degree of Financial Leverage, Degree of Operating Leverage and Degree of Combined Leverage Capital Structure Theories: Net Income approach, Net Operating Income approach | 12 | 20% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------------|---|-------------------------------------|----------------|
| 1 | M.Y. Khan & P.K. Jain | Financial Management - Text Problem and Cases | Tata McGraw Hill Publishing Co.Ltd. | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---|--|------------------------------|----------------|
| 1 | I. M. Pandey | Financial Management - Theory and Practices | Vikas Publishing House | Latest Edition |
| 2 | R. P. Rustog | Financial Management - Theory Concepts and Practices | Taxmann Publication | Latest Edition |
| 3 | J.V. Horne & J.M. Wachowicz | Fundamentals of Financial Management | McGraw Hill Higher Education | Latest Edition |
| 4 | R.A. Brealey, S.C. Myers, F. Allen & P. Mohanty | Principles of Corporate Finance | Prentice Hall | Latest Edition |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- The Journal of Finance
- Journal of Financial Economics
- Business Today
- Journal of Banking & Finance
- Journal of International Money & Finance



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester II

Course Title: Professional Skills and Etiquettes

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MBA205PSE | 2 | 30 | | | | | |
| | | | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Demonstrate an understanding of professionalism in terms of workplace behaviors and Business meetings.
2. Adopt attitudes and behaviors consistent with standard workplace expectations.
3. Presenting oneself with finesse and making others comfortable in a business setting & developing basic etiquettes in order to succeed in corporate culture and multi culture challenges.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | <p>Business Etiquettes: An Overview</p> <p>Understanding business etiquette, Minimum standards required by etiquette practice, Example of organizational culture, Knowledge and appreciation of courtesy and good manners at work. Significance of Business Etiquettes in 21st Century Professional Advantage Need and Importance of Professionalism.</p> <p>Meeting Etiquettes: Managing a Meeting- Meeting agenda, Meeting logistics, Minute taking, protocols during the meeting; duties of the chairperson, Ground rules for conducting meeting, effective meeting Strategies, Preparing for the meeting, Conducting the meeting, Evaluating the meeting,</p> | 10 | 33% |
| 2 | <p>Workplace Etiquette: Personal Appearance - Formal Dressing, Casual Dressing, Accessories for Men & Women, Footwear, General Appearance, what to wear for different occasions. Using the right tone of voice, managing your volume in business settings, Sounding Confident. Dealing with bad breath, Using Perfume</p> <p>Etiquette for Personal Contact- Introductions, Getting the names right, Handshakes, Facial Expressions, Eye Contact, Hand gestures & Posture, proximity</p> | 12 | 40% |

| | | | |
|----------|---|----------|------------|
| | Etiquette in and around the Office- Conversations at Work, Dealing with Colleagues, Difficult People and Issues Professionally ; Dealing with Confidential Issues in the Office, Dealing with Ethical Dilemmas. Office party etiquette- appearance, attire, attendance, food conversations, introductions, entertaining customers. | | |
| 3 | Presentation Etiquette: How to design great presentations – Colour scheme, font size, content, spellings, animation, how to make effective presentations – Body language, confidence, Common mistakes during presentations. Multi-Cultural Challenges -Multi-cultural Etiquette, Examples of Cultural Insensitivity, Cultural Differences and their Effects on Business Etiquette. | 8 | 27% |

| Evaluation | | |
|-------------------|---|--------------------------|
| 1 | Assignments/ Quizzes/ClassParticipation / Role Play/Projectetc. | 30%(Internal Assessment) |
| 2 | InternalExamination | 20%(InternalAssessment) |
| 3 | ExternalExamination(UniversityExam) | 50%(External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Nameof the Book | Publisher | Edition |
|----------------|-----------------|---------------------------|------------------------|---------------------|
| 1 | Raghu Palat | Indian Business Etiquette | Jaico Books publishers | latest edition 5 |

| | | | | |
|---|--------------------------------|----------------------------------|------------------------------------|----------------|
| 2 | Barbara Pachter Marjorie Brody | Complete Business Etiquette | Handbook Prentice Hall | latest edition |
| 3 | Sarvesh Gulati | Corporate Grooming and Etiquette | Rupa Publications India Pvt.Ltd | 2012 Edition |

Reference Books:

| Sr. No. | Author/s | Name of theBook | Publisher | Edition |
|----------------|---------------------------------------|--|------------------|----------------|
| 1 | Nancy Mitchell | Etiquette Rules: A Field Guide to Modern Manners | Wellfleet Press | Latest Edition |
| 2 | Lillian H. Chaney, Jeanette S. Martin | The Essential Guide to Business Etiquette | | Latest Edition |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester II

Course Title: Business Research Methods

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MBA206BRM | 4 | 60 | | | | | |
| | | | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Understanding the basic nature and purpose of Research and its advantages to business
2. Ability to know & classify between various Primary and Secondary sources of data
3. Knowledge of Sampling Techniques used to draw sample in research
4. Ability to design questionnaire – a structured way to collect primary data which is helpful in business research
5. Learn how to write a Research Report, research paper/ research article

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|---|-----------------------|------------------|
| 1 | Introduction to Business Research <ul style="list-style-type: none">• Concept & Definition,• Classification of Business research viz. Basic vs. Applied Research,• Problem Identification vs. Problem Solving Research,• Cross Sectional vs. Longitudinal Research,• Quantitative Vs. Qualitative Research• Methods of Knowing: Scientific & Non-Scientific methods (Name the types of non-scientific methods only),• Characteristics of a good scientific research• Types of research design (Exploratory and Conclusive)• Different types of errors in business research• Meaning of terms: "Concept ", "Construct" and "Definition" in relation to business research• Different types of variables in business research• Definition of hypothesis• Types of hypotheses• Role of hypothesis in research, Qualities of a good hypothesis• Business Research Process | 15 | 25% |
| 2 | Data Collection <ul style="list-style-type: none">• Difference between terms: "Data" and "Information",• Difference between Primary Data & Secondary Data. Their relative merits & de-merits,• Various sources of secondary data (Internal & External) | 15 | 25% |

| | | | |
|----------|--|-----------|------------|
| | <ul style="list-style-type: none"> • General Idea of survey methods • Four Survey Methods viz. Telephonic Survey, Personal Survey, Electronic Survey and Mail Survey, • Comparison of four survey methods on various parameters, Anonymity, Response Rate, Control on data collection environment, Diversity of questions, Interviewer's bias, Use of physical stimuli, Sample control, quantum of data • Definition of Observation: When observation method is suitable, Advantages and Limitations of Observation Method | | |
| 3 | Sampling and Scaling Methods. <ul style="list-style-type: none"> • Difference between Sample and Census • Sampling Procedure • Factors affecting Sample Size determination • Probabilistic and Non- Probabilistic Sampling Methods • Meaning of scale and Attitude scale • Types of primary scale (Nominal, ordinal, interval, ratio) • Various Comparative and Non-comparative attitude Scales | 12 | 20% |
| 4 | Design of Questionnaire, Data preparation <ul style="list-style-type: none"> • Design of Questionnaire: Definition of Questionnaire, Process of questionnaire design, • Importance of pre- testing of questionnaire • Data Preparation: Process of Data Preparation (Questionnaire Checking, Editing, Coding, Transcribing, Data Cleaning, Statistical Adjusting the data), | 9 | 15% |
| 5 | Report writing <ul style="list-style-type: none"> • Types of research report, • Need for report writing • Contents/format of research report), Ethics in research | 9 | 15% |

| | | | |
|--|--|--|--|
| | <ul style="list-style-type: none"> • Types of Audiences • Research Paper/ Research article writing | | |
|--|--|--|--|

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---------------------------|---------------------------|------------------|----------------|
| 1 | Donald Cooper & Schindler | Business Research Methods | Tata McGraw Hill | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|---------------------------|---------------------------------------|----------------|
| 1 | Naresh Malhotra | Marketing Research | Pearson Publications | Latest Edition |
| 2 | Churchill | Marketing Research | Dryden Press Harcourt Publications | Latest Edition |
| 3 | Zikmud, | Business Research Methods | Engage Publishing | Latest Edition |
| 4 | G. C. Beri | Marketing Research | Tata McGraw Hill Education | Latest Edition |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Organizational Research Methods
- The Qualitative Report
- International Journal of Social Research Methodology



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester II

Course Title: Experiential Project

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MBA207EXP | 3 | 45 | 0 | 0 | 50% | 0 | 50% |

Course Outcomes (COs)

1. Project work is the best way to practice what you have learnt.
2. The purpose of including an Experiential project report in the program is to provide you an opportunity to summarize your learning in a systematic manner.
3. It will enable you to apply your conceptual knowledge in a practical situation and to learn the art of presenting your experience/findings in a coherent report.
4. As managers, you are constantly seeking information to base your decision.
5. The objective is to equip the students with the knowledge of actual functioning of an organization and problems faced by them for exploring feasible solutions.

During the months of January after completing 1st Semester Examinations, Group of 3-4 students will have to undergo a 3-4 Weeks internship in plant training on real life problems in Business organization, Corporate House, NGO, Social Welfare, Contemporary Issue, Banking & Insurance sector, IT Sector and other Manufacturing and industrial organizations.

This internship requires that the Group would be assigned a project work and guide(s) by the organization and University/School under whom the candidate would complete the assigned study. On the satisfactory completion of the work the organization would issue a completion certificate to the candidate concerned.

On completion of internship, The Group of students will have to submit a report on his work to the department (2 copies) and also a copy of the same to the organization concerned. The student will also have to defend his report at a viva voice examination arranged by the department. Detail guidelines will be issued via SIP Hand Book.

| Evaluation | | |
|-------------------|---|--------------------------|
| 2 | Internal Assessment(Report, Viva voice) | 50%(Internal Assessment) |
| 3 | External Examination (final Viva voice and Presentation with file submission) | 50%(External Assessment) |



SYLLABUS MBA3rd SEM

Master of Business Administration Program

2 years || 4 Semesters

Full-Time

Program Batch

2023 – 2025



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester III

Course Title: Summer Internship Project

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MBA301SIP | 6 | 90 | 0 | 0 | 50% | 0 | 50% |

Course Outcomes (COs)

1. To provide the conceptual knowledge in a practical situation.
2. To provide real life experiences to develop managerial decision making skills
3. To provide an opportunity to summarize the learning in a systematic manner.
4. To learn art of writing and presenting the experience/findings in a coherent report.
5. To equip the students with the knowledge of actual functioning of an organization and problems faced by them for exploring feasible solutions.

Course Outline

After completing 2nd Semester Examinations, group of students will have to undergo a 4-6 Weeks internship in plant training on real life problems in Business organization, Corporate house, banking & Insurance sector, IT Sector and other manufacturing and industrial organizations.

This internship requires that the group of students would be assigned a project work and guide(s) by the organization and University/School under whom the group of candidates would complete the assigned task. On the satisfactory completion of the work the organization would issue a completion certificate to the group of students concerned.

On completion of internship, Students will have to submit a report on his work to the department. The student will also have to defend his report at a viva voce examination arranged by the department. Detail guidelines will be issued during the internship tenure.

| Evaluation | | |
|-------------------|--|--------------------------|
| 2 | Internal Assessment(Report, Viva voce) | 50%(Internal Assessment) |
| 3 | External Examination (final Viva voce and Presentation with file submission) | 50%(External Assessment) |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester III

Course Title: Taxation

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| VAC | MBA302TAX | 3 | 45 | | 30% | 20% | | 50% |

Course Outcomes (COs)

1. Learner should be able to understand the concept and application of taxation Systems.
2. The main objective of this course is to acquaint the students with corporate taxation concepts and various tax & financial planning devices leading to better grasp of the issues regarding corporate decision making.
3. Providing necessary inputs to the students for handling real life business problems efficiently using appropriate concepts of taxation laws.
4. To acquaint them with the salient features of taxation laws but emphasis is laid on sound concepts and their managerial implications focusing on financial planning

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | Income Tax – Introduction & Salary Income Basic concepts and History Residential status & incidence of tax Charging section Incomes exempt from tax Income under the head “salary” | 10 | 22% |
| 2 | Business - Profession Income Income under the head “Profits and gains of business or profession” section 28 to 32 Income under the head “Profits and gains of business or profession” section 33 to 44 | 12 | 27% |
| 3 | Capital Gain & Other Provisions Income under the head “ Capital gains” Clubbing of Income Set off and carry forward of losses Deductions from gross total income and computation of tax liability of companies Tax deduction/ collection at source Double Taxation Avoidance Agreement Concept | 12 | 27% |
| 4 | Taxation & Financial Planning – I Tax planning basic concepts Tax planning with respect to Setting up a new business Tax planning with respect to location and nature of business | 11 | 24% |

| Evaluation | | |
|------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------------|-----------------------|--------------------|----------------|
| 1 | Erech Bharucha | Environmental Studies | Universities Press | Latest Edition |
| 2 | Anindita Basak | Environmental Studies | Pearson Education | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of theBook | Publisher | Edition |
|---------|--|-----------------------------------|---------------------------|----------------|
| 1 | Manoj Tiwari, Kapil Khulbe, Archana Tiwari | Environmental Studies | IK International Pvt. Ltd | Latest Edition |
| 2 | Deeksha Dave, S S Katewa, Deeksha Dave, S S Katewa | Textbook of Environmental Studies | Cengage Learning India | Latest Edition |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to getrelevant topic/information pertaining to the subject.

- Nature, Journal of Environmental Management, Environment Times, Environmental Health Journal etc.

CO PO MAPPING

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|--------|--------|--------|--------|-----|------|--------|--------|--------|------|
| CO1 | High | High | Low | Medium | Low | High | High | Medium | Medium | Low |
| CO2 | Medium | High | Low | Medium | Low | High | Medium | Low | Low | High |
| CO3 | Low | medium | Medium | Low | Low | High | High | Low | Low | High |
| CO4 | High | High | Medium | Low | Low | High | High | Medium | Low | Low |



School of Management, Commerce & Liberal Arts

MBA Programme

Semester III

Course Title: Strategic Management

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| CORE | MBA303STM | 4 | 60 | 20% | 30% | -- | 50% | - |

Course Outcomes (COs)

1. To understand the concept of strategy and strategy management.
2. To formulate and conceptualize strategic formulation.
3. To understand and learn to apply strategic management practices at corporates level.
4. To understand how functional areas such as operations, marketing, accounting, and finance work together in a successful firm.
5. Apply concepts and frameworks learned in the course to case analyses and company Strategic analyses.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|----------|--|----------------|------------|
| 1 | Strategic Management: Strategic Management: An Introduction Corporate Strategic Planning, Hierarchical levels of planning, Strategic planning process, Merit and limitations of Corporate Management in Practice. Stakeholders in Business The I/O Model and Resource-based Model of above Average Return, Vision, Mission and Purpose; Strategic Intent, Emergent Strategy Business Model and Strategy Environmental Analysis: External and Industry Environmental Analysis using PEST and Porter's Five-Force Model Understanding concepts such as Key Success Factors; Driving Forces, Strategic Groups | 12 | 20% |
| 2 | Strategic Formulation: Generic strategies, Grand strategies, Strategies for leading companies, The role of diversification – limits and means, Strategic management at corporate level, at business and functional level with special reference to companies operating in India. Concept of Value Chain, SWOT Analysis, Resources, Capabilities and Competencies; Dynamic, Capabilities Core Competence of Organizations, Competitive Advantage and Sustainable Competitive Advantage, Strategy formulation at Business levels, Diversification | 15 | 25% |
| 3 | Strategic Implementation & Control: Various approaches to implementation of strategy, commander approach, organizational change approach, collaborative approach, and cultural approach. Matching organization structure with strategy, 76 model, strategic control process, Dupant's control model and other Quantitative and Qualitative tools – steps, M. Porter's approach for Globalization, and future of strategic management. Strategy Formulation at Corporate Level: | 9 | 15% |

| | | | |
|----------|---|-----------|------------|
| | <p>Strategic Alliance and Joint Ventures, Cooperative</p> <p>Strategies: Acquisitions and Restructuring, Global Strategy, International Corporate-level and Business-level Strategies. BCG Matrix, GE Matrix, McKinsey 7s</p> | | |
| 4 | <p>Strategy Implementation:</p> <p>Structure and Controls, Triple Bottom Line (TBL) approach, Strategic Leadership, Balanced Scorecard</p> <p>Contemporary Topics in Strategy:</p> <p>Management of Change through VUCA, Strategic and Corporate Entrepreneurship, Blue Ocean Strategy, Blue Ocean Shift</p> <p>Corporate Social Responsibility (CSR) strategy</p> | 9 | 15% |
| 5 | <p>Strategy Execution:</p> <p>Model of Above Average Return, External Analysis: PESTEL, Five Force Model, Key Success Factor and Driving Forces</p> <p>Analysis , Five Generic Strategies – Business Level Strategies</p> <p>Resource Based View, VRIO framework</p> <p>Strengthening Company's Competitive Position: Offensive and Defensive Moves, Strategic Alliances, Integration and Outsourcing</p> <p>Corporate Level Strategies , Strategy Execution, Managing Internal Operation, Strategy Review, Evaluation and Control</p> <p>Case study</p> | 15 | 25% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--------------------------------------|-------------------------|--------------------------------------|----------------|
| 1 | N.D. (1988) | Strategic Management | Pearson & Robinson | Latest Edition |
| 2 | Tripti Singh Chowdhury, Preeti Singh | Strategic Management | Thakur Publication Pvt Ltd Ahmedabad | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------------|--|------------------------------------|----------------|
| 1 | M. C. & Vivek Kuchhal | Strategic Management Phases | AJPO Journals and Books Publishers | Latest |
| 2 | Azhar Kazmi | Strategic Management and Business Policy | McGraw Hill 2015 / 4th | Latest |

List of Journals / Periodicals / Magazines / Newspapers / Web resources, etc.

1. Strategic Management Journal
2. Vikalpa – A Journal for Decision Makers
3. Business Standard/Economic Times/Financial Times/ Financial Express

CO-PO MAPPING

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|------|------|--------|--------|--------|------|--------|-----|-----|------|
| CO1 | High | High | Medium | Medium | Low | High | Low | Low | Low | High |
| CO2 | High | High | Medium | Medium | Low | High | Low | Low | Low | High |
| CO3 | High | High | Medium | Medium | Low | High | Medium | Low | Low | High |
| CO4 | High | High | Medium | Medium | Medium | High | Medium | Low | Low | High |
| CO5 | High | High | Medium | Medium | Medium | High | Medium | Low | Low | High |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester III

Course Title: Compensation Management

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | MBA304COM | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Providing insights into strategic choices in managing compensation.
2. In-depth analysis of major Compensation issues in the context of current theory, research and practice.
3. Illustrating new development as well as established approaches to compensation decisions.
4. To Learn Employee Benefits, Pension Schemes
5. To Learn Various Labor Laws Related to Compensation Management.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | Essentials of Reward Management <ul style="list-style-type: none">● An Overview of Reward Management;● The Reward System;● Total Rewards;● Strategic Reward;● International Reward | 12 | 20% |
| 2 | Performance and Reward <ul style="list-style-type: none">● Performance Management and Reward;● Engagement and Reward;● Financial Rewards & Non-Financial Rewards;● Contingent Pay Schemes;● Bonus Schemes;● Team Pay;● Rewarding for Business Performance;● Recognition Schemes | 12 | 20% |
| 3 | Valuing and Grading Jobs & Rewarding Special Groups <ul style="list-style-type: none">● Pay Levels;● Job Evaluation Schemes;● Equal Pay;● Market Rate Analysis;● Grade and Pay Structures;● Rewarding Directors and Senior Executives;● Rewarding Sales and Customer Service Staff;● Rewarding Knowledge Workers;● Rewarding Manual Workers | 12 | 20% |

| | | | |
|----------|--|-----------|------------|
| 4 | Employee Benefit and Pension Schemes & The Practice of Reward Management <ul style="list-style-type: none"> • Employee Benefits; • Flexible Benefits; • Pension Schemes; • Developing Reward Systems; • Managing Reward Systems; • Evaluating Reward Management; • Responsibility for Reward | 09 | 15% |
| 5 | CM related Labor Laws (Brief overview) <ul style="list-style-type: none"> • Payment of Wages Act, 1936; • Minimum Wages Act, 1948; • Payment of Gratuity Act, 1972; • Payment of Bonus Act, 1965; • Equal Remuneration Act, 1976; • Employees' P F & Misc. Provisions Act, 1952; • Income tax act provisions with respect to salaried person; • Maternity Benefits Act, 1981; • Medi-claim Policies and their salient features | 15 | 25% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments/ Quizzes/Class Participation / Role Play/Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---------------------------|---|------------------|----------------|
| 1 | Michael Armstrong | Armstrong's Handbook of Reward Management Practices | Kogan Page | Latest |
| 2 | Dipak Kumar Bhattacharyya | Compensation Management | Oxford Books | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---|--|-----------------------------|-------------|
| 1 | P K Paldhi | Personnel Management and Industrial Relation | Tech India | Latest |
| 2 | Mousumi Bhattacharya, Nilanjan Sengupta | Compensation Management | Excel Books | Excel Books |
| 3 | Excel Books | Compensation Management | Text and Cases, Excel Books | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Journal of Human Resource Management, Sage publication
- Business Standards
- Harvard Business Review

CO-PO MAPPING

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|--------|--------|--------|--------|-----|--------|--------|------|------|------|
| CO1 | High | High | Medium | Medium | Low | Low | Medium | High | High | High |
| CO2 | High | Medium | High | High | Low | Medium | High | High | High | High |
| CO3 | High | Medium | Medium | Medium | Low | Low | High | High | High | High |
| CO4 | Medium | Medium | Medium | High | Low | Low | Medium | High | High | High |
| CO5 | High | Medium | Medium | High | Low | Low | High | High | High | High |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester III

Course Title: Security Analysis & Portfolio Management

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | MBA304SAPF | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To analyze the different investment decisions and the various factors influencing investment decision. To explore knowledge of investment risk and investment environment with reference to Indian security market.
2. To impart knowledge to students regarding the theory and practice of Security Analysis.
3. To understand various theories of portfolio management.
4. To equip the knowledge of Bonds and learn various influences bond valuation and management.
5. To enhance the analytical ability of evaluating shares for investment in stock market.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | Concept and Definition of Investment <ul style="list-style-type: none"> Investment Decision and Process Types, Investment Vs Speculation-Role of Speculator, Source of Investment Information Securities Market: Primary and Secondary Market, Stock Exchanges, Portfolio Risk and Return Features of Investment, Investment Avenues, Investment Process. The Investment Environment, Securities Market of India | 12 | 20% |
| 2 | Security Analysis <ul style="list-style-type: none"> Objectives of security analysis Fundamental analysis: economic analysis, industry analysis and company analysis. Technical analysis: assumptions Dow Theory, chart patterns, moving averages and market indicators. Efficient market theory: weak form hypothesis, semi strong form hypothesis and strong form hypothesis. | 18 | 30% |
| 3 | Portfolio Theory: <ul style="list-style-type: none"> Traditional Theory of Portfolio Management –Arbitrage Pricing Theory Modern Theory of Portfolio Management Markowitz Risk Return Optimization CAPM Sharpe Portfolio Optimization Portfolio Selection – Diversification Efficient Frontier –Capital Market Line (Problems) Performance measure and evaluation. | 12 | 20% |
| 4 | Valuation of Bonds (Only Numerical) <ul style="list-style-type: none"> Bond with Maturity Bond with Amortization Principle Pure Discount Bonds Yield to Maturity Perpetual Bond (without Maturity) | 9 | 15% |

| | | | |
|---|--|---|-----|
| 5 | Valuation of Shares <ul style="list-style-type: none"> Valuation of Preference Share Redeemable Irredeemable Valuation of Equity Share Dividend Capitalization Earning Capitalization | 9 | 15% |
|---|--|---|-----|

| Evaluation | | |
|------------|--|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Presentation etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-------------------|--|-----------|---------|
| 1 | Fisher and Jordan | Securities Analysis and Portfolio Management | PHI | Latest |
| 2 | Prasanna Chandra | Investment analysis and Portfolio Management | TMH | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------------------------------|--|------------------------------------|---------|
| 1 | M. Ranganathan and R. Madhumathi | Investment Analysis and Portfolio Management | Pearson Education Press, New Delhi | Latest |
| 2 | V. K. Bhalla | Security Analysis and Portfolio Management | Sultan Chand Publisher, New Delhi | Latest |
| 3 | M.Y.Khan & P.K. Jain | Financial Management – Text Problem & Cases | Tata McGraw Hill | Latest |
| 4 | Shalini Talwar | Security Analysis and Portfolio Management, | Cengage Learning | Latest |
| 5 | Punithavathy & Pandian | Security Analysis and Portfolio Management | Vikas Publishing House Pvt. Ltd. | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Economic Times
- Journal of Economic Times
- Business Standard
- Reports of RBI, SEBI etc.

CO-PO MAPPING

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|--------|------|--------|-----|--------|------|--------|-----|-----|------|
| CO1 | Medium | High | Medium | Low | Medium | High | Medium | Low | Low | High |
| CO2 | Medium | High | Medium | Low | Low | High | Medium | Low | Low | High |
| CO3 | Medium | High | Medium | Low | Low | High | Medium | Low | Low | High |
| CO4 | Medium | High | Medium | Low | Low | High | Medium | Low | Low | High |
| CO5 | Medium | High | Medium | Low | Low | High | Medium | Low | Low | High |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester III

Course Title: Services Marketing

| Category Of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|-----------------------|----------------|--------|------------------|----------|--------------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Major | MBA304SEM | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Able to describe the fundamentals of services marketing
2. Explain what a service marketing mix is.
3. Explain the strategic and tactical aspects of services marketing.
4. Discuss service value, quality, and excellence
5. Able to understand service failure and recovery

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|----------|---|----------------|------------|
| 1 | Introduction to Service Marketing <ul style="list-style-type: none"> • Basic concept of services • Broad Categories of services • Distinction between services and goods • Customer Behavior in service encounter: <ul style="list-style-type: none"> • Pre-purchase stage • Service encounter stage • Post encounter stage • Customer expectations and perceptions of services – Zone of Tolerance • Segmenting service markets • Principles of positioning services | 9 | 15% |
| 2 | Service Marketing Mix <ul style="list-style-type: none"> • Service as product <ul style="list-style-type: none"> • Core and supplementary elements • Branding Service Firms • Products and Experiences • New Service Development • Promoting services <ul style="list-style-type: none"> • Strategic service communication • Promoting tangibles and overcoming problems of intangibility • Creating effective messages, services marketing communication mix • Pricing services <ul style="list-style-type: none"> • Pricing strategies • Role of non-monetary costs • Delivering services <ul style="list-style-type: none"> • Distribution of services, role of customers in service delivery • Delivery through intermediaries, electronic channels, SSTs | 12 | 20% |

| | | | |
|----------|--|-----------|------------|
| 3 | Service Marketing Mix- Expanded <ul style="list-style-type: none"> ● People in services <ul style="list-style-type: none"> • Role and importance of human resource in service delivery • Effective HRM practices • Service culture and leadership ● Service Process <ul style="list-style-type: none"> • Designing and documenting service processes • Service Blueprinting • Service Process Redesign ● Physical Evidence of Services <ul style="list-style-type: none"> • Service environment • Dimensions and consumer response theory | 12 | 20% |
| 4 | Service Quality <ul style="list-style-type: none"> ● Gaps Model ● SERVQUAL & SERVPERF ● Measuring and Improving service quality ● Soft measures of service quality ● Hard measures of service quality ● Measuring capacity & demand <ul style="list-style-type: none"> • Understanding capacity • Demand patterns • Strategies for matching capacity and demands | 15 | 25% |
| 5 | Service Excellence <ul style="list-style-type: none"> ● Enabling service excellence ● Delivering value ● Service failure & recovery <ul style="list-style-type: none"> • Customer complaining behavior • Customer responses to effective service recovery • Principles of effective service recovery ● Customer loyalty ● Branding services ● Recent trends in service marketing | 12 | 20% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments/ Quizzes/Class Participation / Role Play/Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-------------------------------------|-------------------------|------------------|----------------|
| 1 | Valarie A Zeithmal & Mary Jo Bitner | Services Marketing | McGraw-Hill | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|--|------------------|----------------|
| 1 | Jochen Wirtz, Christopher Lovelock, Jayanta Chatterjee | Services Marketing: People, Technology, Strategy | Pearson | Latest |
| 2 | Valeire Zeithnal, Mary Jo Bitner, Dwayne D. Gremier, Ajay Pandit | Services Marketing: Integrating Customer Focus Across the Firm | McGraw-Hill | Latest |
| 3 | K. Rama Mohan Rao | Services Marketing | Pearson | Latest |
| 4 | K. Douglas Hoffman, John E. G. Bateson | Services Marketing: Concepts, Strategies and Cases | Cengag | Latest |

List of Journals / Periodicals / Magazines / Newspapers / Web resources, etc

- Journal of Services Marketing
- Services Marketing Quarterly
- Services Marketing Journal (IUP)
- Journal of Financial Services Marketing
- Indian Journal of Marketing

CO-PO MAPPING

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|------|--------|--------|--------|--------|-----|-----|--------|--------|------|
| CO1 | High | Low | Low | Medium | Medium | Low | Low | Low | Medium | High |
| CO2 | High | Medium | Low | Medium | Medium | Low | Low | Low | Medium | High |
| CO3 | High | High | Medium | Medium | High | Low | Low | Medium | Low | High |
| CO4 | High | Medium | Low | Low | Medium | Low | Low | Low | Medium | High |
| CO5 | High | Medium | Low | Medium | Medium | Low | Low | Low | Medium | High |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester III

Course Title: Integrated Marketing Communication

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | MBA305IMC | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. Identify relevance with the concept, scope and functions of Integrated Marketing Communication.
2. Understand the role of In house advertising department & outsourcing marketing/advertising agencies so as to enable students to gain an understanding of market mechanisms.
3. Aware of necessary pros and cons of sales promotion instruments available in the market.
4. Understand the fundamental concepts of marketing communication concept of Advertising/Promotion/Communication amongst the business organization, employees & customers and Media process, specifically with focus on Advertising
5. Understanding Social marketing communication with Legal & Ethical issues in Advertising,

Publicity, Public relations with respect to Marketing Communication.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|--|-----------------------|------------------|
| 1 | Introduction to Integrated Marketing Communication <ul style="list-style-type: none">● IMC Program Situation Analysis;● The Evolution of IMC;● Indian Media Scene;● Tools for IMC;● IMC Planning Process;● Role of IMC in the Marketing Process● Case Study | 12 | 20% |
| 2 | Marketing communication & Advertising <ul style="list-style-type: none">● Marketing Communication in Marketing;● Communication-Key Concepts;● Organizing for Advertising and Promotion;● Advertising & Evaluating Agencies;● IMC Process;● Perspectives on Consumer Behavior;● Analyzing the communication Process— Source, Message and Channel Factors Objectives & Budgeting for IMC Programs;● Case Study | 12 | 20% |
| 3 | Advertising campaign planning & Execution <ul style="list-style-type: none">● Developing the IMC Programme;● Planning Communication Strategy;● Creative Strategy Planning and Development; Advertising Campaign Planning;● Creative Strategy Implementation & Consideration;● Advertising Creativity;● Campaign Planning and Execution;● Case Study | 12 | 20% |

| | | | |
|----------|--|-----------|------------|
| 4 | Media Planning Concepts <ul style="list-style-type: none"> ● Advertising Research; Role and Trend; ● Media Concepts; ● Characteristics and Issues in Media Planning; ● Media Planning and Strategy; ● Media Selection; Planning and Scheduling; ● Evaluation of Media-Monitoring & Control; ● Measuring the Effectiveness of the Promotional Program- ● Definitions and Techniques Measuring the Effectiveness of other Program Elements; ● Internet as an Emerging Advertising Media; ● Case study | 12 | 20% |
| 5 | Marketing Communication <ul style="list-style-type: none"> ● Managing Sales Promotion; ● Direct Marketing; ● Publicity and Public Relation; ● Social Marketing Communication; ● Strategies for Advertising Agencies; ● Function and Structure of Ad Agencies; ● Managing Client Agency Relationship; ● Strategies for Account Management; ● Legal and Ethical Issues in Advertising; ● Case study | 12 | 20% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments/ Quizzes/Class Participation / Role Play/Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|---|------------------|----------------|
| 1 | Belch, E. George, Belch, A. Michael and Purani K | Advertising and Promotion: An Integrated Marketing Communications | McGraw Hill; | McGraw Hill; |

| | | | | |
|---|-------------------------------|--|-------------|-------------|
| | | Perspective | | |
| 2 | Shah, Kruti and D'Souza, Alan | Advertisement and Promotion- An IMC Perspective | McGraw Hill | McGraw Hill |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|----------------|--|-----------------------------------|-----------------------------------|
| 1 | Shimp, Terence | A: Advertising and Promotion: An IMC Approach | South-Western Cengage Learning | South-Western Cengage Learning |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Journal of Marketing Management, Sage publication
- Business Standards
- Harvard Business Review

CO-PO MAPPING

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|------|--------|--------|--------|------|--------|--------|--------|--------|--------|
| CO1 | High | Medium | Medium | High | High | Medium | High | High | Low | High |
| CO2 | High | High | Medium | Medium | High | Low | Medium | High | Low | Medium |
| CO3 | High | Medium | High | Medium | High | Low | Medium | High | Low | High |
| CO4 | High | High | Low | Medium | High | Medium | High | Medium | Medium | High |
| CO5 | High | Medium | Medium | Medium | High | Medium | High | Medium | Low | High |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester III

Course Title: Management of Financial Services

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | MBA305MFS | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To Throwing light on how the Indian financial system works.
2. To Strengthening the foundation of financial markets.
3. To Enhancing the knowledge of financial Institutions and their services.
4. To Enhancing the knowledge of factoring forfeiting and stock broking.
5. To enabling the concepts of banking and insurance.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Introduction of Financial System in India <ul style="list-style-type: none"> • Definition, Structure of Indian Financial System • Functions of the Financial System • Development of financial system in India • Financial System & Economic Development • Weaknesses of Indian Financial System | 12 | 20% |
| 2 | Financial Markets <ul style="list-style-type: none"> • Money Market: Definition, Features, Characteristics of a developed money market, Importance of Money Market, Composition of money market, Deficiencies of Indian Money Market, major reforms, RBI, DFHI • Capital Market: Definition, Classification of Capital market, Importance of Capital market, Differentiate between Money & Capital market, Differentiate between Primary and Secondary market, Advantages of Primary market & Secondary market, Disadvantages of Secondary market, Functions of secondary market, Major Reforms, SEBI • Debt Market-Regulatory body & its role, Reforms & its impact | 15 | 25% |
| 3 | Financial Institutions and their Services-I <ul style="list-style-type: none"> • NBFCs-Prudential Norms; • Hire Purchase Finance; • Leasing- Types • Housing Finance- Regulatory body & its role, • Prudential Norms; • Venture Capital Financing; • Mutual Funds | 9 | 15% |
| 4 | Financial Institutions and their Services-II <ul style="list-style-type: none"> • Depository & Custodians • Credit Rating • Factoring & Forfeiting, • Stock Broking | 9 | 15% |

| | | | |
|----------|---|-----------|------------|
| 5 | Introduction to Banking <ul style="list-style-type: none"> • Definition and functions of Banks • Classification and types of Banks • Reserve Bank of India • Banking Sector Reforms • Digital Banking and its impact • Banking Regulation Act, 1949 and RBI Act, 1934, • Traditional regulation mechanisms, international regulation. • Risk Management in Banking: Types of risk, how to manage risk, challenges Introduction to Insurance <ul style="list-style-type: none"> • Historical perspective, • Conceptual Framework, • Meaning, Nature and Scope of Insurance, Classification of Insurance Business viz., Life Insurance and General Insurance • Regulations Issued by the IRDA | 15 | 25% |
|----------|---|-----------|------------|

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|-------------------------|-------------------|----------------|
| 1 | M Y Khan | Financial Services | Tata McGraw hil | Latest Edition |
| 2 | Bharti V Pathak | Indian Financial System | Pearson Education | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|-------------------------|------------------|----------------|
| 1 | I. M. Pandey | Indian Financial System | Tata McGraw hill | Latest Edition |

| | | | | |
|---|-----------------|--|------------------------|----------------|
| 2 | M Y Khan | Financial Management - Theory Concepts and Practices | Taxman Publication | Latest Edition |
| 3 | H. R. Machiraju | Indian Financial System | Vikas Publishing House | Latest Edition |
| 4 | Meir Khon | Financial Institutions and Markets | Tata McGraw hill | Latest Edition |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- The Journal of Finance
- Journal of Financial Economics
- Business Today
- Journal of Banking & Finance

CO PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|------|--------|-----|-----|-----|------|--------|-----|-----|--------|
| CO1 | High | Medium | Low | Low | Low | High | High | Low | Low | Medium |
| CO2 | High | Low | Low | Low | Low | High | High | Low | Low | Medium |
| CO3 | High | Low | Low | Low | Low | High | Medium | Low | Low | Medium |
| CO4 | High | Low | Low | Low | Low | High | High | Low | Low | Medium |
| CO5 | High | Medium | Low | Low | Low | High | High | Low | Low | Medium |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester III

Course Title: Strategic Human Resource Management

| Category Of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Major | MBA305SHR | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To understand the strategic role of SHRM,
2. To analyze and evaluate how manpower planning is executed in a strategic context.
3. To create and implement a strategic performance management system
4. To analyses and implement the global HRM practices
5. To evaluate and create work designs to globalized workforce

Syllabus:

| Module | Contents | No. of Sessions | Weightage |
|--------|--|-----------------|-----------|
| 1 | SHRM and Introduction: <ul style="list-style-type: none"> Human Resource Strategy, Human Resources as Assets, Evolution of SHRM Distinctive Human Resource Practices, Theoretical Perspectives on SHRM, SHRM Approaches: The Indian Context | 12 | 20% |
| 2 | Strategic Workforce Planning: <ul style="list-style-type: none"> Objectives of Strategic Workforce Planning, Types of Planning, Aggregate Planning, Succession Planning, CEO Succession | 12 | 20% |
| 3 | Design and Redesign of Work Systems: <ul style="list-style-type: none"> Design of Work Systems, What Workers Do, What Workers Need, How Jobs Interface with Other Jobs, Strategic Redesign of Work Systems, Outsourcing and Offshoring Mergers and Acquisitions, Impact of Technology, HR Issues and Challenges Related to Technology, Telework, Employee Surveillance and Monitoring, e-HR, Social Networking, Understanding Change, Managing Change | 12 | 20% |
| 4 | Performance Management and Feedback: <ul style="list-style-type: none"> Use of the System, Who Evaluates, What to Evaluate, How to Evaluate, Measures of Evaluation, Why Performance Management Systems Often Fail, Addressing the Shortcomings of Performance Management Systems | 12 | 20% |
| 5 | Global HRM <ul style="list-style-type: none"> How Global HRM Differs From Domestic HRM, Assessing Culture, Strategic HR Issues in Global Assignments | 12 | 20% |

| Evaluation | | |
|------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation /Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr.No. | Author/s | Name of the Book | Publisher | Edition |
|--------|------------------|-------------------------------------|-------------------------|---------|
| 1 | Tanuja Agarwala | STRATEGIC HUMAN RESOURCE MANAGEMENT | Oxford University Press | Latest |
| 2 | Jeffrey A. Mello | STRATEGIC HUMAN RESOURCE MANAGEMENT | Cengage | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Harvard Business Review
- Times Ascent and Times of India Editorial Page
- Journal of Human Values (IIM Calcutta Journal)

CO PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|------|--------|-----|--------|-----|-----|--------|--------|------|--------|
| CO1 | High | Low | Low | Medium | Low | Low | Low | Medium | High | Medium |
| CO2 | High | Medium | Low | Medium | Low | Low | Low | Medium | High | Medium |
| CO3 | High | Medium | Low | High | Low | Low | Low | High | High | Medium |
| CO4 | High | Medium | Low | Medium | Low | Low | Low | Medium | High | Medium |
| CO5 | High | Medium | Low | High | Low | Low | Medium | High | High | Medium |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester III

Course Title: Emerging Technology for Managers

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| VAC | MBA306ETM | 3 | 45 | | 30% | 20% | | 50% |

Course Outcomes (COs)

1. Learner should be able to understand the concept and application of Information Systems.
2. Learners should be able to create reports and represent data graphically using excel and access.
3. Learners should be able to understand and evaluate the Enterprise software based on the user requirements and the functionality it serves.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | Introduction and concept of Data Warehousing and Cloud Computing. Overview of concepts of – Big Data, Data Mining, Artificial Intelligence concepts and application and other emerging technologies. | 10 | 22% |
| 2 | Introduction to tableau, tableau products, data connections in tableau interface, Visualizing data, putting everything together in a dashboard | 12 | 27% |
| 3 | Introduction to Power BI, Power BI Desktop and Data Transformation, Data Visualization and Power BI Service | 12 | 27% |
| 4 | Python fundamentals, variables, operators and functions | 11 | 24% |

| Evaluation | | |
|------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 50% (Internal Assessment) |
| 2 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|-----------------------------|---|---------------------------------------|----------------|
| 1 | PAULRAJPONNIAH | DATAWAREHOUSING FUNDAMENTALS FOR IT PROFESSIONALS | JohnWiley&Sons,Inc.,Hoboken,NewJersey | Latest Edition |
| 2 | Marleen Meier David Baldwin | Mastering Tableau 2019.1 Second Edition | Published by Packt Publishing Ltd. | Latest Edition |
| 3 | Microsoft | Microsoft Power Bi Dashboards Step By Step | Pearson Education | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of theBook | Publisher | Edition |
|---------|-------------------|--|----------------------|---------|
| 1 | <u>Dr.Abhinav</u> | Data Visualization using Python Programming- - A Technical Guide For Beginners, Researchers and Data Analyst | Shashwat Publication | |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to getrelevant topic/information pertaining to the subject.

- International Journal of Technology Management and Sustainable Development
- Journal of Information Technology Case and Application Research
- International Journal of Information and Learning Technology

CO-PO MAPPING

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|------|------|--------|-----|--------|--------|-----|--------|--------|--------|
| CO1 | High | High | Medium | Low | Medium | Medium | Low | Medium | Medium | Medium |
| CO2 | High | High | Medium | Low | Medium | Medium | Low | Medium | Medium | Medium |
| CO3 | High | High | Medium | Low | Medium | Medium | Low | Medium | Medium | Medium |
| CO4 | High | High | Medium | Low | Medium | Medium | Low | Medium | Medium | Medium |



SYLLABUS MBA4th Sem

Master of Business Administration Program

2 years || 4 Semesters

Full-Time

Program Batch

2023 – 2025



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester IV

Course Name: Project Management

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | MBA401PRM | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcome:

1. Understand the contemporary and cutting edge Project Management.
2. Analyze stakeholder expectations and engagement to ensure a successful project outcome.
3. Manage projects effectively including the management of scope, time, costs, and quality, ensuring satisfying the needs of the project.
4. Apply the PM processes to initiate, plan, execute, monitor and control, and close projects and to coordinate all the elements of the project.
5. Apply processes required to manage the procurement of a project, including acquiring goods and services from outside the organization.

Syllabus:

| Module | Contents | No. of Sessions | Weightage |
|----------|--|-----------------|------------|
| 1 | Basics of Project Management: <ul style="list-style-type: none"> • Concept of Project, Attributes of a Project • Importance of Project Management • Project Management Process, Project Lifecycle • Project Stakeholders • Project Management Structures, • Choosing Appropriate Project Management Structure • Implications of Organizational Culture • Main Causes of Project Failure • Project Definition • Defining Scope, Establishing Priorities • Creating the Work Breakdown Structure (WBS), integrating the WBS with the organization • Coding the WBS for information system • Project Roll Up, Process Breakdown Structure, Responsibility Matrices • Project Identification: • Selection of product, identification of market preparation of feasibility study/report Project formulation –Evaluation of risks preparation of Project report. • Selection of location & site of the project • Factors affecting location - policies of Central – State Government towards location – Legal aspects of project management. | 18 | 30% |
| 2 | Project Planning - Estimating Project Times and Costs: <ul style="list-style-type: none"> • Factors Influencing Quality of Estimates • Estimation Guidelines for Time, Costs and resources • Macro versus Micro Estimating • Methods for Estimating Project Times and Costs • Level of detail, Developing Budgets • Types of Costs, Refining estimates and contingency funds. • Developing a Project Plan: • Developing the Project Network • From Work Package to Network • Constructing a Project Network • Activity-On-Node, Fundamentals, Network Computation process • Using the Forward and Backward pass information • Level of Detail for activities • Extended Network techniques. | 09 | 15% |

| | | | |
|----------|--|-----------|------------|
| 3 | Project Scheduling & Risk Management <ul style="list-style-type: none"> • Types of Project Constraints Classification of Scheduling Problem • Resource Allocation Methods, Splitting, Multitasking Benefits of scheduling resources • Multi Project resource Schedules, Rationale for reducing project duration Options for accelerating Project Completion, Concept and construction of a Project Cost – Duration Graph, Practical considerations. Managing Risk: Risk Management process – Risk Identification, Risk Assessment, Risk Response • Development, Contingency Planning, Risk Response Control, Change Control Management • Project Organization: The Project Manager: Role and Responsibilities of the project Manager, Planning, Organizing, Controlling, Skills of the Project Manager | 09 | 15% |
| 4 | PROJECT EVALUATION <ul style="list-style-type: none"> • Progress and Performance Management and Evaluation: Structure of a Project Monitoring Information System, Project Control Process, Monitoring Time Performance, Need for an Integrated • Information System, Developing a status report and index to monitor progress, Forecasting final project cost, and other control issues. Project Audit and Closure: Project Audit, Project Audit Process, Project Closure, Team, Team member and Project Manager Evaluations. | 12 | 20% |
| 5 | PRACTICAL: <ul style="list-style-type: none"> • Introduction to Microsoft Project Software • Calendar Types & Creation • Task Types & Relationship Types and Creation in Software & Critical Path Method • Task & Relationship Exercise • WBS Exercise • Constraints & Recurring Tasks Exercise • Define & Assign resources Exercise • Resource Analysis & Leveling • Project Tracking • Earned Value Analysis | 12 | 20% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|---|------------------|----------------|
| 1 | Kim Heldman | PMP - Project Management Professional - “Study Guide” | Wiley India | Latest |

Reference Books:

| Sr. No. | Author/s | Name of theBook | Publisher | Edition |
|----------------|------------------|--------------------------------|---------------------|----------------|
| 1 | Sadhan Choudhary | Project Management | McGraw Hill | Latest |
| 2 | Prasanna Chandra | Project Management | McGraw Hill | Latest |
| 3 | Vasant Desai | Project Management | Himalaya | Latest |
| 4 | Sitanshu Khatua | Project Management & Appraisal | Oxford Publications | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals order to getrelevant topic/information pertaining to the subject.

- International Journal of Managing Projects in Business.
- Harvard Business Review.
- International Journal of Construction Project Management.
- The Engineering Project Organization Journal.

CO PO MAPPING

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| CO1 | High | High | Medium | Low | Low | Low | Low | Medium | Medium | Medium |
| CO2 | High | High | Medium | Low | Medium | Medium | Medium | Medium | Medium | Medium |
| CO3 | High | High | Medium | Low | Medium | Medium | Medium | Medium | Medium | Medium |
| CO4 | High | High | High | Low | Medium | Medium | High | Medium | Medium | Medium |
| CO5 | High | High | Medium | Low | High | High | Medium | Medium | Medium | Medium |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester IV

Course Title: Digital and Social Media Marketing

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | MBA402DSM | 4 | 60 | | | | | |
| | | | | 20% | 30% | | 50% | - |

Course Outcomes (COs)

1. To understand the concept of Digital and Social Media.
2. To apply tools in branding and marketing.
3. To understand and learn to apply Digital and Social Media tools.
4. To learn news and improve tools.
5. To create, collaborate and integrate various marketing communications tools and analyses the trends.

Syllabus

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | BASICS OF MARKETING: <ul style="list-style-type: none"> • Introduction to Marketing Management Process • Understanding the Consumer Journey • Products and Services and Positioning Strategies • Understanding Customer Value • Importance and Scope of Digital and Social Media Marketing. | 9 | 15% |
| 2 | FOUNDATIONS OF DIGITAL MARKETING <ul style="list-style-type: none"> • Introduction to Digital Marketing, Digital Marketing Landscape, Traditional vs Digital Marketing • Understanding Digital Business Models • Digital Marketing Strategy • Introduction to Search Engines for Marketing Applications • Introduction to Social Media Marketing • Online Reputation Management and Online Brands • Measuring and Evaluating Digital Campaigns. | 18 | 30% |
| 3 | SEARCH ENGINE OPTIMIZATION AND SEARCH ENGINE MARKETING <ul style="list-style-type: none"> • Search Engine Results Pages (SERP), Black Hat, White Hat, and Gray Hat SEO, Keyword Optimization, On-page SEO, Off-page SEO • Banner Advertisement, Pay-Per-Click (PPC) • Display Advertisement and other online advertisement. | 9 | 15% |
| 4 | SOCIAL MEDIA MARKETING <ul style="list-style-type: none"> • Defining Social Media Marketing • Elements of Social Media Marketing • Social Media Vehicles Elements of Social Media Marketing Strategies, Social Media Mix, Social Media Campaign Management • Social media tools based marketing. | 15 | 25% |

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 5 | CRAFTING A DIGITAL STRATEGY AND ANALYTICS <ul style="list-style-type: none"> Integrating Digital, Social, and Mobile with Traditional Channels Key Assumptions and Frameworks of Digital Strategy Digital Media Analytics. | 9 | 15% |

| Evaluation | | |
|------------|--|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--------------|-------------------|--------------------|---------|
| 1 | Turner Jamie | Digital Marketing | Vibrant Publishers | Latest |
| 2 | Gupta Seema | Digital Marketing | McGraw Hill | Latest |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|---|---|--------------------------------------|---------|
| 1 | Information Resource Management Association | Digital Marketing and Consumer Engagement: Concepts, Methodologies, Tools, and Applications | IGI Global Disseminator of Knowledge | Latest |
| 2 | Upadhyay Kailash Chandra | Digital Marketing: Complete Digital Marketing Tutorial | Kindle Edition | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Campaign Magazine
- Digiday
- Figaro Digital Magazine
- Digital Marketing Journal

CO-PO MAPPING

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|------|--------|--------|-----|--------|------|--------|-----|-----|------|
| CO1 | High | Medium | Medium | Low | Low | High | Low | Low | Low | High |
| CO2 | High | High | Medium | Low | Low | High | Low | Low | Low | High |
| CO3 | High | High | Medium | Low | Low | High | Medium | Low | Low | High |
| CO4 | High | High | Medium | Low | Medium | High | Medium | Low | Low | High |
| CO5 | High | High | Medium | Low | Medium | High | Medium | Low | Low | High |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester IV

Course Title: Business Law

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | MBA | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs):

1. Enhancing knowledge of the branches of law which relate to business transactions
2. Increasing awareness about the legal implications for unpaid seller
3. Basic fundamentals regarding various negotiable instruments used in business
4. Making students acquaint with legal formalities for registering business as limited Company.
5. With the increasing use technology in the business, making students aware about various legal penalties of cyber crimes

Syllabus

| Module | Contents | No of Sessions | Weightage |
|----------|---|----------------|------------|
| 1 | THE INDIAN CONTRACT ACT 1872 <ul style="list-style-type: none"> • Overview of the subject: brief discussions on the topics covered in syllabus • Indian Contract Act: Definitions & Classification of contracts • Essentials of a valid contract, Offer and acceptance, capacity to contract, free consent, legality of object, void agreements, performance of contract • Discharge of contract • Remedies for breach of contract • Quasi Contracts | 15 | 25% |
| 2 | THE SALE OF GOODS ACT 1930 <ul style="list-style-type: none"> • Sale and agreement to sell • Sale vs. hire purchase, • Sale and barter, exchange, bailment • Condition and warranties • Transfer of property, performance of a contract, rights of an unpaid seller. | 06 | 10% |
| 3 | THE NEGOTIABLE INSTRUMENTS ACT 1881 <ul style="list-style-type: none"> • Concept and significance of Socio-cultural Environment, Social responsibility concept and stake holder approach • Notes, bills and cheques. • Parties to a negotiable instrument, holder and holder in due course • Negotiation and Endorsement | 12 | 20% |
| 4 | THE COMPANIES ACT 1956 <ul style="list-style-type: none"> • Nature and types of companies, Formation of Companies, Memorandum of association • Articles of association, prospectus • Meeting Process & winding up Process | 12 | 20% |
| 5 | THE CONSUMER PROTECTION ACT | 15 | 25% |

| | | | |
|--|---|--|--|
| | 1986 <ul style="list-style-type: none"> Definitions, consumer protection councils, dispute redressing agencies and forums & its enforcement State and national commission, Penalties. THE INFORMATION TECHNOLOGY ACT 2000: <ul style="list-style-type: none"> Definition, electronic governance, Digital Signatures Penalties for damage to Computer, computer system The cyber regulation appellate tribunal, | | |
|--|---|--|--|

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|----------------------------|------------------|----------------|
| 1 | N.D. KAPOOR | Elements of Mercantile Law | Sultan Chand | Latest |

Reference Books:

| Sr. No. | Author/s | Name of theBook | Publisher | Edition |
|----------------|-----------------------|--------------------------------|---------------------|----------------|
| 1 | M. C. & Vivek Kuchhal | Elements of Business Laws | Vikas Publication | Latest |
| 2 | Rohini Agrawal | Mercantile and Commercial Laws | Taxmann's Publisher | Latest |
| 3 | C L Bansal | Business and Corporate Laws | Excel Books | Latest |
| 4 | Tejpal Seth | Business Laws | Pearson | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Business Standard
- Business Today
- NLIU Journal of Business Laws
- Journal of Business Law and Ethics

CO-PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|--------|-----|-----|------|-----|------|------|------|-----|------|
| CO1 | High | Low | Low | High | Low | Low | High | High | Low | Low |
| CO2 | Low | Low | Low | High | Low | High | High | High | Low | Low |
| CO3 | High | Low | Low | High | Low | High | High | High | Low | Low |
| CO4 | High | Low | Low | High | Low | Low | High | High | Low | Low |
| CO5 | Medium | Low | Low | High | Low | High | High | High | Low | Low |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester IV

Course Title: Consumer Behaviour

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|------------------------|------------|----------|------------|
| | | | | Theor y | Continuou s Assessment | Practic al | Theor y | Practic al |
| Electiv e | MBA404CO B | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To understand the conceptual foundations of consumer buying behaviour
2. To create awareness of the theories of motivation, perception and Personality and relation with consumer behaviour
3. To create awareness of the theories of Consumer learning and Consumer attitude.
4. Analyze how social and cultural dimensions and Consumer decision making shapes consumer behaviour.
5. To understand global consumer behaviour towards online buying and application.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Introduction to Consumer Behaviour: <ul style="list-style-type: none">• Definition of Consumer Behaviour• Nature & Scope of Consumer Behaviour• Consumer Psychology• Decision-making processes and Psychology• Consumer Behaviour and Marketing Action• Consumer involvement• Purchase Behaviour and Marketing Implications• Consumer Behaviour Models | 12 | 20% |
| 2 | Consumer as a Individual-I <ul style="list-style-type: none">• Consumer Motivation• Consumer Perception• Personality, Self-image and Lifestyle | 12 | 20% |
| 3 | Consumer as an Individual – II <ul style="list-style-type: none">• Consumer Learning• Consumer Attitude Formation• Attitude Change | 12 | 20% |
| 4 | Socio-Cultural settings and Consumer Behaviour: <ul style="list-style-type: none">• Reference groups• The Family and Social Class• Influence of Culture on Consumer Behaviour• Cross-cultural Consumer Behaviour. Consumer Decision Making: <ul style="list-style-type: none">• Consumer Decision Making-Concept• CBB models- Howard Sheth Model• Consumerism• Brief overview of Neuromarketing | 13 | 22% |
| 5 | The Global Consumer Behaviour and Online buying behaviour <ul style="list-style-type: none">• Consumer buying habits and perceptions of emerging non-store choices• Research and applications of consumer responses to direct marketing approaches• Issues of privacy and ethics. | 11 | 18% |

| Evaluation | | |
|-------------------|--|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Presentation etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---------------------------------|---|------------------|---------------------------------|
| 1 | Michael R. Solomon | Consumer Behaviour: Buying, Having and Being | Pearson | 2016 / 12 th Edition |
| 2 | David Loudon, A. J. Della Bitta | Consumer Behaviour: Concepts and Applicaitons | McGraw Hil | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of theBook | Publisher | Edition |
|----------------|---|---|------------------|---------------------------------|
| 1 | Leon G. Schiffman, Joe Wisenblit, S. Ramesh Kumar | Consumer Behaviour | Pearson | 2018 / 12 th Edition |
| 2 | S. Ramesh Kuma | Consumer Behaviour: The Indian Context (Concepts and Cases) | Pearson | 2017 / 2 nd Edition |

CO PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| CO1 | High | Medium | Medium | High | High | Medium | Medium | High | High | High |
| CO2 | High | High | Medium | High | High | Medium | High | Medium | Medium | High |
| CO3 | High | Medium | Medium | High | High | Medium | Medium | Medium | Medium | High |
| CO4 | High | High | Medium | High | High | Medium | Medium | High | Medium | High |
| CO5 | High | High | High | Medium | High | Medium | High | Medium | Medium | High |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester IV

Course Title: Corporate Restructuring

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | MBA | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs):

1. To make students familiarize with various techniques of corporate restructuring
2. To Examine the companies for merger & acquisitions.
3. To make students aware about how negotiation is to be carried out while merging in India
4. To increase understanding the act and policies regarding restructuring

Syllabus

| Module | Contents | No of Sessions | Weightage |
|----------|---|----------------|------------|
| 1 | INTRODUCTION <ul style="list-style-type: none"> • Meaning & Fundamental concept of corporate restructuring, different forms, motives & applications of corporate restructuring • Mergers & acquisitions concept, Objectives of mergers, Types of mergers (Horizontal, Vertical, Conglomerate), M&A process | 12 | 20% |
| 2 | VALUATION OF COMPANIES <ul style="list-style-type: none"> • Concept of Value of a Company • Methods of valuation Firm Valuation Models on Merger & Acquisition: <ul style="list-style-type: none"> DCF Model Comparable Company Book Value Adjusted Book Value Enterprise Value • Calculations of financial synergy and return, Corporate Restructuring & Divestiture, Financial Restructuring, Alliances & Joint Ventures, Employee Stock Ownership, Going Private & LBO (Leveraged Buyout), MBO (Management Buyout) • Valuation Practices in India | 18 | 30% |
| 3 | NEGOTIATION, DEAL STRUCTURING, AND METHODS OF PAYMENT IN MERGERS AND ACQUISITIONS <ul style="list-style-type: none"> • Introduction to deal structuring • Regulatory approval • Deal-making in India • Methods of payment in M&A • Distinction between stock and cash transactions • Types of exchange of shares | 15 | 25% |
| 4 | INTRODUCTION TO ACTS AND POLICIES <ul style="list-style-type: none"> • Amalgamation as per AS-14 and IFRS • Merger Aspects under Competition Law • Competition Bill 2002 | 15 | 25% |

| | | | |
|--|---|--|--|
| | <ul style="list-style-type: none"> SEBI regulations on Takeovers in India (Takeover Code) Role of Merchant Bankers in Mergers & Acquisition | | |
|--|---|--|--|

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|---|---|------------------|----------------|
| 1 | Weston, J. F., Chung, K. S., & Hoag, S. E | Mergers, Restructuring, and Corporate Control | Pearson | Latest |

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|--|-----------------------|----------------|
| 1 | B. Rajesh Kumar | Mergers and Acquisitions: Text and Cases | McGraw Hill Education | Latest |

Reference Books:

| | | | | |
|---|-----------------------|--|---|----------------|
| 2 | M.Y. Khan & P.K. Jain | Financial Management - Text Problem and Cases | Tata McGraw Hill Publishing Co.Ltd. | Latest Edition |
| 3 | Prasad G. Godbole | Mergers, Acquisitions, and Corporate Restructuring | Vikas Publishing House | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Business Standard
- Business Today
- Journal of Restructuring Finance

CO-PO MAPPING

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|------|--------|--------|-----|--------|------|--------|-----|-----|------|
| CO1 | High | Low | Low | Low | Medium | High | Medium | Low | Low | Low |
| CO2 | High | Medium | Low | Low | Medium | High | Medium | Low | Low | Low |
| CO3 | High | Medium | Medium | Low | Medium | High | Medium | Low | Low | Low |
| CO4 | High | Medium | Low | Low | Medium | High | Medium | Low | Low | Low |



School of Management, Commerce & Liberal Arts

MBA Programme

Semester IV

Course Title: HR Analytics

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Major | MBA404HRA | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To understand the concept of HR Analytics.
2. To analyses how various analytics modules.
3. To understand and learn to apply HR Metrics and reports
4. To remember and create data visualization of HR metrics
5. To create a HR metric dashboard

Syllabus

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|------------|
| 1 | Introduction to HR Analytics Definition of HR Analytics, Meaning of HR Measurement, Advantages and Disadvantages of HR Analytics Domains of HR Analyst. Meaning of HR Measurement, Data and Metrics, Relationship of Metrics and Analytics, Benefits of HR Metrics | 12 | 20 |
| 2 | Framework and Models in HR Analytics Importance of Predictive Models, Predictive Analytics Models, Significance of Predictive analytics | 12 | 20 |
| 3 | HR Metrics: Recruitment Metrics, Training Metrics and other HR Metrics, Employee Information, Benefits of HR reports, HR Reports for Effective Business Reporting, Recruiting report, Performance management report, HR reporting pitfalls | 12 | 20 |
| 4 | HR Data Visualization: Need For Data Visualization, Types of data visualizations , Dashboarding of KPIs (Tableau, Excel) | 12 | 20 |
| 5 | HR Audit: Concept and Definition of HR Audit, Objectives of human resource audit, Audit of HR Functions Project based on Recruitment and selection analytics and Predicting employee turnover and Employee attitude surveys | 12 | 20 |
| | Total | 60 | 100 |

| Evaluation | | |
|------------|---|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|---------|--|--|---------------------------------------|---------|
| 1 | Martin R Edwards and Kirsten Edwards | Predictive HR Analytics : Mastering the HR Metric | Kogan Page | latest |
| 2 | Shonna D. Waters PhD, Valerie Streets, Lindsay McFarlane, Rachael Johnson-Murray | The Practical Guide to HR Analytics: Using Data to Inform, Transform, and Empower HR Decisions | Society For Human Resource Management | latest |
| 3 | Nadeem Khan, Dave Millner | Introduction to People Analytics: A Practical Guide to Data-driven HR | Kogan Page | latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Harvard Business Review
- Times Ascent and Times of India Editorial Page
- Journal of Human Values (IIM Calcutta Journal)

CO PO Mapping

| CO * | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|------|------|------|------|-----|--------|--------|-----|-----|--------|------|
| CO1 | High | High | High | Low | Medium | Medium | Low | Low | Medium | High |
| CO2 | High | High | High | Low | Medium | Medium | Low | Low | Medium | High |
| CO3 | High | High | High | Low | Medium | Medium | Low | Low | Medium | High |
| CO4 | High | High | High | Low | Medium | Medium | Low | Low | Medium | High |
| CO5 | High | High | High | Low | Medium | Medium | Low | Low | Medium | High |



School of Management, Commerce & Liberal Arts

MBA Program

MBA Semester IV

Course Title: Financial Derivatives

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MBA405FID | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To understand the students about the concept of Derivatives and its types.
2. To acquaint the knowledge of Forward and Futures contract and settlement of future price
3. Analysis of risk Management using Options and SWAPs
4. To gain the knowledge about Hedging and the development position of Derivatives in India
5. To understand evaluation of derivatives and derivatives trading at NSE/BSE.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|---------------|---|-----------------------|------------------|
| 1 | <p>Definition of Derivatives: Brief history of derivatives, Evolution of Commodity, Currency, Stocks and Interest Rate Derivatives, Structure of derivative markets, forwards, futures, options, swaps etc. Features of a Financial Derivative – Types of Financial Derivatives – Basic Financial derivatives, Critiques of Derivatives.</p> <p>Underlying assets: Equities, currencies, commodities and interest rates.</p> <p>Reasons for trading: Risk management, speculation, Hedging and arbitrage.</p> | 12 | 20% |
| 2 | <p>Forward Contract: Pricing and Trading Mechanism – Forward Contract concept – Features of Forward Contract – Classification of Forward Contracts – Forward Trading Mechanism – Forward Prices Vs Future Prices.</p> <p>Futures Contract: Financial Futures Contracts – Types of Financial Futures Contract – Evolution of futures market in India – traders in futures market in India – Functions and growth of futures markets – Futures market trading Mechanism - Specification of the future contract – Clearing house – Operation of margins – Settlement – Future prices and Risk aversion – Forward Contract Vs. Futures Contracts.</p> | 15 | 25% |
| 3 | <p>Options and Swaps:</p> <p>Options: Concept of Options – Types of options – Option valuation – Option positions naked and covered Option – Underlying assets in exchange-traded Options – determinants of Option prices – Binomial Option pricing model – Black-Scholes Option pricing – Basic principles of option trading –</p> <p>SWAP: Concept, Evaluation and features of Swap – types of financial swaps – Interest rate Swaps – currency swap – Debt Equity Swap.</p> | 12 | 20% |
| 4 | <p>Hedging and Stock Index Futures – Concepts – Perfect Hedging model – Basic, Long and Short Hedges – Cross Hedging – Basis Risk</p> | 12 | 20% |

| | | | |
|----------|---|----------|------------|
| | and Hedging – Basis Risk Vs Price Risk – Hedging effectiveness – Hedging objectives – management of Hedge – Concept of Stock Index: Stock Index Futures – Stock Index Futures as a Portfolio management Tool. | | |
| 5 | Financial Derivatives Market in India: Need for Derivatives – Evolution of Derivatives in India – benefits of Derivatives in India – categories of Derivatives traded in India – Derivatives trading at NSE/BSE Eligibility of Stocks – Emerging Structure of Derivatives Markets in India - Regulatory Instruments. | 9 | 15% |

| Evaluation | | |
|-------------------|--|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Presentation etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|--|------------------|----------------|
| 1 | Gupta S.L. | Financial Derivatives Theory Concepts and Problems | PHI | Second Edition |
| 2 | Gupta | Financial Derivatives | PHI | Latest Edition |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|-----------------|---|--|----------------|
| 1 | Kumar | Financial Derivatives | PHI | Latest Edition |
| 2 | John C. Hull | Options, Futures & other derivatives | Tata Mc Graw Hill | Latest Edition |
| 3 | Chance, Don M: | Derivatives and Risk Management Basics, | Cengage Learning, Delhi. | Latest Edition |
| 4 | Hull John. C | Options, Futures and Other Derivatives | Pearson Educations Publishers, New Delhi | Latest Edition |

List of Journals / Periodicals / Magazines / Newspapers etc.:

- Business Standard
- The Economic Times
- Financial Express
- NSE & BSE, SEBI, FMC, RBI Websites
- ICFAI journal of Derivative Market
- Business Today
- Business India
- Business World
- Finance India
- Treasury Management
- Financial Risk Management

CO-PO MAPPING

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|--------|--------|--------|-----|--------|------|--------|-----|-----|------|
| CO1 | Medium | Medium | Medium | Low | Low | High | Low | Low | Low | High |
| CO2 | Medium | High | Medium | Low | Low | High | Low | Low | Low | High |
| CO3 | Medium | High | Medium | Low | Low | High | Medium | Low | Low | High |
| CO4 | Medium | High | Medium | Low | Medium | High | Medium | Low | Low | High |
| CO5 | Medium | High | Medium | Low | Medium | High | Medium | Low | Low | High |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester IV

Course Title: Industrial Relations and Labour Laws

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Core | MBA405INR | 4 | 60 | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To elaborate the concept of Industrial Relations and Labour laws
2. To discuss and analyse requirement different mechanisms of addressing disputes, grievances and workers' welfare, Trade Union and Industrial Employment
3. To summarize the important provisions of Wage Legislations, in reference to Factory Act 1948 and Contract Labour (Regulation and Abolition) Act, 1970
4. To summarize the important provisions of labour Legislations, in reference to Worker's Participation In Management and Code of Discipline in India
5. To summarize the important provisions of labour Legislations Sexual harassment of women in workplace, The Child Labour (Prohibition and Regulation) Act, 1986: and Apprentice Act, 1961:

Syllabus

| Module | Contents | No of Sessions | Weightage |
|--------|---|----------------|-----------|
| 1 | Philosophy of Industrial Relation <ul style="list-style-type: none"> ● Nature and Need ● Objectives and Principles of Labour Laws ● Social Justice ● Fundamental Rights ● Directive Principles ● Judicial Activism and Labour Welfare in India ● Impact of Liberalization and Globalization ● Labour Policy of India | 12 | 20% |
| 2 | Industrial Disputes Act, 1947 <ul style="list-style-type: none"> ● Introduction, Objectives, Definitions ● Various Methods and Various Authorities under the Act for resolution of industrial disputes e.g. methods of conciliation, adjudication and voluntary arbitration, ● Authorities like Works Committee, Conciliation officer, Court of Enquiry, Labour Court, Industrial Tribunal, National Tribunal ● Provisions with respect to Strikes and Lockouts, Layoff and retrenchment Trade Unions and Trade Unions Act, 1926 <ul style="list-style-type: none"> ● Meaning and Definitions ● Objectives Trade Union ● Functions ● Registration Process Industrial employment standing order Act 1946 <ul style="list-style-type: none"> ● Introduction, Objectives ● Definitions ● Model Standing Orders ● Offences and penalties | 12 | 20% |
| 3 | Factory Act 1948 <ul style="list-style-type: none"> ● Objectives, definitions ● Provisions regarding Health, safety, Welfare of workers, hazardous processes, working hours, restriction on employment of women and children, annual leave with wages, offences and | 12 | 20% |

| | | | |
|----------|--|-----------|------------|
| | <p>penalties</p> <p>Contract Labour (Regulation and Abolition) Act, 1970</p> <ul style="list-style-type: none"> ● Application, Establishments ● Definitions, jurisdiction of government ● Central and State advisory boards ● Registration of establishments and licensing of ● contractors ● Prohibition of employment of contract labour | | |
| 4 | <p>Worker's Participation In Management</p> <ul style="list-style-type: none"> ● Concept, Objectives, evolution ● Statutory and Non-Statutory Forms of WPM ● Level of WPM ● Assessment of WPM in India <p>Code of Discipline in India</p> <ul style="list-style-type: none"> ● Meaning and definitions, Characteristics ● Objectives of discipline ● Code of Discipline ● Disciplinary proceedings - procedure for ● disciplinary action - Misconduct - Charge sheet - ● service of charge sheet - power to suspend pending | 12 | 20% |
| 5 | <p>Sexual harassment of women in workplace</p> <ul style="list-style-type: none"> ● Nature of problem ● Supreme Court's guidelines on this issue. <p>The Child Labour (Prohibition and Regulation) Act, 1986:</p> <ul style="list-style-type: none"> ● Object and Scope; Definition; ● Prohibition of employment of children in certain occupations and processes ● Regulation of Conditions of Work of Children Weekly holidays <p>Apprentice Act, 1961:</p> <ul style="list-style-type: none"> ● Statements of objects ● Period of apprenticeship training ● Essential ingredient of contract of apprenticeship ● Registration of contract of apprenticeship ● Obligations of apprentices | 12 | 20% |

| Evaluation | | |
|-------------------|---|---------------------------|
| 1 | Assignments/ Quizzes/Class Participation / Role Play/Project etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s Name | Name of the Book | Publisher | Edition |
|----------------|----------------------|--------------------------------------|------------------|----------------|
| 1 | B.D.Singh | Industrial Relations And Labour Laws | Excel | Latest |

Reference Books:

| Sr. No. | Author/s Name | Name of the Book | Publisher | Edition |
|----------------|----------------------|--|--------------------------------------|----------------|
| 1 | M Sarma | Industrial Relations- Conceptual & legal framework | Himalaya Publication | Latest |
| 2 | S C Srivastava | Industrial Relations and Labour Laws | Vikas Publishing House Pvt Ltd Delhi | Latest |
| 3 | C.B.Mamoria | Dynamics of Industrial Relation | Himalaya Publication | Latest |

List of Journals / Periodicals / Magazines / Newspapers:

The students will have to refer to past issues of the following journals in order to get relevant topic/information pertaining to the subject.

- Journal of Human Resource Management, Sage publication
- Business Standards
- Harvard Business Review

CO-PO MAPPING

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|--------|--------|--------|------|-----|-----|--------|------|------|------|
| CO1 | High | Medium | Medium | High | Low | Low | Medium | High | High | High |
| CO2 | Medium | High | Medium | High | Low | Low | High | High | High | High |
| CO3 | Medium | Medium | Medium | High | Low | Low | Medium | High | High | High |
| CO4 | High | Medium | Medium | High | Low | Low | High | High | High | High |
| CO5 | High | Medium | Medium | High | Low | Low | Medium | High | High | High |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester IV

Course Title: Product and Brand Management

| Category of Course | Course Code | Credit | Contact Hours | Internal | | | External | |
|--------------------|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| Elective | MBA405PBM | 4 | 60 | | | | | |
| | | | | 20% | 30% | - | 50% | - |

Course Outcomes (COs)

1. To learn fundamentals of Product and Brand Management.
2. The aim of Product Management Part is to make participants understand competition at product level as well as brand level.
3. To understand important aspects of product and brand management from competition point of view.
4. The objective of brand management is to make students understand principles of Branding, role of brands, elements and components of brands, brand equity etc.
5. The main aim for brand management is to make sure that students understand implications of planning, implementing and evaluating Branding Strategies.

Syllabus:

| Module | Contents | No of Sessions | Weightage |
|--------|--|----------------|-----------|
| 1 | Introduction to Product: Competition & Product Strategy, product in theory & in practice, Product life cycle, product portfolio. | 12 | 20% |
| 2 | Product Management & New Product Development: New product development process, New product strategy, commercialization, managing Growth, Managing the mature 20% Product | 12 | 20% |
| 3 | Branding & Brand Management: The concept of Brand Equity, Creating brands in a competitive market, Brand Positioning and Brand Associations, Using Brand Elements to create brand equity, Leveraging Secondary Brand Associations. | 12 | 20% |
| 4 | Growing and Sustaining Brand Equity: Designing and Implementing Branding Strategies, Launching Brand Extensions Products, Managing brands overtime and Geographic boundaries. Developing a Brand Equity Management System. Measuring Sources of Brand Equity and Brand Equity measurement approaches. | 13 | 22% |
| 5 | Case Study Discussions: Samsung's Mobile Business, Tata Motors, Nykaa, Intel: Building a Technology Brand, Brand Elements of Parle-G Biscuit Brand etc. | 11 | 18% |

| Evaluation | | |
|------------|--|---------------------------|
| 1 | Assignments / Quizzes / Class Participation / Role Play/ Presentation etc. | 30% (Internal Assessment) |
| 2 | Internal Examination | 20% (Internal Assessment) |
| 3 | External Examination (University Exam) | 50% (External Assessment) |

Basic Text Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|---------------------------------|-------------------|-----------------|
| 1 | Michael Baker and Susan Hart | Product Strategy and Management | Pearson Education | Second Edition. |
| 2 | Kevin Lane Keller, M.G. Rameswaram and Isaac Jacob | Strategic Brand Management | Pearson Education | Third Edition. |

Reference Books:

| Sr. No. | Author/s | Name of the Book | Publisher | Edition |
|----------------|--|---|---|----------------|
| 1 | Donald R. Lehmann and Russell S. Winer | Product Management | TMH | Fourth Edition |
| 2 | Kapferer, J.-N. (1997) | Strategic Brand Management | London: Kogan Page Limited | Latest Edition |
| 3 | M. G. Parameswaran | Building Brand Value : Five Steps of Building Powerful Brands | New Delhi: Tata McGraw Hill | 2006 |
| 4 | H. V. Verma | Brand Management | New Delhi: Excel Books | 2004 |
| 5 | B. VanAuken | Branding, A reference guide to solving your toughest branding problems and strengthening your market position | Jaico Publishing House | 2007 |
| 6 | Prank K Chaudhary | Successful Branding | University (India) Press Limited, Hyderabad | 2001 |
| 7 | Ramanuj Majumdar | Product Management in India | PHI EEE | Latest Edition |

CO PO Mapping

| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 |
|-----|------|--------|--------|--------|------|--------|--------|--------|--------|------|
| CO1 | High | Medium | Medium | High | High | Medium | Medium | High | High | High |
| CO2 | High | High | Medium | High | High | Medium | High | Medium | Medium | High |
| CO3 | High | Medium | Medium | High | High | Medium | Medium | Medium | Medium | High |
| CO4 | High | High | Medium | High | High | Medium | Medium | High | Medium | High |
| CO5 | High | High | High | Medium | High | Medium | High | Medium | Medium | High |



School of Management, Commerce & Liberal Arts

MBA Programme

MBA Semester IV

Course Title: Research Project

| Course Code | Credit | Contact Hours | Internal | | | External | |
|-------------|--------|---------------|----------|-----------------------|-----------|----------|-----------|
| | | | Theory | Continuous Assessment | Practical | Theory | Practical |
| MBA406REP | 6 | 90 | | | | | |
| | | | 0 | 0 | 50% | 0 | 50% |

Course Outcomes (COs)

1. To practice theoretical concepts in Research methods
2. To provide students an opportunity of qualitative and quantitative research based learning in a systematic manner.
3. To apply conceptual knowledge using statistical techniques of data analysis
4. To learn art of writing research paper/ research Article.

Course Outline:

Students will work on the Research Project from the commencement of the semester IV. Students with the help of Guide/Mentor will conduct a research on primary or secondary data using some statistical tools and research techniques in the area of specialization under the guidance of Guide/Mentor. On the satisfactory completion of the work the School/Department/Institute will issue a completion certificate to the candidate concerned. It is an individual research project.

The student will have to submit the Research Project Report as per the guidelines of the Research Project. The Internal marks will be based on the stage wise submission guidelines. External marks will be based on viva voce and report submission. Detailed guidelines will be issued during the research project tenure.

| Evaluation | | |
|------------|--|--------------------------|
| 1 | Internal Assessment (Report, Viva voce) | 50%(Internal Assessment) |
| 2 | External Examination (External Viva voce with report submission) | 50%(External Assessment) |

Master of Physiotherapy Neurological Sciences

Paper-VI: Elective-I: Basics, Assessment and Evaluation Neuroanatomy, Neurophysiology and Patho mechanics.

| Teaching Scheme | | | Evaluation Scheme | | | | |
|-----------------|-----------|-------|-------------------|----|----------|----|-------|
| Theory | Practical | Total | Internal | | External | | Total |
| | | | Th | Pr | Th | Pr | |
| 4 | 4 | 8 | 30 | - | 70 | - | 100 |

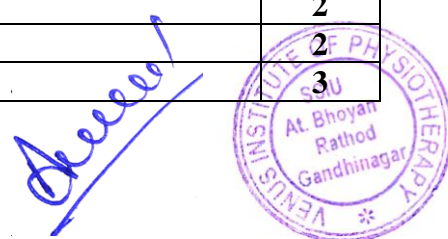
NEUROANATOMY

| | | |
|----|---|---|
| 1 | Embryological development, growth & maturation of nervous system. | 2 |
| 2 | Normal Sequential behavior and physiological changes throughout the developmental arc. | 2 |
| 3 | Introduction and organization of nervous system, normal development of brain and spinal cord. | 2 |
| 4 | Neuro biology of neurons and Neuroglia | 2 |
| 5 | Coverings of the nervous system | 2 |
| 6 | Nerve fibres | 2 |
| 7 | Dermatomes and myotomes | 2 |
| 8 | Cerebrum and cerebral hemispheres, Cerebral cortex | 5 |
| 9 | Cerebellum and its connections | 5 |
| 10 | Brain stem, Midbrain, Pons, Medulla | 5 |
| 11 | Thalamus, hypothalamus and their connections | 5 |
| 12 | Limbic system, reticular formation | 3 |
| 13 | Internal capsule, corpus straitum | 3 |
| 14 | Basal ganglia and its connections | 5 |
| 15 | Ventricular system and CSF | 3 |
| 16 | Blood brain barrier | 2 |
| 17 | Spinal cord, tracts ascending & descending | 6 |
| 18 | Blood supply of CNS and peripheral nervous system, venous drainage of CNS | 3 |
| 19 | Peripheral nervous system | 2 |
| 20 | Autonomic nervous system | 2 |
| 21 | Cranial nerves and their nuclei | 4 |

NEUROPHYSIOLOGY

Functions of all the organs including:

| | | |
|---|--|---|
| 1 | Nerve fibers & Coverings of the nervous system | 2 |
| 2 | Dermatomes and myotomes. | 2 |
| 3 | Cerebrum and cerebral hemispheres, Cerebral cortex | 3 |



| | | |
|----|--|------------|
| 4 | Cerebellum and its connections | 3 |
| 5 | Brain stem, Midbrain, Pons & medulla | 4 |
| 6 | Thalamus, hypothalamus and its connections | 2 |
| 7 | Limbic system, reticular formation | 2 |
| 8 | Special senses | 2 |
| 9 | Internal capsule, corpus striatum | 2 |
| 10 | Basal ganglia and its connections | 2 |
| 11 | Ventricular system and CSF | 2 |
| 12 | Blood brain barrier | 2 |
| 13 | Spinal cord, tracts ascending & descending | 2 |
| 14 | Blood supply of CNS and peripheral nervous system, venous drainage of CNS | 2 |
| 15 | Peripheral nervous system | 2 |
| 16 | Autonomic nervous system | 2 |
| 17 | Neurophysiology of balance, co-ordination & locomotion | 2 |
| 18 | Cranial nerves and their nuclei | 4 |
| 19 | Motor control | 5 |
| 20 | Neural development of posture and gait | 2 |
| 21 | Physiology of pain | 2 |
| 22 | Physiology of reflexes – normal and abnormal | 2 |
| 23 | Physiological basis of motor learning and recovery of functional motor control | 4 |
| | Total Hours | 152 |

PATHOMECHANICS

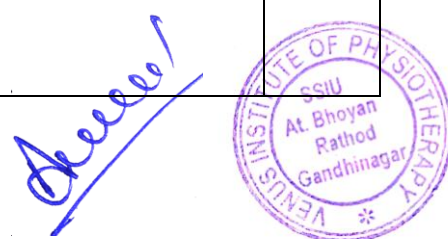
| | | |
|----|--|---|
| 1. | Pathophysiology of Pain | 2 |
| 2. | Intracranial neoplasms, Gliomas, Meningiomas, Neuromas, Angiomas, Cranio, Pharyngiomas, Pituitary adenomas, Medical and surgical management. | 3 |
| 3. | Pyogenic infections of CNS: Meningitis, Brain abscess, Tuberculosis, Neurosyphilis. | 2 |
| 4. | Viral infections of CNS: Poliomyelitis, Viral encephalitis, Substance sclerosing encephalitis, AIDS | 2 |
| 5 | Cerebro vascular disease: Stroke syndrome, Ischaemic stroke infarction, Thrombo- embolic stroke, Hemorrhagic stroke, Transient ischaemic attack, | 2 |

Shree



| | | |
|-----|---|------------|
| | Arterio- venous malformation of the brain, Intracranial hemorrhage | |
| 6. | Metabolic disorders of brain: Hypoencephalopathy, Hypoglycemic encephalopathy, Hepatic encephalopathy | 2 |
| 7. | Degenerative disease of the brain: Parkinson's disease, Motor neurone disease, Amyotrophic lateral sclerosis, Progressive bulbar palsy, Alzheimer's disease. | 3 |
| 8. | Cerebral palsy | 2 |
| 9. | Spina bifida | 1 |
| 10 | Polyneuropathy: Post infective Polyneuropathy (gullian bare syndrome) diabetic neuropathy, Hereditary sensory neuropathy. | 1 |
| 11. | Disorders of spinal cord: Compression of spinal cord, Neoplasm of the vertebral column, Inter vertebral disc prolapsed, Extra dural or epidural abscess. | 2 |
| 12. | Syringomyelia, Multiple sclerosis, Myasthenia gravis | 1 |
| 13. | Peripheral nerve and plexus lesions | 1 |
| 14 | Cervicovertebral junction abnormalities | 1 |
| 15. | Hydrocephalus | 1 |
| 16. | Cerebral lesions | 2 |
| | Total Hours | 152 |

| Practical's of Elective-I Physiotherapy in Neurological Sciences: Assessment and Evaluation | | |
|---|--|-----------|
| 1 | Measures of cognitive impairment and disability; a. Glasgow coma scales b. Children's coma scales c. Edinburgh – 2 coma scale d. Blessed dementia rating scales; information concentration – memory test; dementia scale | 10 |
| 2 | Measure of motor impairment; a. Motor club assessment b. Rivermead motor assessment c. Motricity index d. Trunk control test e. Motor assessment scale f. Modified ashworth scale for spasticity g. Isometric muscle strength h. Motor neuron disease/ amyotrophic lateral sclerosis | 12 |



| | | |
|----|---|----|
| | i. Dynamometer | |
| 3 | Measures of focal disability; a. Standing balance b. Functional ambulation categories c. Hauser ambulation index d. Timed walking test e. Rivermead mobility index f. Nine hole peg test g. Action research arm test h. Franchay arm test | 10 |
| 4 | Activities of daily living and extended ADL tests; a. Barthel ADL index b. Katz ADL index c. Nottingham ten point ADL index d. Rivermaid ADL scale e. Northwick park index of independence in ADL f. Kenny self care evaluation g. Nottingham extended ADL index h. Frenchay activity index | 15 |
| 5 | Global measures of disability; a. OPCS disability scale: severity categories b. functional independence measure c. PULSES profile | 10 |
| 6 | Measures of handicap and quality of life; a. WHO handicap scale b. Rankin scale c. Glasgow outcome scale d. Quality of life : a measure e. Environmental assessment – non standard | 10 |
| 7 | Multiple sclerosis; a. Kurtzke multiple sclerosis rating scale b. An illness severity for multiple sclerosis | 10 |
| 8 | Stroke scales; a. Mathew stroke scale b. National institute of health stroke scale c. Canadian neurological scale d. Orgogozo score e. hemispheric stroke scale f. clinical classification of scale g. Clinical classification of stroke (Bamford) h. Allen score for prognosis of stroke i. Guy's hospital score for haemorrhage | 15 |
| 9 | Head injury; a. Galveston orientation and amnesia test b. Rappaport disability rating scale | 10 |
| 10 | Parkinson's disease; a. Parkinson's disease impairment index, disability index b. Hoehn and Yahr grades | 10 |

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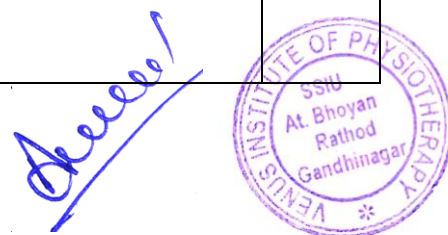
| | | |
|----|---|------------|
| | c. Unified Parkinson's diseases rating scale version 3 | |
| 11 | Spinal cord injury; a. Frankel's scale b. Motor index and sensory indices c. American spinal cord injury association assessment chart d. Pain assessment and evaluation | 10 |
| 12 | Basic elements of Neuro Diagnostic Tests; a. CT scan b. MRI c. Carotid Angiography d. Myelography e. X- ray f. Nuclear imaging g. Electroencephalogram h. Electromyography i. Nerve Conduction Velocity j. Evoked potential tests k. Muscle and Nerve Biopsy l. CSF examination | 20 |
| 13 | Assessment of posture, gait, coordination, voluntary control | 10 |
| | Total Hours | 152 |

Paper-VII: Elective-II: Physiotherapy In Neurological Sciences Clinical Neurological Conditions And Physiotherapeutics Intervention

| Teaching Scheme | | | Evaluation Scheme | | | | |
|-----------------|-----------|-------|-------------------|----|----------|----|-------|
| Theory | Practical | Total | Internal | | External | | Total |
| | | | Th | Pr | Th | Pr | |
| 4 | 4 | 8 | 30 | - | 70 | - | 100 |

Causes, clinical features, pathophysiology, general investigation, medical and surgical management of the below-mentioned conditions:

| | | |
|----|--|---|
| 1. | Intracranial neoplasms, Gliomas, Meningiomas, Neuromas, Angiomas, Cranio, Pharyngiomas, Pituitary adenomas, Medical and surgical management. | 8 |
|----|--|---|



| | | |
|----|--|----|
| 2. | Pyogenic infections of CNS: Meningitis, Brain abscess, Tuberculosis, Neurosyphilis. | 8 |
| 3 | Viral infections of CNS: Poliomyelitis, Viral encephalitis, Substance sclerosing encephalitis, AIDS | 7 |
| 4 | Cerebro vascular disease: Stroke syndrome, Ischaemic stroke infarction, Thrombo- embolic stroke, Hemorrhagic stroke, Transient ischaemic attack, Arterio- venous malformation of the brain, Intracranial hemorrhage | 8 |
| 5 | Metabolic disorders of brain: Hypoencephalopathy, Hypoglycemic encephalopathy, Hepatic encephalopathy | 6 |
| 6 | Degenerative disease of the brain: Parkinson's disease, Motor neurone disease, Amyotrophic lateral sclerosis, Progressive bulbar palsy, Alzheimer's disease. | 10 |
| 7 | Cerebral palsy | 5 |
| 8 | Spina bifida | 5 |
| 9 | Polyneuropathy: Post infective Polyneuropathy (gullian bare syndrome) diabetic neuropathy, Hereditary sensory neuropathy. | 6 |
| 10 | Disorders of spinal cord: Compression of spinal cord, Neoplasm of the vertebral column, Inter vertebral disc prolapsed, Extra dural or epidural abscess. | 8 |
| 11 | Syringomyelia, Multiple sclerosis, Myasthenia gravis | 8 |
| 12 | Peripheral nerve and plexus lesions | 5 |
| 13 | Cervicovertebral junction abnormalities | 5 |
| 14 | Hydrocephalus | 3 |
| 15 | Cerebral lesions | 5 |
| 16 | Disorders of motor unit (Neuromuscular disease) a. Muscle pain and tenderness b. Muscle weakness c. Changes in muscle mass d. Muscle hyperactivity states e. Muscle fatigability | 12 |

Shree



| | | |
|----|--|------------|
| | f. Abnormal muscle tone (Hypotonic) g. Abnormalities of sensation h. Reduced or absent stretch reflexes | |
| 17 | Disorders of muscle (Myopathies) a. Myasthenia gravis and other disorders of neuromuscular transmission b. Disorders of the peripheral nervous system c. Disorders of the anterior horn cells (Neuronopathies) | 10 |
| 18 | Disorders of central motor control a. Abnormal muscle tone b. Muscle weakness c. Loss of muscular endurance d. Altered muscle activation patterns e. Involuntary movements f. Associated reactions g. Abnormalities of coordination h. Apraxia i. Hypokinesia j. Abnormal skeletal muscle reflexes k. Abnormal balance l. Abnormalities of sensation | 15 |
| 19 | Other associated manifestations a. Abnormalities in communications b. Abnormalities in swallowing c. Abnormalities of bladder and bowel functions d. Learning disorders e. Visual dysfunction f. Cognitive and perceptual dysfunction | 18 |
| | Total Hours | 152 |

PHYSIOTHERAPY INTERVENTIONS IN NEUROLOGICAL CONDITIONS

| Practicals of Elective-II Physiotherapy in Neurological Sciences CLINICAL CONDITIONS & PHYSIOTHERAPY INTERVENTIONS | | |
|---|--|----|
| 1. | Physiotherapeutic interventions for relief of pain | 8 |
| 2. | Physiotherapy management of patients with postural control, mobility control disorders | 7 |
| 3. | Neurological Rehabilitation – Neurofacilitation Approach | 10 |
| 4. | Intracranial neoplasms, Gliomas, Meningiomas, Neuromas, Angiomas, Cranio, Pharyngiomas, Pituitary adenomas, Medical and surgical management. | 8 |

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| 5. | Pyogenic infections of CNS: Meningitis, Brain abscess, Tuberculosis, Neurosyphilis. | 8 |
| 6. | Viral infections of CNS: Poliomyelitis, Viral encephalitis, Substance sclerosing encephalitis, AIDS | 8 |
| 7. | Cerebro vascular disease: Stroke syndrome, Ischaemic stroke infarction, Thrombo- embolic stroke, Hemorrhagic stroke, Transient ischaemic attack, Arterio- venous malformation of the brain, Intracranial hemorrhage | 15 |
| 8. | Metabolic disorders of brain: Hypoencephalopathy, Hypoglycemic encephalopathy, Hepatic encephalopathy | 8 |
| 9. | Degenerative disease of the brain: Parkinson's disease, Motor neurone disease, Amyotrophic lateral sclerosis, Progressive bulbar palsy, Alzheimer's disease. | 15 |
| 10. | Cerebral palsy | 8 |
| 11. | Spina bifida | 6 |
| 12. | Polyneuropathy: Post infective Polyneuropathy (gullian bare syndrome) diabetic neuropathy, Hereditary sensory neuropathy. | 8 |
| 13. | Disorders of spinal cord: Compression of spinal cord, Neoplasm of the vertebral column, Inter vertebral disc prolapsed, Extra dural or epidural abscess. | 8 |
| 14. | Syringomyelia, Multiple sclerosis, Myasthenia gravis | 10 |
| 15. | Peripheral nerve and plexus lesions | 5 |
| 16. | Cervicovertebral junction abnormalities | 5 |
| 17. | Hydrocephalus | 5 |
| 18. | Cerebral lesions | 10 |
| | Total Hours | 152 |

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