SWARRNIM START UP AND INNOVATION UNIVERSITY

FACULTY OF MEDICINE

DEGREE OF MASTER OF PHYSIOTHERAPY (M.PHYSIO.)

Courses of studies prescribed for First & Second M. Physiotherapy examination

(In force for students admitted in October 2023 & thereafter)

RULES OF DEGREE OF THE MASTER OF PHYSIOTHERAPY

INDEX

R.M PHYSIO. 1:- THE COURSE

1.1. The Master of Physiotherapy Course will be a regular full time course of 2 years duration. During an academic year, a candidate enrolled in the program shall not appear in any other examination of the university enrolled in/or any other university. Any break in the career, power of extension of the course and the fixation of the term will be vested with the university.

R.M PHYSIO 2:- NOMENCLATURE

The course will be referred to as a Master of Physiotherapy.

R.M PHYSIO 3:- OBJECTIVES OF THE COURSE

1. To prepare a postgraduate student towards professional autonomy with self-regulating discipline.
2. To form base of professional practice by referral as well as first contact mode using evidence based practices.
3. To impart research basis in order to validate techniques & technologies in practice of physiotherapy.
4. To acquaint a student with concept of quality care at the institutional as well as at the community levels.
5. To inculcate appropriate professional relationship in multi-disciplinary set up, patient management & co-partnership basis.
6. To prepare students to address problems related to health education & community physiotherapy.
7. To practice the concept of protection of the community during referral as well as first contact practice.
8. To incorporate concept of management in physiotherapy.
9. To provide experience in clinical training & under graduate training partly.
10. To provide honest competent & accountable physiotherapy services to the community.

R.M. PHYSIO 4:- ELIGIBILITY CRITERIA FOR ADMISSION

4.1. He/ She must be an Indian, Foreign student can also join program under Foreign student policy of Government of India.

4.2. Candidate must have completed the recognized B. Physiotherapy or equivalent course and compulsory rotating internship before the date of interview. All candidates shall have to submit the documentary proof from the Principal/ Dean of college regarding the date of completion of internship along with the application, failing which their application shall be summarily rejected. However candidate should have to produce full internship completion certificate at the time of interview, failing which, candidate will not be eligible for admission.

4.3. Candidate who is currently engaged in P.G. Physiotherapy studies in any University or any other University or equivalent body is not eligible. On completion of course he / she become eligible. Completion of course means he/ she must have completed the course training and passed the course examination conducted by concerned University.

4.4. Candidate, who in the past selected and admitted to any P.G. Physiotherapy course of this or any other university or equivalent body and did not complete that course, is not eligible.

4.5 Candidate who had applied earlier to this University and who was disqualified because of reasons mentioned in Rules 6.5 is not eligible.

4.6. Candidate who is graduate of a University other than Swarrnim Startup and Innovation University should have to submit provisional eligibility certificate (P.E.C.) and/or Migration certificate from your previous University within one month from the date of his / her admission, failing which the admission of candidate shall be cancelled and will not be eligible to apply in future.

4.7. Candidate has to appear in Competitive examination for admission to Post – graduate Physiotherapy courses held by Swarrnim Startup and Innovation University and admission to P.G. Course will be given as per merit of entrance test. (See Rules 4.1, 4.2, 4.3, 5.0 &7.0)
Admission Committee Admission and Placement of these candidates under particular Post Graduate Teacher shall be decided by the "Admission Committee" of this University. The Admission Committee will be asunder:
Dean, Medical Faculty –Chairman
Head of the P.G. Institute / College where P.G. courses are conducted and one of its nominees from teaching staff.
Maximum up to five members of the teaching staff nominated by Chairman.
One member of Executive Council nominated byVice- chancellor.
Pro-Vice-Chancellor will be the permanent invitee.
Total seats of PG M. Physiotherapy will be filled up by the Admission Committee of the University.

For this purpose selection will be done once in each academic year.
First Academic Term: 1st May to 30th October.
Second Academic Term: 1st November to 30th April Next Year.

4.8. Selection: Selection of candidates eligible under Rule 1 for seats under Rule 3.0 will be done category wise on the basis of merits as laid down herein further.
Preference shall be given to candidates graduating from this University who has completed internship/horsemanship.
4.9. Candidates graduating from any other University located in Gujarat State and completed the compulsory

internship/ horsemanship.

4.10. Candidates graduating from any other University located outside Gujarat State, in INDIA, and completed the compulsory internship/ horsemanship.

4.11. The candidate will be given a choice of subject and Post –Graduate Teacher according to his merit level. He / she will have to choose Registration with Residency out of the available choices in different subjects under particular teacher at his merit level. No student shall be given P.G. Admission without Residency (or higher post).

4.12. Seats can be utilized in the same academic year only and vacancy in any one academic year cannot be utilized in subsequent academic year.

4.13. The affiliated PG college separately will prepare the category wise seat list in each subject. 7% of seats available for PG Degree Rule 3 will be reserved for the candidates belonging to Scheduled Caste, 15% of seats will be similarly reserved for ST candidates and 27% of seats will be reserved for candidates belonging to socially and Educationally Backward Class (SEBC) students including widows and orphan children. The students desiring admissions under SEBC category will have to submit a certificate of current academic or financial year i.e. issued on or after 1st April every year that they are not included in the creamy layer from competent authority as prescribed by the Govt. of Gujarat from time to time along with the application.

4.14. Three percent (3%) of available seats in each category (SC/ ST/ SEBC/ OPEN) in Loco-motor disability (PH) shall be reserved for loco-motor disabled candidates of the respective category provided that a candidate having "loco-motor disability of lower limbs between 50% to 70% (upper limbs being normal). The certificate must be obtained as per the Performa annexed to the application form from Medical Board constituted for the purpose regarding disability and suitability of such candidate for undertaking the course shall be treated as final. For allocation of seats to physically handicapped category in said year, Roster point guideline given by Govt. of Gujarat will be followed.

4.15. These seats are reserved for the candidates belonging to SC/ ST & SEBC recognized as such in the State of Gujarat and not those or whose parents have migrated from other State to Gujarat State.
For allocation of seats (SC/ ST/ SEBC) in the said year to this reserved category a 100 point Roster, register will be followed, record of which will be maintained by University/ respective College/ Institutions.

(a) In case the seats reserved under rule 5.0 remain vacant due to non- availability of the candidates of the specified category up to Rule 4.1 selection, they shall be treated as unreserved seats and will be filled up by the candidates on the basis of merit from those who are eligible as per Rule4.1.
of these, unfilled seats will be subsequently re-reserved after operation of Rule 4.1 and if some seats remain vacant due to non- availability of Candidates from Merit List of reserved candidates, these will be again unreserved and filled up by open category candidate under Rule4.3.
After operation of Rule 4.3 remaining vacant seats will be filled by candidate under Rule4.5.

4.16. Determination of inter-se-merit of candidates obtaining equal merit number in case of two or more candidates obtaining equal merit number, the inter-se-merit of such candidates shall be determined in order of preference as under.

Candidates scoring less negative marks.

Candidate's who secure higher percentage in final Year undergraduate examination after deduction of 1.5 for each unsuccessful trial in final year examination.

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Note: First trial is deemed to take place when he/ she is due to appear for the examination, irrespective of his/ her actual appearance, provided that non-appearance is not a result of reasons beyond his control.

According to age, older will get preference over younger.

Notification: Merit Lists will be notified asunder:
Merit list – 1.A.= Candidates under Rule 4.1 belonging to Open (Unreserved Seats)
Merit list – 1.B. = Candidates under Rule 4.1 belonging to SC.
Merit list – 1.C. = Candidates under Rule 4.1 belonging to ST.
Merit list – 1.D. = Candidates under Rule 4.1 belonging to SEBC.
Merit list – 2.A. = Candidates under Rule 4.3 belonging to Open (Unreserved Seats)
Merit list – 2.B. = Candidates under Rule 4.3 belonging to SC.
Merit list – 2.C. = Candidates under Rule 4.3 belonging to ST.
Merit list – 2.D. = Candidates under Rule 4.3 belonging to SEBC.
Merit list – 3.A. = Candidates under Rule 4.25 belonging to Open (Unreserved Seats)
These Merit Lists will be placed on the notice board of the University.

4.17. A candidate having objection to the merit list may submit it in writing to the admission committee within 72 hours of publication of merit list. The admission committee will duly consider the objection and decide the case, If candidate is not satisfied, he/ she may make a written appeal to the Provost, whose shall befinal.
The sequence of interview for selection and admission will be as per Regulations.

4.18. PG courses are full-time and the candidate shall not indulge in private practice or employment of any nature (Part-time or full-time, paid or stipendiary or unpaid) during the course. If the candidate is employed, he/ she shall have to produce proof that he/ she has left the service or taken leave for full period of course before he/ she is given admission order. No concession will be given regarding joining period of 7 days counted from the day of selection. If he/ she fails to produce the above proof within 7 days, his/ her admission shall stand cancelled. (If the candidate is serving as Resident or Tutor in the same speciality under the same teacher under whom he/ she is selected, he/ she may continue the post).

4.19. If violation of this condition is detected anytime after the admission, his admission shall be cancelled without giving any notice and he/ she will not be eligible to apply in future.

4.20. The selected and admitted candidate will have to join within stipulated time of 7 days. If he/ she fails to do so as if he leaves before completion of the course, he/ she will lose his admission (and registration) and will not be eligible to apply in future.
For granting of each term candidate shall have attended minimum 75% of the total number of the days in each term.

4.21. If any Post Graduate student is found absent for more than 30 days without permission of concerned authority, his/ her admission or registration in P.G. course will be cancelled without any notice, thereof fees and deposits will be forfeited and he/ she not be eligible to apply in future.

4.22. All these admissions will be decided by “Admission Committee” constituted as per Rule no. 1A on behalf of the Swarrnim Startup and Innovation University.
A candidate admitted to Post Graduate degree course for any of the subject, may subsequently be required to work maximum for 6 months in another allied subject/ unit/ hospital/ super speciality related to the discipline concerned. Provided he/ she has kept remaining period of postgraduate training under his/ her own PG Teacher in the original subject, (one month training is compulsory in emergency care/ casualtydepartment).

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4.23. The University reserves the right to introduce any new Rule or Regulations or to make changes in any of the existing Rules or Regulations at any time to deal with diverse problems arising out of infinite variety of situations.

4.24. After the PG interviews, remaining vacancies, if any, remains in any subjects in the concerned department/ Physiotherapy college then the same subject to be offered to the Tutor, Jr. lecturer, Demonstrator, Assistant Lecturer of the concern department/ Physiotherapy college those who have applied for the same on the basis of merit of their First, Second, Third and fourth year marks of Physiotherapy course.

4.25. Regulation for Sequence of Interviews for Selection & Admission
Before the candidate is offered choice of post, his original documents are compared with the attested copies, he/ she had submitted with his application form. If all the originals are not available with him or if there is discrepancy in any of the documents, he/ she become in eligible. His interview will not be held and next candidate will be called.
If all attested copies of his documents are found to be exact copies of originals, he/ she will be offered the Seat. If he/ she choose the seat, he/ she is asked to pay the fees and deposit. After the payment of fees his admission, order will be prepared. Inability to pay requisite fees and deposit will render him ineligible and the next candidate will be called.

However, if he/ she brings the fees and deposit when interviews are still going on, he/ she may be allotted new merit number next to the candidate being interviewed (or just concluded). E.g. 39A and offered Seat available at that time. All future procedures in respect of this candidate will be according to this new position in merit list.

A candidate who corrects the deficiency described in R. 1 (he/ she produces all originals and attested copies submitted by him with the application are found to be exact copies of the original) is dealt with similar to the candidate described in R.3.

A candidate who is absent when called, but reports late, is also dealt with similar to the candidate described in R. 3.

Unless the interview of one candidate is over, the next candidate is not called. Interview is considered over if,
He/ She has chosen the subject/ seat, paid fees, deposit, bond, bank surety etc. and his admission order is ready.
He/ She has declined to take any of the seats offered.
He/ She is ineligible under R. 1 or R. 2.

First candidates belonging to merit list 1.B. followed by 1.C. followed by 1.D. will be called for the interview, one by one according to merit and offered subjects belonging to their reserved categories.

If he/ she selects the subject:
He/ she is allotted that subject and is called again along with candidates of merit list 1.A. for Selection of Teacher according to General Merit, and His / her name is deleted from merit list 1.A., if it is included in 2 or more lists.
If he/ she does not accept any of the subjects offered to his name is retained in Merit List 1.A.
Conversion of Reserved Seats into open merit (unreserved) Seats: When the Merit Lists 1.B., 1.C., 1.D. are exhausted and seats reserved for SC, ST, SEBC still vacant all these seats are converted into Open Merit Seats.
Next, candidates belonging to Merit List 1.A. will be called for interview one by one, according to the Merit.
Open merit seats including those converted from reserved seats and supernumerary seats are offered to open merit candidates. If any reserved seat is not filled, corresponding supernumerary seat is not offered.
Simultaneously, candidates of Merit Lists 1.B., 1.C. and 1.D. who had selected their subjects as per R. 7 and R. 9 will be called as per their General Merit Level and they will choose their Teachers.

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(J) After Merit List 1.A. is exhausted, candidates belonging to Merit Lists 2.B., 2.C.., 2.D. are called after re-reservation as per provisions in Rule 5.5(b). They will be dealt with an exactly similar lines as Gujarat University candidates are dealt, with by R.7 & R.8. Next, candidates belonging to Merit List 2.A. are dealt with exactly similar lines to
R.9 and R. 10. (K) Admission orders are handed over to the candidates after selection of teachers, also copies of such orders are sent to Heads of Institution where they are admitted. These orders are withheld for those who are employed till proof is produced to the effect that he has left service or taken requisite leave and have actually handed over charge (Rule 7.8)Original mark sheets etc. of admitted candidates should be retained by authority.

R.M PHYSIO 5:- INTAKE OF STUDENTS

The intake of students to the course shall be in accordance with the ordinance in this behalf. The guide student ratio shall be 1:3. The intake of students to the course shall be once in a year. No postgraduate seat left unfilled in an academic year shall be carried forward to the next or subsequent academic years.

R.M PHYSIO 6:- DURATION OF THE COURSE

The duration of master of physiotherapy course shall be extended over a period of 2 continuous years on a full time basis. Any break in the course, power of extension of the course & the fixation of the term shall be vested with the university.

R.M PHYSIO 7:- MEDIUM OF INSTRUCTION

English will be the medium of instruction for the subjects of study, text books & for the examination of the MPT course.

R.M PHYSIO 8:- COURSE OF THE STUDIES

The course of study, subjects & teaching schedule for I& II year MPT course is shown separately in Table 1 & 2.

Academic Year (52 Weeks)						
Teaching (38Weeks)		Exam (8 Weeks)		Vacation (6 Weeks)		
1st Term (19 Weeks)	2nd Term (19 Weeks)	Preliminary (4 Weeks)	University (4 Weeks)	Diwali Vacation (2 Weeks)	Summer Vacation (2 Weeks)	Holidays (2 Weeks)

- 1 Week must include 36 teaching Hours.
- Theory and Practical 1hour = 1 Credit
- Clinical Education 2Hour= 1 Credit

MASTER OF PHYSIOTHERAPY (M.P.T.)
1ST YEAR

COURSE CODE	COURSE TITLE	TEACHING SCHEME			EXAMINATION SCHEME				
		CREDIT HRS.			THEORY		PRACTICAL		Total
		THEORY	PRACTICAL	TOTAL	INTERNAL	EXTERNAL	INTERNAL	EXTERNAL	
66021101	Basic Sciences Part-I i) Work & exercise Physiology ii) Electro physiology iii) Biomechanics &Kinesiology	5	-	8	30	70	-	-	100
	*History & Principles of physiotherapy education & Practice.	-	-	1					
66021102	Basic Science Part-II i) Research Methodology & Biostatistics ii) Education Technology iii) Ethics and Administration.	6	-	6	30	70	-	-	100
66021103	Advanced Physiotherapeutic (Clinical applied & allied therapeutics, Medical & Surgical)	6	-	9	30	70	-	-	100
66021104	Non – Elective Case + Micro-Teaching	-	6	3			60	140	200
	Clinical Training	-	-	9					
TOTAL		17	6	36	90	210	60	140	500

* Not for University Examination

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MASTER OF PHYSIOTHERAPY (M.P.T.)
2nd YEAR

COURSE CODE	COURSE TITLE	TEACHING SCHEME			EXAMINATION SCHEME				
		CREDIT HRS.			THEORY		PRACTICAL		Total
		THEORY	PRACTICAL	TOTAL	INTERNAL	EXTERNAL	INTERNAL	EXTERNAL	
66021201	Physical &Functional diagnosis-Part-I& II	3.5	3.5	7	30	70	-	-	**100**
66021202/ 66021202-C	**Elective:** Basics, Assessment and Evaluation	4	4	8	30	70	-	-	**100**
66021203/ 66021203-C	**Elective:** Clinical Conditions & Physiotherapeutic Interventions	4	4	8	30	70	-	-	**100**
66021204	Dissertation.	-	-	4	-	-	-	-	**Pass/ Fail**
66021205	Non-Elective Case + Elective Case (Separate for Each elective), Viva Voce	-	-	1	-	-	60	140	**200**
	Clinical Training	-	-	8	-	-	-	-	
TOTAL		**11.5**	**11.5**	**36**	**90**	**210**	**60**	**140**	**500**

Table 1: First year MPT (First 12 months)

Sr No.	SUBJECTS	Teaching Hours Theory	Clinical/ Practical's	Total	Credit Hours
1	Basic Sciences Part-I i) Work & exercise Physiology ii) Electro physiology iii)Biomechanics & Kinesiology	190	----------	190	**4**
	iv)*History & Principles of Physiotherapy education & Practice.	38	----------	38	**1**
2	Basic Science Part-II i)Research Methodology & Biostatistics ii) Education Technology iii) Ethics and administration.	228	----------	228	**3**
3	Advanced Physiotherapeutic (Clinical applied & allied therapeutic, Medical & Surgical)	228	----------	228	**5**
4	Non – Elective Case + Micro-Teaching	----------	342	342	**14**
5	Clinical Training	----------	684	684	**9**
	Total	----------	----------	1710	**36**

Table 2: Second year MPT (13-24 months)

Sr. No.	Subjects	Teaching Hours			Credit Hours
		Theory	Clinical/ Practicals	Total	
1	Physical &Functional diagnosis-Part-I& II	133	----------	133	4
2	**Elective:** Basics, Assessment and Evaluation	152	----------	152	4
3	**Elective:** Clinical Conditions & Physiotherapeutic Interventions	152	----------	152	4
4	Dissertation			152	4
5	Non-Elective Case + Elective Case (Separate for Each elective), Viva Voce	----------	513	513	36
6	Clinical Training	----------	608	608	8
	Total	437	969	1691	36

R.M.PHYSIO 9:- METHOD OF TRAINING

The training of post graduate for MPT Degree shall be on a full time pattern with graded responsibilities in the management & treatment of patients entrusted to his/her care. Training should include involvement in laboratory, experimental work & research studies. The participation of students in all facets of educational process is essential. Every candidate should take part in seminars, group discussion, clinical rounds, case demonstration, clinics, journal review meetings & other continue education activities. Every candidate should be required to participate in the teaching & training program of under graduate students.

R.M PHYSIO 10:- MONITORING PROGRESS OF STUDIES (INTERNAL MONITORING)
It is essential to monitor the learning progress of each candidate through continuous appraisal & regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring is done by the staff of the department based on the participation of the students in various teaching/learning activities. It may be structured & assessment be done by using checklists that assess various aspects. Model checklists are given in table III toIX.

Work Diary:-
Every candidate shall maintain a work diary & record his/her participation in the training programs conducted by the department such as journal reviews, seminars etc.
Special mention may be made of the presentation by the candidate as well as details of the clinical or laboratory procedures, if any, conducted by the candidate. The work diary shall be scrutinized & certified by the head of the department & head of the institution & presented in the university examination.

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Periodic Tests:-

The college may conduct 2 tests, one of them be an annual test at the end of the first year & the end of second year three months before the final year examination. The tests may include written theory papers, practical, viva voice & clinical in the pattern of university examination. Records & marks obtained in such tests will be maintained by the head of the department & sent to the university, when called for by the principal.

R.M PHYSIO 11:- ATTENDANCE

A candidate is required to attend a minimum of 80% of training &of the total classes conducted during each academic year of the MPT course. Provided further, leave of any kind shall not counted as part of academic term without prejudice to minimum 80% of training period every year. Any student who fails to complete the course in this manner shall not be permitted to appear for the university examinations.

R.M PHYSIO 12:-

A. TEACHING & LEARNING EXPERIENCE

(a)	Journal review meetings	Minimum six in 2 years
(b)	Seminars	Minimum four in 2 years
(c)	Clinical presentation	Minimum 25 cases in 2 years
(d)	Special clinics	Minimum 20 in 2 years
(e)	Inter departmental meetings	Minimum five in 2 years
(f)	Community work, Camps/Field visits	Minimum four in 2 years
(g)	Clinical rounds	Minimum 250 in 2 years
(h)	Dissertation works	Minimum 200 hours in 2 Years
(i)	Participation in conferences/presentation of papers	Minimum two in 2 years
(j)	Teaching activities-U.G Teaching	10 hours / month
(k)	Learning activities: Self learning, Use of computers & library	----------
(l)	Participation in departmental activities	----------
(m)	Any other-Specify(eg: CME)	----------

Rotation & posting in other departments if any-minimum 2 months in one speciality.

B. GRADED RESPONSIBILITY IN CARE OF PATIENTS AND OPERATIVEWORK.
(Structured training schedule for clinical & elective subjects only)

Category	Ist Year MPT	II year MPT
O	20 cases	20 cases
A	20 cases	30 cases
PA	100 cases	60 cases
PI	20 cases	50 cases

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Key: O-Observer
A-Assisted a senior physiotherapist
PA-Performed procedure under the direct supervision of a senior Physiotherapist.
PI-Performed independently.

R.M PHYSIO 13:- DISSERTATION

Every candidate pursuing MPT degree course is required to carry out work on a selected research project under the guidance of a recognized post graduate teacher. The results of such a work shall be submitted in the form of dissertation.
The dissertation is aimed to train a graduate student in research methods & techniques. It includes identification of a problem, formulation of a hypothesis, search & review of literature getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, and comparison of results & drawing conclusions.
Every candidate shall submit to the registrar (academic) of the university in the prescribed, a synopsis containing particulars of proposed dissertation work within 6 months from the date of commencement of course on or before the dates notified by the university. The synopsis shall be sent through the proper channel.
Such synopsis will be reviewed & the university will register the dissertation topic. No change in the dissertation topic or guide shall be made without prior approval of the university.

The dissertation should be written under the following heading
1. Introduction.
2. Aims or objectives of study.
3. Review of literature.
4. Material &methods.
5. Results.
6. Discussion.
7. Conclusion.
8. Summary.
9. References.
10. Tables.
11. Annexure.

The written text of dissertation shall not be less than 50 pages & shall not exceed 100 pages excluding references, tables, questionnaires & other annexure. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27”x 11.69”) and bound properly. Spiral binding should be avoided. The guide, Head of Department & Head of the institution shall certify the dissertation.
Four copies of dissertation thus prepared shall be submitted to the registrar (evaluation), 3 months before final examination on or before the dates notified by the university.
The examiners appointed by the university shall value the dissertation Approval of dissertation work is an essential precondition for a candidate to appear in the university examination. Two evaluators (examiners) apart from the guide shall value the dissertation. One of the evaluator is external from outside Swarrnim Startup and Innovation University. The other one shall be internal from another college affiliated to Swarrnim Startup and Innovation University. Acceptance from any one evaluator other than the guide will

be sufficient for the candidate to be eligible to take up the examination.

R.M. PHYSIO.14:- GUIDE

The academic qualification and teaching experience required for recognition by this university is as per the criteria for recognition of MPT teachers for guides as per GSCPT.

Criteria for recognition of MPT teacher/ Guide:

1. M.Sc. (PT) / MPT with five years teaching experience after completion of MPT degree working on a full time position at an institution recognized by Swarrnim Startup and Innovation University and GSCPT. Notwithstanding above, in view of acute shortage of teachers, the teachers having three years teaching experience after MPT and working on a full time basis be considered as PG teachers for a period of five years (i.e. up to2022)

R.M. PHYSIO 15: - CHANGE OF GUIDE

In the event of a recognized guide leaving the college for any reason or in the event of death of guide, guide may be changed with prior permission from the university.

R.M. PHYSIO 16: - SCHEDULE OF EXAMINATION

a) The examination for MPT course shall be held at the end of each academic year (2 academic terms)
b) There shall be two university examination sessions in an academic year
i.e. in the month of October and April approximately.

R.M. PHYSIO 17: - SCHEME OF EXAMINATION

The degree of Master of Physiotherapy will be taken by papers, practical and viva-voice only.

Written Examination (Theory)

A written examination consisting of 5 question papers, each of three hours duration and each paper carrying 100 marks. Examination for paper I and paper II will be conducted at the end of first academic year. Paper III,IV and V examination will be conducted at the end of the second academic year. Recent advances in physiotherapy may be asked in any or all the 5 papers.

The paper IV and V will be for Elective subject in the branch chosen by candidates.

The Theory examination shall be held sufficiently earlier than clinical/practical examination.

Clinical Examination – 400 marks

It should be aimed at examining clinical skills and competency of the candidates undertaking independent work as a specialist.

Viva – Voice – 100 marks

Viva – Voice examination shall aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills. Candidates will present dissertation work during viva- voice. However, no marks shall be assigned. The marks of Viva – Voice examination shall be included in the clinical examination to calculate the percentage and declaration of results.

R.M. PHYSIO 18: - EXAMINERS

All examiners shall be recognized postgraduate teachers with three years PG teaching experience.

50% of total examiners shall be externals.

An external examiner must be a faculty of physiotherapy, preferably be from out of university and

ordinarily may be appointed for not more than 3 years consecutively.
The same set of examiner shall ordinarily be responsible for the written, practical or part of examination.

R.M. PHYSIO 19: - CRITERIA FOR DECLARING AS PASS IN UNIVERSITY EXAMINATION

(a) To pass any M. Physiotherapy Examination, a student must obtain 50% marks in the theory aggregate and 50% marks in the practical aggregate in concerned examination.

(b) Award of classes:

First class with distinction - 75% and above in aggregate provided the Candidates pass the examination in first Attempt.

First class - 60% and above in aggregate provided the candidate pass in First attempt.

Pass class:- 50% of marks in theory aggregate and 50% of maximum Marks in clinical and Viva-voice aggregate.

R.M.PHYSIO 20: - DEFINITION OF TRIAL

First trial is deemed to take place when the candidate is due to appear for the examination irrespective of his/ her actual appearance, provided that non- appearance is not a result of reasons beyond his/ her control. Similarly 2nd, 3rd, etc, trials relating to subsequent examination.

R.M. PHYSIO 21: - TYPE OF QUESTIONS IN WRITTEN PAPER Theory – 70 Marks each paper

1. Long Essay (2 questions) – 2 x 15 = 30 Marks.
2. Short Essay (2 questions) –2x 10 = 20 Marks.
3. Short Answer (4 questions)- 4x5= 20 Marks

R.M PHYSIO 22:- COURSE CONTENTS I YEAR MPT

MPT 1st year

Paper I – Basic Sciences Part- I

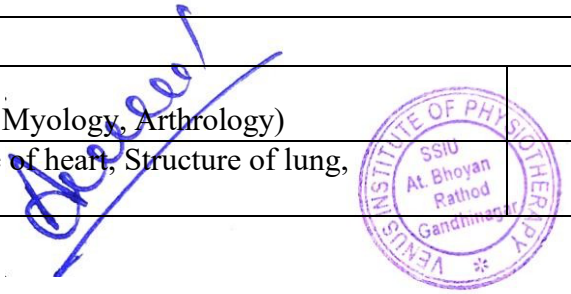
Teaching Scheme			Evaluation Scheme				
Theory	Practical	Total	Internal		External		Total
			Th	Pr	Th	Pr	
5	3	8	30	30	70	70	**200**

i) WORK & EXERCISE PHYSIOLOGY		
1	Sources of Energy, Energy Transfer and Energy Expenditure at rest and various physical activities.	**5**
2	Nutrition, Body consumption, caloric balance, food for the athlete, regulation of food intake, ideal body weight, optional supply of Nutrients.	**5**
3	Metabolic consideration — VO2, Lactate threshold, RQ, energy expenditure in terms of calorimetry.	**5**
4	Acute effects of exercise on — Cardiovascular, Respiratory, Metabolic (aerobic & anaerobic), Thermo-regulatory, Buffer (pH), Neuro-musculoskeletal,	**5**

	Endocrine, Immune systems.	
5	Conditioning effects (adaptations) of exercise on — Cardiovascular, Respiratory, Metabolic (Aerobic & anaerobic), Thermo regulatory, Buffer (pH), Neuro- Musculoskeletal (strength, power, endurance, speed, flexibility, agility, skill), Endocrine, Immune systems.	**5**
6	Body composition	**4**
7	Exercise at different altitudes.	**4**
8	Exercise at various climatic conditions.	**3**
9	Special aids to performance and conditioning.	**4**
10	Exercise prescription for health and fitness with special emphasis to cardiovascular disease, Obesity and Diabetes.	**4**
11	Principles of health promotion for Growing Children, Healthy Adults, Pregnant / Lactating females, Elderly, Sports person	**5**
12	Aerobic and Anaerobic Exercise Training	**4**
13	Fatigue assessment, Types, and Relevance with Exercise Tolerance tests & Training and management	**5**
14	Fitness Testing for: a. Aerobic power b. anaerobic power and capacity c. Muscular strength and power, flexibility.	**5**
15	Obesity –exercises for weight reduction	**5**
16	Exercise and aging	**4**
17	Clinical exercise physiology	**4**

ii) ELECTRO PHYSIOLOGY		
1	Characteristics and components of Electro therapeutic stimulation systems and characteristic and components of Electro physiological assessment devices.	**4**
2	Electrical excitability of muscle and nerve and composition of peripheral nerves.	**4**
3	A. muscle plasticity in response to electrical stimulation. B. Instrumentation for Neuromuscular electrical stimulation (NMES)	**4**
4	Neurobiology of afferent pain transmission and central nervous system mechanisms of pain modulation.	**4**
5	Electrical stimulation and circulation.	**3**
6	Clinical Electro physiological testing.	**3**
7	Bio-electricity(R.M.P-Action Potential)	**3**
8	Neuro-transmitters. Synapse & Synaptic transmission.	**3**
9	Classification-muscle fiber, nerve fiber, motor unit.	**3**
10	Propagation of nerve impulse & physiology of muscle contraction.	**3**
11	Reflex-classification & properties.	**4**
12	Sensations-Pathways & classification.	**4**
13	Type of nerve injury &wallerian degeneration.	**4**

iii) BIOMECHANICS & KINESIOLOGY		
1	**Applied Anatomy** Anatomy of musculoskeletal system (Osteology, Myology, Arthrology)	**3**
2	Anatomy of Cardio Pulmonary system (Structure of heart, Structure of lung, broncho pulmonary segments)	**4**



3	Anatomy of nervous system (Dermatomes and myotomes, cerebrum and cerebral hemispheres, cerebral cortex, cerebellum and its connections, brain stem midbrain, Pons, medulla)	**4**
4	Structure of kidney and bladder	**3**
5	Anatomy of Reproductive system	**3**

Kinesiology		
1	**Kinematics:** a. Types of motion (accessory and joint play of axial and peripheral skeletal) b. Location of motion (instantaneous axis of movement, shifting axis of movement) c. Magnitude of motion (factors determining it) d. Direction of motion e. Angular motion and its various parameters f. Linear motion and its various parameters g. Projectile motions	**5**
2	**Kinetics:** a. Definition of forces b. Force vectors (composition, resolution, magnitude) c. Naming of Force (gravity and anti-gravity force, JRF) d. Force of gravity and COG e. Stability f. Reaction forces g. Equilibrium & Balance h. Linear forces system i. Friction and its various parameters j. Parallel force systems k. Concurrent force systems l. Work power and energy m. Moment arms of force & its application n. Force components o. Equilibrium of force	**5**
3	Mechanical energy, work and power h. Definition i. Positive and Negative work of muscles j. Muscle mechanical power k. Causes of inefficient movement l. Co-contractions m. Isometric contraction against gravity jerky movement n. Energy generation at one joint and absorption at another o. Energy flow and Energy system used by the body p. Energy storage	**5**

	Biomechanics for different aspects	
1	Biomechanics of: Bone and soft tissues, including muscles, ligaments, tendon and nerves.	**4**
2	Biomechanics of Joints: Classification, structure and function including kinematics and kinetics of joints.	**4**

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3	Spine: Structure and function including kinematics and kinetics of Various Vertebral joints.	**4**
4	Changes in physical and mechanical properties because of aging, exercise, Immobilization and position	**4**
5	Mechanoreceptors: its types, distribution with respect to joint, structure and function and Clinical applications	**4**
6	(a) Gait: a. Normal Gait and its determinants b. Gait parameter including temporal and spatial c. Kinematic and Kinetic of normal human gait d. Pathological gait e. Running f. Stair climbing (b) Gait Analysis. a. Overview of normal gait analysis : kinetic and kinematic analysis; Description of some of the most commonly used types of observational gait analysis; Advantages and disadvantages of kinematic qualitative and kinematic quantitative gait analyses. b. Gait Training, Pre ambulation programme, assistive devices and gait patterns, Recent advances in analysis of Gait	**8**
7	Posture Control, Optimal Posture and their deviations in different planes.	**5**
8	Ergonomics and its application in working environments	**5**
	Total	**190**

HISTORY AND PRINCIPLES OF PHYSIOTHERAPY EDUCATION		
1	History of Physiotherapy	**2**
2	Aims of physiotherapy education	**3**
3	Concepts of teaching and learning; Theories of teaching.	**3**
4	Principles and methods of teaching; a) Strategies of teaching b) Planning of teaching c) Organization d) Writing lesson plans e) Audio visual aids f) Teaching methods	**10**
5	Guidance and counseling; principles and concepts, guidance and counseling services of students and faculty	**10**
6	Practical a) Design a curriculum for a basic physiotherapy programme b) Prepare a lesson plan and conduct classes c) Construct a written objective type test for the lessons you have taken d) Prepare a plan for evaluating students e) Internal assessment tests in all topics f) Lectures and seminars.	**10**
	Total Hours	**38**

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Practical's of Basic Science Part-I		
1	Evaluation of Body composition	10
2	Fitness Testing for: d. Aerobic power e. anaerobic power and capacity f. Muscular strength and power, flexibility.	20
3	Practical Demonstration of Neuromuscular electrical stimulation (NMES)	10
4	Practical Demonstration of Electrical stimulation	10
5	Practical Demonstration of Clinical Electro physiological testing. • EMG • NCV • Repetitive Nerve Stimulation • Evoke Potential 1. Brain Stem Auditory Evoked Potential 2. Sensory Evoked Potential 3. Visual Evoked Potential • FES	30
6	Practical Demonstration of Gait Analysis. c. Normal gait analysis: kinetic and kinematic analysis; Demonstration of some of the most commonly used types of observational gait analysis. d. Gait Training, Pre ambulation programme, assistive devices and gait patterns, Recent advances in analysis of Gait	20
7	Practical Demonstration of Ergonomics and its application in working environments	14
	Total	114

Paper II – Basic Sciences Part II

Teaching Scheme			Evaluation Scheme				
Theory	Practical	Total	Internal		External		Total
			Th	Pr	Th	Pr	
6	-	6	30	-	70	-	**100**

i) RESEARCH METHODOLOGY & BIOSTATISTICS		
1	Research in Physiotherapy a. Introduction b. Research for Physiotherapist: Why? How? And When? c. Research – Definition, concept, purpose, approaches i. Internet sites for Physiotherapist	**5**
2	Research Fundamentals a) Types of variable b) Reliability & Validity c) Drawing Tables, graphs, master chart etc	**5**

3	Writing a Research Proposal a) Defining a problem b) Hypothesis: function of hypothesis in quantitative research c) Types of hypothesis, characteristics of testable hypothesis, wording of the hypothesis d) Review of Literature e) Formulating a question, Operational Definition f) Inclusion & Exclusion criteria g) Forming groups h) Data collection & analysis i) Results, Interpretation, conclusion, discussion j) Informed Consent k) Limitations	**8**
4	Research Design a. Qualitative and Quantitative research designs - Difference between qualitative and quantitative designs b. Experimental design Quasi experimental research; advantages and disadvantages of quasi experiments Non experimental design - Controlled trials -Parallel or concurrent controls - Randomized - Non randomized Sequential controls - Self controlled - Crossover - External controls - Studies with no controls c. Observational Study design - Descriptive or case series - Case control studies (retrospective) - Cross sectional studies, surveys - Cohort studies (prospective) -Historical Cohort studies d. Meta analyses	**8**
5	Population and sample 1. Definition of population and sample 2. Types of sampling 3. Sample size determination and calculation 4. Sample rationale 5. Non-probability sampling ; convenience sampling , quota sampling, purposive sampling, advantages and disadvantages of non probability sampling 6. Probability sampling; Simple random sampling, stratified random sampling, 7. Cluster sampling, systematic sampling, advantages and disadvantages of probability sampling	**8**
6	Data collection methods	**6**

	a. Scales and techniques of psychological measures b. Research reliability, validity and criteria for assessing, measuring the tools c. Presentation of data d. Analysis and interpretation of research data e. Role of computers f. Pilot study	
7	Interpretation of statistical results 1. Interpreting significant and non significant results 2. Discussion and conclusion of obtained results 3. Guidelines to interpret and critique research results	**6**
8	Writing research for publication 1. Guidelines to publish a research paper and its contents	**4**
9	Presenting a research report 1. Writing the report 2. Documentation 3. Details of the study 4. Arrangement of report 5. Practice - Presentation of study for discussion 6. Method of teaching - lecture and discussion- Seminars and practices	**8**
10	Research Ethics 1. Importance of Ethics in Research, Ethical issues in human subjects research, Ethical principles that govern research with human subjects 2. Components of an ethically valid informed consent for research	**3**
11	Plagiarism	**3**

BIOSTATISTICS		
1	Biostatistics a. Introduction b. Definition c. Types d. Application in Physiotherapy	**2**
2	Data a. Definition b. Types c. Presentation d. Collection methods e. Various types of graphs, obtaining graphs using statistical software like excel	**5**
3	Measures of central value a. Arithmetic mean, median, mode, Relationship between them b. Partitioned values- Quartiles, Deciles, Percentiles c. Graphical determination	**5**
4	Measures of Dispersion a. Range	**5**

	b. Mean Deviation c. Standard Deviation	
5	Normal Distribution Curve a. Properties of normal distribution b. Standard normal distribution c. Transformation of normal random variables. d. Inverse transformation e. Normal approximation of Binomial distribution.	**5**
6	Correlation analysis a. Bivariate distribution b. Scatter Diagram c. Coefficient of correlation d. Calculation & interpretation of correlation coefficient e. T-test, Z-test, P-value	**5**
7	Regression analysis a. Lines of regression b. Calculation of Regression coefficient	**5**
	2. Sampling a. Methods of Sampling b. Sampling distribution c. Standard error d. Types I & II error	3
	Probability (in Brief) a. Probability and sampling b. Probability as a mathematical system c. Population and samples d. Sampling distribution e. Sampling methods f. Point and interval estimation for proportion mean g. Hypothesis testing, simple test of significance h. Inferential technique: normal	**5**
	Hypothesis Testing a) Null Hypothesis b) Alternative hypothesis c) Acceptance & rejection of null Hypothesis d) Level of significance	**5**
	Parametric & Non parametric tests a. Chi square test b. Mann-Whitney U test c. Wilcoxon Signed test d. Kruskal-Wallis test e. Friedman test f. T-test/student T test g. Analysis of variance g. Standard errors of differences	**5**
	Learn SPSS software application and Graph Software application. [Not for Exam].	**4**

	i) EDUCATION TECHNOLOGY	
1.	Education:	**5**

	a. Educational aims, b. Agencies of education, c. Formal and informal education, d. Major philosophies of education (naturalism, idealism, pragmatism, realism) including Gandhi and Tagore. Modern and contemporary philosophies of education (Existentialism, Progressivism, Reconstructionism, Perennialism). e. Philosophies of education in India – past, present and future. Role of educational philosophy, Current issues and trends in education.	
2.	Concepts of teaching and learning: a. Theories of teaching, b. Relationship between Teaching and Learning, c. Psychology of Education, d. Dynamics of behavior, e. Motivational process of learning, f. Perception, g. Individual differences, h. Intelligence personality.	**5**
3.	Curriculum: a. Curriculum committee, b. Developments of a curriculum for P.T., c. Types of curriculum, d. Formation of philosophy, e. Courses objectives. f. Course placements, g. Time allotment. h. Selection and organization of learning experience master plans of courses. i. Master rotational plan – individual rotational plan, j. Correlation of theory and practice, k. Hospital and community areas for clinical instruction, l. Clinical assignments, m. Current trends and curriculum planning.	**6**
4.	Principles and methods of teaching: a. Strategies of teaching, b. Planning of teaching, c. Organization, writing lesson plan, d. Audio visual aids, e. Teaching methods – Socialized teaching methods.	**5**
5.	Measurement and evaluation: a. Nature of measurement of education, meaning, process, personal, Standardized, b. Non-standardized tests. c. Steps of constructing a test, d. Measurement of cognitive domain, e. Assessment techniques of affective and psychomotor domains, f. Administering scanning and reporting. g. Standardized tools, h. Important tests of intelligence, i. Attitude, instrument, personality, j. Achievement and status scale.	**6**

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	k. Programme evaluation Cumulative evaluation.	
6.	Guidance and counseling : a. Philosophy, b. Principles and concepts, c. Guidance and counseling, d. Services of student and faculty. e. Faculty development and development of personnel for P.T. services	**5**

ii) ETHICS AND ADMINISTRATION		
1.	Concept of Morality, Ethics and Legality.	**4**
2.	Rules of Professional conduct, Medico Legal and Moral Implications.	**4**
3.	Communication skills, Client interest and Satisfaction.	**4**
4.	Inter Disciplinary Relation, Co-partnership, Mutual Respect, Confidence and Communication, Responsibilities of the Physiotherapists, Status of Physiotherapist in Health Care.	**4**
5.	Role of Professional in Socio Personal and Socio Economical context.	**4**
6.	Need of Council Act for regulation of Professional Practice.	**4**
7.	Self- Regulatory role of Professional Association.	**4**
8.	Rules of Professional Conduct.	**4**
9.	Role of WCPT, Various branches and special interest group of WCPT	**4**
10.	Indian association of physiotherapists: rules, regulations, framework, aims, and objectives. Physiotherapy and law. Medico legal aspects of physiotherapy, liability, negligence, malpractice, licensure, workman's compensation.	**4**
11.	Administration & Marketing – personnel Policies –Communication & Contract. Administration principles based on Goal & Function at large Hospital / Domiciliary set up / Private Clinic / Academic Institution.	**5**
12.	Methods of maintaining records – Budget planning	**3**
13.	Performance analysis – Physical structure, reporting system, Man P Status, Functions, Quality & Quantity of Services, Turnover – Cost benefit, Contribution.	**3**
14.	Hospital as an organization - Functions and types of hospitals	**3**
15.	Roles of Physical therapist, Physical therapy Director, Physiotherapy Supervisor, Physiotherapy assistant, Physiotherapy aide.	**4**
16.	Confidentially of the Patient's status	**4**
17.	Legal responsibility	**3**
18.	Consumer protection law, health law, MCI.	**4**
19.	Standards of practice for physiotherapists	**3**
20.	Liability and obligations in the case of medical legal action	**3**
21.	Law of disability & discrimination.	**3**
	Total Hours	**228**

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Paper-III ADVANCE PHYSIOTHERAPEUTIC (Clinical Applied & Allied Therapeutic, Medical and Surgical)

Teaching Scheme			Evaluation Scheme				
Theory	Practical	Total	Internal		External		Total
			Th	Pr	Th	Pr	
6	3	9	30	30	70	70	**200**

	Part I	
1.	Pain: Neurobiology, Various theories, Modulation and Physiotherapy Management including electromagnetic radiations, ultrasound, Electro acupuncture etc.	**8**
2.	Maternal and child care in general physiotherapy.	**5**
3.	Applied neuro- anatomy and neuro-physiotherapy.	**6**
4.	Inhibition and facilitation techniques.	**5**
5.	Theories of motor learning.	**5**
6.	Therapeutic bio feedback & psychosomatic training.	**5**
7.	Combination therapy, shock wave therapy, long wave therapy.	**6**
8.	Functional training – Respiratory exercises, Training for feeding, bladder and bowel training, coughing and compression	**8**
9.	Artificial respiration, inhalation therapy & intensive care unit procedures.	**5**
10.	Yogasanas& Pranayama a. Physiological & therapeutic principles of yoga b. Yogasanas for physical culture, relaxation and meditation. c. Application of Yogasanas in physical fitness, flexibility, cardiac rehabilitation and neuromotor learning. d. Pranayama and respiratory physiology. e. Kriyas and their physiological significance. Therapeutic application of yoga. f. Yoga – a holistic approach.	**10**
11.	Acupuncture: definition, principles, techniques, physiological effects, indications, contra-indications, dangers & integration of acupuncture with physiotherapy.	**6**
12.	Magneto therapy	**5**
13.	Naturopathy	**5**
14.	Dry Needling in various conditions	**5**
15.	History of manual therapy, overview of manual therapy approaches for all the joints	**5**
16.	Clinical Reasoning and differential clinical diagnosis and practical application of different approaches such as – Maitland, Kaltenborne, Cyriax, Mulligan and Mackenzie.	**6**
17.	Soft tissue approaches: MyoFascial Release techniques, Neural tissue mobilization, Muscle Energy Techniques (MET), Position Release Therapy (PRT), Kinetic chain approach along with practical application.	**8**
18.	Massage, mobilization and manipulations	**5**
19.	Ergonomics	**2**

20.	Recent advances and Evidence based Practice in all physiotherapeutic conditions	**5**

	Part II:- Medical	
1.	Physiotherapy in common conditions of skin	**8**
2.	Physiotherapy in common vascular diseases.	**5**
3.	Physiotherapy in nutritional deficiency diseases.	**5**
4.	Physiotherapy in respiratory disorders.	**5**
5.	Physiotherapy Management of ischemic heart diseases.	**6**
6.	Exercise planning and prescriptions.	**5**
7.	Physiotherapy in psychiatry.	**5**
8.	Management of pain in neurological and Musculo-skeletal disorders.	**6**
9.	Physiotherapy management in arthritis and allied conditions.	**6**
	Part III:- Surgical)	
1.	Monitoring systems, defibrillator and Artificial respirators.	**6**
2.	Physiotherapy in post operative management of metabolic, hormonal, neoplastic and infective conditions of bones and joints.	**6**
3.	Pre and post operative physiotherapy in tendon transfer.	**6**
4.	Physiotherapy management following head injuries, in intensive care and neurosurgical procedures.	**7**
5.	Physiotherapy following general surgery.	**6**
6.	Physiotherapy following uro-surgery.	**6**
7.	Physiotherapy following plastic surgery.	**7**
8.	Physiotherapy management following selective and common cases of oncologic surgeries	**10**
9.	Physiotherapy following obstetric and gynecological disorders.	**6**
	Total Hours	**228**

Practical's of Advance Physiotherapeutic		
1	Practical Demonstration of Ante Natal Exercises	4
2	Practical Demonstration of Post Natal Exercises	4
3	Practical Demonstration of Inhibition and facilitation techniques.	4
4	Practical Demonstration of Therapeutic bio feedback	4
5	Practical Demonstration of Combination therapy, shock wave therapy, long wave therapy.	4
6	Practical Demonstration of Functional training – Respiratory exercises, Training for feeding, bladder and bowel training, coughing and compression	4
7	Practical Demonstration of Artificial respiration, inhalation therapy & intensive care unit procedures.	4
8	Practical Demonstration of Various Asan of Yoga and Pranayama	4
9	Practical Demonstration of Acupuncture	4
10	Practical Demonstration of Dry Needling in various conditions	4
11	Practical Demonstration of Massage and its various techniques	4
12	Clinical Reasoning and differential clinical diagnosis and practical application of different approaches such as – Maitland, Kaltenborne, Cyriax, Mulligan and Mackenzie.	4
13	Practical Demonstration of Soft tissue approaches: MyoFascial Release techniques, Neural tissue mobilization, Muscle Energy Techniques (MET), Position Release Therapy (PRT), Kinetic chain approach along with practical application.	4

14	Clinical Reasoning and differential clinical diagnosis and practical application of different approaches such as – Maitland, Kaltenborne, Cyriax, Mulligan and Mackenzie.	4
15	Practical Demonstration of Physiotherapy in common conditions of skin	4
16	Practical Demonstration of Physiotherapy in common vascular diseases.	4
17	Practical Demonstration of Physiotherapy in nutritional deficiency diseases.	4
18	Practical Demonstration of Physiotherapy in respiratory disorders.	4
19	Practical Demonstration of Physiotherapy Management of ischemic heart diseases.	4
20	Practical Demonstration of Exercise planning and prescriptions.	4
21	Practical Demonstration of Physiotherapy in psychiatry.	3
22	Management of pain in neurological and Musculo-skeletal disorders.	3
23	Practical Demonstration of Physiotherapy management in arthritis and allied conditions.	3
24	Practical Demonstration of Physiotherapy in post operative management of metabolic, hormonal, neoplastic and infective conditions of bones and joints.	3
25	Practical Demonstration of Pre and post operative physiotherapy in tendon transfer.	3
26	Practical Demonstration of Physiotherapy management following head injuries, in intensive care and neurosurgical procedures.	3
27	Practical Demonstration of Physiotherapy following general surgery.	3
28	Practical Demonstration of Physiotherapy following uro-surgery.	3
29	Practical Demonstration of Physiotherapy following plastic surgery.	3
30	Practical Demonstration of Physiotherapy management following selective and common cases of oncologic surgeries	3
31	Practical Demonstration of Physiotherapy following obstetric and gynecological disorders.	3
	Total	114

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2nd year MPT

Teaching Scheme			Evaluation Scheme				
Theory	Practical	Total	Internal		External		Total
			Th	Pr	Th	Pr	
3.5	3.5	7	30	30	70	70	**200**

Paper V – Physical and Functional Diagnosis Part 1 & Part 2

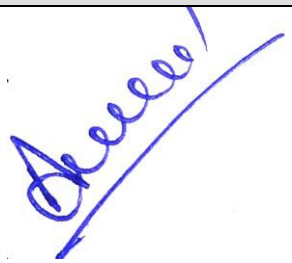
	Part I	
1.	Clinical Decision Making - Planning Effective Treatment. Clinical decision making models, Team approach, Foundation for clinical decision making.	**10**
2.	Vital Signs. Identification of reasons for monitoring vital signs; importance of monitoring vital signs; common techniques of monitoring vital signs; identification and analysis of normal values with that of abnormal values.	**10**
3.	Principles and application of investigative and imaging techniques in Physiotherapy a. Blood test b. Arterial Blood Gas (ABG) analysis c. Pulmonary Function Test (PFT) d. Radiological examination e. Computerized Tomography (CT) f. Magnetic Resonance Imaging (MRI) g. Ultrasonography (US) h. Electrocardiography (ECG) i. Dope testing	**15**
4.	Evaluation assessment and treatment planning strategies for musculoskeletal, neurological, cardiopulmonary, sports specific and other physiotherapy conditions: Principles of evaluation, clinical manifestations, general and specific clinical examination. A. Physiotherapy assessment of the following: a. Range of motion (ROM) b. Tone c. Muscular strength and endurance d. Flexibility e. Coordination i. Non equilibrium test ii. Equilibrium test f. Sports specific skills g. Cardiac efficiency h. Sensory evaluation i. Functional Evaluation i. Various scoring methods in functional assessment ii. Validity and reliability j. Fitness evaluation	**15**

	i. Aerobic ii. Anaerobic k. Spasm l. Trigger Point m. Tender Point n. Spasm B. Assessment of cognitive, perceptual dysfunctions and vestibular dysfunction.	
5.	Electro-Diagnosis: 1. Characteristics and components of Electro therapeutic stimulation systems and Electro physiological assessment devices. 2. Instrumentation for neuromuscular electrical stimulation 3. Electrical properties of muscle and nerve. 4. Neurobiology of afferent pain transmission and central nervous system mechanisms of pain modulation. 5. Electrical stimulation and circulation. 6. Clinical Electro physiological testing: Instruments, Techniques and Interpretations of a. Nerve conduction velocity including Repetitive Nerve Stimulation (RNS) b. Electromyography c. Bio-feedback technique. d. Late responses 7. Concepts of electro physiological studies in neuro muscular diseases as a diagnostic and therapeutic tool 8. Evoked potentials – VEP, SSEP, MEP, BAE	**15**
	Part II	
1	Psychological aspects of rehabilitation in disability: Psychological tests.	**8**
2	Developmental Screening (a) Factors Motor control assessment (b) Motor control theories/mechanism (c) Patterns of normal development (d) specific procedures and tests used to assess motor control defects	**10**
3	Anthropometry a. Body measurements - Height - Weight - Circumference b. Body Proportion - Body Mass Index (BMI) - Waist Hip Ratio (WHR) c. Body Composition - Somatotyping - Methods of measurement • Water displacement • Skin fold measurement • Under water weighing • Bioelectric Impedance Analysis (BIA)	**15**
4	Differential diagnosis in Physiotherapy	**10**
5	Functional evaluation.	**15**

	a. The concepts of health status impairment; functional limitations; disability and handicap; definition of functional activity and the purposes and components of the functional assessment; selection of activity and roles for an individual based on his or her capabilities and functional limitations. b. Various forms of functional tests; physical function test and multi-dimensional functional assessment instrument, identification of instrument for testing function. c. Various scoring methods used in functional assessment; d. Reliability and validity of various functional assessments.	
6	Evaluation of aging	**10**
	Total Hours	**133**

Practical's of PFD Part-I and Part-II		
1	Principles and application of investigative and imaging techniques in Physiotherapy d. Blood test e. Arterial Blood Gas (ABG) analysis f. Pulmonary Function Test (PFT) j. Radiological examination k. Computerized Tomography (CT) l. Magnetic Resonance Imaging (MRI) m. Ultrasonography (US) Electrocardiography (ECG)	20
2	1) Clinical Electro physiological testing: Instruments, Techniques and Interpretations of a. Nerve conduction velocity including Repetitive Nerve Stimulation (RNS) b. Electromyography c. Bio-feedback technique. d. Late responses 2) Concepts of electro physiological studies in neuro muscular diseases as a diagnostic and therapeutic tool a. Evoked potentials – VEP, SSEP, MEP, BAE	20
3	Evaluation assessment and treatment planning strategies for musculoskeletal, neurological, cardiopulmonary, sports specific and other physiotherapy conditions: Principles of evaluation, clinical manifestations, general and specific clinical examination. C. Physiotherapy assessment of the following: o. Range of motion (ROM) p. Tone q. Muscular strength and endurance r. Flexibility s. Coordination i. Non equilibrium test ii. Equilibrium test t. Sports specific skills u. Cardiac efficiency v. Sensory evaluation w. Functional Evaluation i. Various scoring methods in functional assessment	20

	ii. Validity and reliability x. Fitness evaluation i. Aerobic ii. Anaerobic y. Spasm z. Trigger Point aa. Tender Point bb. Spasm cc. Assessment of cognitive, perceptual dysfunctions and vestibular dysfunction.	
4	Vital Signs. Identification of reasons for monitoring vital signs; importance of monitoring vital signs; common techniques of monitoring vital signs; identification and analysis of normal values with that of abnormal values	11
5	Developmental Screening (e) Factors Motor control assessment (f) Patterns of normal development (g) specific procedures and tests used to assess motor control defects	12
6	Anthropometry d. Body measurements - Height - Weight - Circumference e. Body Proportion - Body Mass Index (BMI) - Waist Hip Ratio (WHR) f. Body Composition - Somatotyping - Methods of measurement • Water displacement • Skin fold measurement • Under water weighing • Bioelectric Impedance Analysis (BIA)	30
7	Functional evaluation. e. The concepts of health status impairment; functional limitations; disability and handicap; definition of functional activity and the purposes and components of the functional assessment; selection of activity and roles for an individual based on his or her capabilities and functional limitations. f. Various forms of functional tests; physical function test and multi-dimensional functional assessment instrument, identification of instrument for testing function. g. Various scoring methods used in functional assessment; Reliability and validity of various functional assessments.	20
	Total	133



Master of Physiotherapy in Musculoskeletal (Orthopedic) Sciences Paper-VI

Elective-I: Physiotherapy in Musculoskeletal (Orthopedic) Sciences ANATOMY, PHYSIOLOGY AND BIOMECHANICS

Teaching Scheme			Evaluation Scheme				
Theory	Practical	Total	Internal		External		Total
			Th	Pr	Th	Pr	
4	4	8	30	30	70	70	**200**

1	Embryological development of musculoskeletal system.	**4**
2	Osteology; structure of bone, ossification of bones, skull bones, facial bones, bones of upper extremity,, lower extremity, pelvis, vertebral column, ribs.	**4**
3	Myology; Structure of muscles , type of muscle, muscle fibers, origin , insertion, nerve supply of muscles of upper extremity, lower extremity, Trunk.	**5**
4	Structure of joints, types of joints, detailed structure and formation of all the joints, detailed structure and formation of al the joints, neurobiology of joint	**4**
5	Neurology: peripheral nerves, dermatomes and myotomes,	**4**
6	Physiology: Joint physiology (movements), muscle physiology	**4**
7	Biomechanics of normal joints and Pathomechanics of fractures, deformed joints.	**5**

VENUS INSTITUTE OF PHYSIOTHERAPY SSIU At. Bhoyan Rathod Gandhinagar

Musculoskeletal Conditions- Assessment and Evaluation

Introduction, principles and concepts of Patient history, observation, Examination, Principles, scanning examination, examination of specific joints, functional assessment, specific tests, reflexes, cutaneous distribution, joint play movements, palpation and diagnostic imaging.

1.	Head and Face: Patient history, observation Examination, examination of the head, examination of the face, examination of the eye, examination of the nose, examination of the teeth, examination of the ear, special tests, reflexes and cutaneous distribution, joint play movements, palpation, diagnostic imaging.	**8**
2.	Cervical Spine: Patient history, observation Examination, active movements, passive movements, resisted isometric movements, peripheral joint scanning examination, myotomes, functional assessment, special tests, reflexes and cutaneous distribution, joint play movements , palpation, diagnostic imaging.	**8**
3.	Thoracic (dorsal) Spine: Patient history, observation Kyphosis, scoliosis, breathing chest deformities. Examination, active movements, passive movements, resisted isometric movements, functional assessment, specific tests, reflexes and cutaneous distribution, joint play movements , palpation, diagnostic imaging.	**8**
4.	Lumbar Spine: Patient history, observation Examination, active movements, passive movements, resisted isometric movements, functional assessment, specific tests, reflexes and cutaneous distribution, joint play movements , palpation, diagnostic imaging.	**8**
5.	Shoulder: Patient history, observation Examination, active movements, passive movements, resisted isometric movements, functional assessment, specific tests, reflexes and cutaneous distribution, joint play movements , palpation, diagnostic imaging.	**8**
6.	Elbow: Patient history, observation Examination, active movements, passive movements, resisted isometric movements, functional assessment, specific tests, reflexes and cutaneous distribution, joint play movements , palpation, diagnostic imaging.	**4**
7.	Temporomandibular Joint: Patient history, observation Examination, active movements, passive movements, resisted isometric movements, functional assessment, specific tests, reflexes and cutaneous distribution, joint play movements , palpation, diagnostic imaging.	**4**
8.	Forearm, Wrist and Hand: Patient history, Observation – common hand and finger deformities, other physical findings Examination, active movements, passive movements, resisted isometric movements, functional assessment, specific tests, reflexes and cutaneous distribution, joint play movements , palpation, diagnostic imaging.	**4**
9.	Pelvis: Patient history, observation Examination, active movements, passive movements, resisted isometric movements, functional assessment, specific tests, reflexes and cutaneous distribution, joint play movements , palpation, diagnostic imaging.	**8**
10.	Hip: Patient history, observation Examination, active movements, passive movements,	**8**

	resisted isometric movements, functional assessment, specific tests, reflexes and cutaneous distribution, joint play movements , palpation, diagnostic imaging.	
11.	Knee: Patient history, observation Examination, active movements, passive movements, resisted isometric movements, functional assessment, specific tests, reflexes and cutaneous distribution, joint play movements , palpation, diagnostic imaging.	**10**
12.	Lower leg, Ankle and Foot: Patient history, observation Examination, active movements, passive movements, resisted isometric movements, functional assessment, specific tests, reflexes and cutaneous distribution, joint play movements, palpation, diagnostic imaging.	**4**
13.	Assessment of Gait: a. Normal patterns of gait, stance phase, swing phase , joint motion during normal gait Normal parameters of gait, base width, step length, stride length, lateral pelvic shift, vertical pelvic shift, pelvic rotation centre of gravity, normal cadence. Overview and patient history, Observation – foot wear Examination, locomotion score, compensatory mechanisms. b. Abnormal gait, antalgic (painful) gait, arthrogenic gait (stiff hip or knee), ataxic gait, contracture gait, equines gait, gluteus maximus gait, gluteus medius (Trendelenburg's) , hemiplegic or hemiparetic gait, parkinsonian gait, plantar flexor gait, psoatic limp, quadriceps gait, scissors gait, short leg gait, steppage or drop foot gait.	**8**
14.	Assessment of Posture: Postural development, factors affecting posture, causes of posture Common spinal deformities, Lordosis, kyphosis, scoliosis Patient history, Observation – standing, forward flexion, sitting, supine lying prone lying Examination	**8**
15.	Assessment after acute injury of bone, ligament, and tendon a. Mechanism of injury b. History c. Observation d. Examination e. Special tests f. Palpation and diagnostic imaging	**6**
16.	Assessment of the Amputee: a. Levels of amputation b. Patient history, observation c. Examination, measurements related to amputation active movements, passive movements, resisted isometric movements, functional assessment, sensation testing, psychological testing , palpation, diagnostic imaging.	**4**
17.	Pre operative and post operative assessment in orthopaedic surgeries	**8**
18.	Assessment and evaluation of pain	**6**
	Total Hours	**152**

Apart from the above; the student is expected to learn assessment and evaluation in the following clinical conditions (pre operative and post operative).

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Practical's of Elective-I: Physiotherapy in Musculoskeletal (Orthopedic) Sciences		
1	Practical Assessment and Evaluation of Head and Face	9
2	Practical Assessment and Evaluation of Cervical Spine	9
3	Practical Assessment and Evaluation of Thoracic (dorsal) Spine	9
4	Practical Assessment and Evaluation of Lumbar Spine	9
5	Practical Assessment and Evaluation of Shoulder	9
6	Practical Assessment and Evaluation of Elbow	9
7	Practical Assessment and Evaluation of Temporomandibular Joint	9
8	Practical Assessment and Evaluation of Forearm, Wrist and Hand	9
9	Practical Assessment and Evaluation of Pelvis	9
10	Practical Assessment and Evaluation of Hip	9
11	Practical Assessment and Evaluation of Knee	9
12	Practical Assessment and Evaluation of Lower leg, Ankle and Foot	9
13	Assessment of Gait	10
14	Assessment after acute injury of bone, ligament, and tendon	10
15	Assessment of the Amputee	10
16	Pre operative and post operative assessment in orthopaedic surgeries	10
17	Assessment and evaluation of pain	4
	Total	152

Paper-VII
Elective-2: Physiotherapy in Musculoskeletal (Orthopedic) Sciences
CLINICAL MUSCULOSKELATAL CONDITIONS

Teaching Scheme			Evaluation Scheme				
Theory	Practical	Total	Internal		External		Total
			Th	Pr	Th	Pr	
4	4	8	30	30	70	70	**200**

1.	General Musculoskeletal disorders: Degenerative disorders of joints Infections of bones and joints Arthropathies Tumors of the bone Congenital deformities Spinal deformities	**18**

	Developmental disorders of bone Metabolic and endocrine disorders Conditions related to upper extremity, lower extremity and spine Soft tissue: overuse injuries Musculoskeletal problems in neuromuscular disorders	
2.	Traumatic Orthopedics: Classification of fractures Dislocation of various joints Fractures and dislocation of upper extremity Fractures and dislocation of lower extremity Fractures and dislocation of spine and pelvis Fractures of skull, face bones and ribs Soft tissue: acute traumatic injuries.	**18**
3.	Orthopedic surgeries: Amputation Joint replacement surgeries Osteotomy and Arthrodesis Surgery for correction of bone deformities and contractures Surgical procedures for fracture, dislocation Tendon transfer principles and procedures Bone grafting Nerve suturing and grafting Implants in Orthopedics	**15**

PHYSIOTHERAPY INTERVENTIONS IN MUSCULOSKELATAL CONDITIONS

1	Physiotherapy management procedures in general musculoskeletal disorders: Degenerative disorders of joints Infections of bones and joints Arthropathies	**18**

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	Tumors of the bone Congenital deformities Spinal deformities Developmental disorders of bone Soft tissue: overuse injuries Musculoskeletal Problems in Neuromuscular disorders Conditions related to upper extremity, lower extremity and spine Metabolic and endocrine disorders soft tissue acute traumatic injuries	
2	Physiotherapy management procedures in Traumatic Orthopedics: Fractures and dislocation of upper extremity Fractures and dislocation of lower extremity Fractures and dislocation of spine Fractures of sternum and ribs	**10**
3	Physiotherapy management procedures in orthopedic surgeries: Amputation Joint replacement surgeries Osteotomy and arthrodesis Surgery for correction of bone deformities and contractures Surgical procedures for fracture, dislocation Tendon transfers Bone grafting Nerve suturing and grafting	**10**
4	Orthosis, Prostheses and mobility aids in musculoskeletal problems: Principles of Orthosis and prostheses Biomechanical compatibility, materials and designs of mobility aids Different types of Orthosis and Prostheses used in musculoskeletal problems Functional training with Orthosis and Prostheses	**10**

5	Physiotherapeutic approaches in musculoskeletal conditions: Manual therapy approaches for specific joints of upper extremity, lower extremity and spine Therapeutic exercises commonly used in musculoskeletal conditions including correction exercises and home exercises Pilates and core stability exercises Proprioceptive Neuromuscular Facilitation (PNF) Hydrotherapy in common musculoskeletal conditions Swiss ball exercises Taping, Wrapping Bracing techniques.	**10**
6	Ergonomic principles and its application	**10**
7	Recent advances in Orthopedic Physiotherapy.	**12**
8	Community based rehabilitation in musculoskeletal conditions	**10**
9	Evidence based physiotherapy management for different musculoskeletal conditions	**11**
	Total Hours	**152**

Practical's of Elective-II Physiotherapy in Musculoskeletal (Orthopedic) Sciences Clinical Musculoskeletal Conditions		
1	Practical Demonstration of Physiotherapy management procedures in general musculoskeletal disorders: Degenerative disorders of joints Infections of bones and joints Arthropathies Tumors of the bone Congenital deformities Spinal deformities Developmental disorders of bone Soft tissue: overuse injuries Musculoskeletal Problems in Neuromuscular disorders Conditions related to upper extremity, lower extremity and spine	30

	Metabolic and endocrine disorders soft tissue acute traumatic injuries	
2	Practical Demonstration of Physiotherapy management procedures in Traumatic Orthopedics: Fractures and dislocation of upper extremity Fractures and dislocation of lower extremity Fractures and dislocation of spine Fractures of sternum and ribs	20
3	Practical Demonstration of Physiotherapy management procedures in orthopedic surgeries: Amputation Joint replacement surgeries Osteotomy and arthrodesis Surgery for correction of bone deformities and contractures Surgical procedures for fracture, dislocation Tendon transfers	30

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	Bone grafting Nerve suturing and grafting	
4	Practical Demonstration of Orthosis, Prostheses and mobility aids in musculoskeletal problems: Principles of Orthosis and prostheses Biomechanical compatibility, materials and designs of mobility aids Different types of Orthosis and Prostheses used in musculoskeletal problems Functional training with Orthosis and Prostheses	20
5	Practical Demonstration of Physiotherapeutic approaches in musculoskeletal conditions: Manual therapy approaches for specific joints of upper extremity, lower extremity and spine Therapeutic exercises commonly used in musculoskeletal conditions including correction exercises and home exercises Pilates and core stability exercises Proprioceptive Neuromuscular Facilitation (PNF) Hydrotherapy in common musculoskeletal conditions	20

	Swiss ball exercises Taping, Wrapping and Bracing techniques.	
6	Practical Demonstration of Ergonomic principles and its application	12
7	Practical Demonstration of Physiotherapy management procedures in general musculoskeletal disorders: Degenerative disorders of joints Infections of bones and joints Arthropathies Tumors of the bone Congenital deformities Spinal deformities Developmental disorders of bone Soft tissue: overuse injuries Musculoskeletal Problems in Neuromuscular disorders Conditions related to upper extremity, lower extremity and spine Metabolic and endocrine disorders soft tissue acute traumatic injuries	20
	Total	152

Master of Physiotherapy in Cardio-Pulmonary Science

Paper-VI
Elective-1: Physiotherapy in Cardio-Pulmonary and Respiratory Science Anatomy

Teaching Scheme			Evaluation Scheme				
Theory	Practical	Total	Internal		External		Total
			Th	Pr	Th	Pr	
4	4	8	30	30	70	70	**200**

	Fundamentals in cardio-respiratory conditions	
1	Cardio-Vascular System: Mediastinum: Divisions and contents Pericardium: Thoracic Wall: position, shape and parts of the heart; conducting System; blood Supply and nerve supply of the heart, anatomy of arteries, veins, and capillaries.	**4**
2	Respiratory system: Outline of respiratory passages**.** Pleura and lungs: position, parts, relations, blood supply and nerve supply; Lungs – emphasize on Broncho-pulmonary segments**.** Diaphragm: Origin, insertion, nerve supply and action, openings in the diaphragm. Intercostal muscles and Accessory muscles of respiration: Origin, insertion, nerve supply and action.	**4**

Physiology

	Cardiac System:	
1	Cardiac muscles: Structure. Ionic basis of action potential and pacemaker potential Properties.	**3**
2	Conducting system: Components. Cardiac Cycle: Definition. Phases of cardiac cycle. Heart sounds – causes, character.	**3**
3	Cardiac Output: Definition. Normal value. Determinants. Stroke volume and its regulation. Heart rate and its regulation and their variations.	**3**
4	Arterial Blood Pressure: Definition. Normal values and its variations. Determinants. Peripheral resistance. Regulation of BP.	**2**
5	Arterial pulse.	**2**
6	Shock – Definition. Classification–causes and features	**1**
7	Regional Circulation: Coronary, Cerebral and Cutaneous circulation	**2**
Respiratory System:		
1	Function of respiratory system: Pleura, tracheo-bronchial tree, alveolus, respiratory membrane and their nerve supply. Respiratory muscles.	**2**
2	Mechanics of breathing: Intrapleural and Intrapulmonary pressure changes during respiration.	**2**
3	Lung compliance: Normal value, pressure-volume curve, factors affecting	**2**

	compliance and its variations. Surfactant – Composition, production, functions.	
4	Spirometry: Lung volumes and capacities. Timed vital capacity and its clinical significance. Maximum ventilation volume. Respiratory minute volume.	2
5	Dead Space: Types and their definition.	2
6	Pulmonary Circulation. Ventilation-perfusion ratio and its importance.	2
7	Transport of respiratory gases: Diffusion across the respiratory membrane. Oxygen- haemoglobin dissociation curve. Factors affecting it. Haldane and Bohr Effect. Carbon dioxide transport: Different forms, chloride shift.	2
8	Neural Regulation of Respiration. Hering-breuer's reflex. Voluntary control. Chemical Regulation.	2
9	Physiology of microcirculation and edema	2
10	Hypoxia: Effects of hypoxia. Types of hypoxia. Asphyxia. Cyanosis – types and features.	4
11	Periodic breathing – definition and types.	2
12	Artificial respiration	2

Cardio-Pulmonary Conditions- Biomechanics, pathomechanics & Applied Anatomy

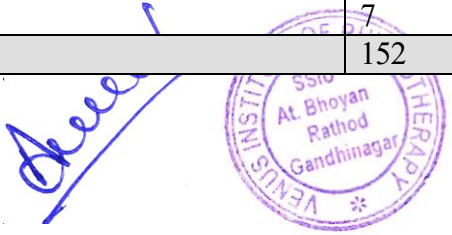
1	General structure and function	2
2	Rib cage and the muscles associated with the rib cage	2
3	Ventilatory motions: its coordination and integration	2
	Developmental aspects of structure and function	2
	Body positioning and various systemic changes	2
	Changes in normal structure and function I relation to pregnancy, scoliosis and COPD	2
	Respiratory muscle fatigue and training	2
8	Development of the Cardio Vascular, Pulmonary systems and deviations from the normal development.	4
9	Age related changes in Cardiovascular & Pulmonary System	2
10	Normal and abnormal responses of Cardiovascular & Pulmonary System during Exercise	4

Cardio-Pulmonary Conditions - Assessment and Evaluation

1	Assessment of cardio-pulmonary system, Adult and Pediatric: a) Medical Chart Review b) Patient/Family interview	4
2	Vitals a) Heart rate measurement b) Blood pressure measurement c) Respiratory rate measurement d) Temperature measurement	4
3	Physical Therapy Examination a) Inspection b) Auscultation	4

	c) Palpation d) Percussion	
4	Exercise Assessment a) Exercise Stress testing b) Activity and Endurance Evaluation c) Walk tests	**5**
5	Clinical Monitoring: a) Heart Rate and heart rate response to exercise b) Heart rhythm c) ECG monitoring d) Pace-maker rhythm e) Blood Pressure and Blood pressure response to exercise f) Respiratory rate and respiratory response to exercise g) ABG analyses h) Pulse Oximetry, oxygen saturation monitoring i) RPE j) Other signs and symptoms of exercise intolerance k) Exercise capacity	**5**
6	Other assessment tools: Body composition and body composition measures	**5**
7	Respiratory muscle strength and endurance	**5**
8	Autonomic dysfunction	**3**
9	Questionnaires survey and Scales	**5**
10.	Assessment of findings: a) Chest assessment b) Activity and endurance evaluation c) Defining the physiotherapy problem	**5**
11	Pulmonary function test	**5**
12	Evaluation Of peripheral vascular diseases	**5**
13	Clinical decision making skills in functional diagnosis in neonate, pediatrics, adults and geriatrics	**4**
14	Laboratorial investigations	**5**
15	Differential diagnosis	**5**
16	ADL analysis	**4**
17	Evidence based practice	**5**
	Total Hours	**152**

Practical's of Elective-1: Physiotherapy in Cardio-Pulmonary and Respiratory Science		
1	Assessment of cardio-pulmonary system, Adult and Pediatric: c) Medical Chart Review d) Patient/Family interview	15
2	Practical Demonstration of Vitals e) Heart rate measurement f) Blood pressure measurement g) Respiratory rate measurement h) Temperature measurement	15
3	Practical Demonstration of Physical Therapy Examination e) Inspection f) Auscultation g) Palpation h) Percussion	15
4	Exercise Assessment d) Exercise Stress testing e) Activity and Endurance Evaluation f) Walk tests	15
5	Practical Demonstration of Clinical Monitoring: l) Heart Rate and heart rate response to exercise m) Heart rhythm n) ECG monitoring o) Pace-maker rhythm p) Blood Pressure and Blood pressure response to exercise q) Respiratory rate and respiratory response to exercise r) ABG analyses s) Pulse Oximetry, oxygen saturation monitoring t) RPE u) Other signs and symptoms of exercise intolerance v) Exercise capacity	20
6	Practical Demonstration of Other assessment tools: Body composition and body composition measures	10
7	Practical Demonstration of Respiratory muscle strength and endurance	10
8	Assessment of Autonomic dysfunction	10
9	Assessment of findings: d) Chest assessment e) Activity and endurance evaluation f) Defining the physiotherapy problem	15
10	Pulmonary function test	10
11	Evaluation Of peripheral vascular diseases	10
12	Laboratorial investigations	7
	Total	152



Paper-VII

Elective-2: Physiotherapy in Cardio-Pulmonary Science Clinical Cardio-Pulmonary Conditions

Causes, clinical features, pathophysiology, general investigation, Medical and surgical management of the below mentioned conditions

Teaching Scheme			Evaluation Scheme				
Theory	Practical	Total	Internal		External		Total
			Th	Pr	Th	Pr	
4	4	8	30	30	70	70	**200**

1	**Respiratory Conditions:** a) Obstructive lung disease: Asthma, Chronic bronchitis, emphysema, Bronchiectasis, Cystic fibrosis, etc. b) Restrictive lung disease: Atelectesis, pneumonia, Pleural effusion, Pneumothorax, ARDS, c) Suppurative lung diseases like lung abscess, etc. d) Occupational lung diseases-occupational asthma, inhalation injuries, etc. e) Chest trauma f) Chest wall deformities g) Lung cancers h) Pediatric/Neonatal Pulmonary diseases i) Sleep apnea j) Respiratory failure	**10**
2	**Cardio Vascular Conditions:** a) Pediatric Cardio-vascular disorder: Fallot's tetralogy, Co-arctation of aorta, Patent ductusarteriosus, Arterial septal defect, ventricular septal defect, Transposition of great vessels. b) Acquired heart diseases: Coronary Artery Diseases, Cardiac arrhythmias, Valvular heart diseases, Cardiomyopaties, c) Myocardial infarction d) Hypertension and diabetes e) Diseases of the myocardium f) Pericardial diseases g) Tumors of the heart h) Peripheral vascular diseases: Definition, Etiology, Clinical features, signs and symptoms, complications, management and treatment of following diseases : Arteriosclerosis, Atherosclerosis, Aneurysm, Buerger's disease, Raynaud's Disease, Thrombophlebitis, Deep Vein Thrombosis, Pulmonary Embolism, Varicose Veins. i) Cardiac arrest	**10**

Physiotherapy Interventions in Cardio-Pulmonary Conditions

- Student should be able to plan appropriate treatment regime based on the knowledge of various subjects learned during the two year programme for the below mentioned conditions.
- Additionally emphasis should be on special techniques/ approaches like Suctioning, Chest PNF, Inhalation and Humidification therapy, FET's.
- Student should update himself/ herself with latest advancement in the therapeutic approaches.

1	Cardio respiratory physiotherapy management principles, pre and post surgical intervention including critical care.	**10**
2	Cardio-Respiratory physiotherapeutic techniques in adult and pediatric: a) To improve lung volumes b) To decrease work of breathing c) To clear secretions d) To Increase exercise tolerance e) To improve ventilation and gas exchange f) To Improve ADL demands	**10**
3	Physiotherapy management in Obstructive and Restrictive lung diseases.	**6**
4	Post operative management of Respiratory conditions	**6**
5	Pulmonary rehabilitation	**6**
6	Adjuncts to chest PT	**6**
7	Post operative management of cardiac conditions	**6**
8	PT management in acquired and congenital heart diseases	**5**
9	Cardiac rehabilitation	**5**
10	CPR	**5**
11	PT management in Peripheral vascular diseases	**6**
12	Cardiac transplantation	**6**
13	Lung transplantation	**6**
14	Respiratory and cardiology pharmacology in brief.	**6**
15	Surgical interventions in brief: Cardio-Respiratory and Peripheral Vascular Disorder.	**6**

ICU Management

1	Intensive Care unit: concept and set up, equipments for advanced methods resuscitation, monitoring and patient management	**10**
2	Artificial airways, ventilators, pulse oximetry, O2 therapy	**5**
3	PT management in ICU	**5**
4	Transfer and turning of patient	**6**
5	Common complications in ICU	**5**
6	PICU and NICU management	**6**
	Total Hours	**152**

Practical's of Elective-II Physiotherapy in Cardio-Pulmonary Science Clinical Cardio-Pulmonary Conditions		
1	Cardio respiratory physiotherapy management principles, pre and post surgical intervention including critical care.	9
2	Cardio-Respiratory physiotherapeutic techniques in adult and pediatric: a) To improve lung volumes b) To decrease work of breathing c) To clear secretions d) To Increase exercise tolerance e) To improve ventilation and gas exchange f) To Improve ADL demands	15
3	Physiotherapy management in Obstructive and Restrictive lung diseases.	9
4	Post operative management of Respiratory conditions	9
5	Pulmonary rehabilitation	9
6	Adjuncts to chest PT	5
7	Post operative management of cardiac conditions	9
8	PT management in acquired and congenital heart diseases	9
9	Cardiac rehabilitation	9
10	CPR	5
11	PT management in Peripheral vascular diseases	9
12	Intensive Care unit: concept and set up, equipments for advanced methods resuscitation, monitoring and patient management	5
13	Artificial airways, ventilators, pulse oximetry, O2 therapy	10
14	PT management in ICU	10
15	Transfer and turning of patient	10
16	Common complications in ICU	10
17	PICU and NICU management	10
	Total	152

PAPER VIII - DISSERTATION

R.M PHYSIO 24:- RECOMMENDED BOOKS :-

I YEAR M.P.T

1. Scientific basis of human movement - Gowitzke, Williams & Wilkins, Baltimore 1988 3rd edition.
2. Clinical biomechanics of spine-White A,A and Punjabi-J.B Lippincot, Philadelphia1978.
3. Kinesiology - Brunnstrom Singe, F.ADavis-Philadelphia-1966
4. Textbook of work physiology – Guyton, Prim Books Banglore – 1991 8th edition
5. Handbook of physiology in Aging – Masoro, C.R.C Press,1981.
6. Research for physiotherapists – Hicks C., Churchill Living stone, Edingburgh 1995 Ed.S
7. Introduction to research in Human Sciences – Polgar S., Churchill Living stone, London,1988.
8. Elements of Research in Physical Therapy – Currier D.P., Williams & Wilkins, Baltimore, 1990, Ed.3.
9. Handbook of Research Method – Sproull, Scarecrow Press,1998.
10. Physical Therapy Research – Domholdt, W.B. Saunders, Philadelphia. 1993.
11. Public power & Administration – Wilenski, Hale &Iremonger,1986.
12. Physical Therapy Administration & Management – Hickik RobertJ.
13. Management Principles for physiotherapists – Nosse LorryJ.
14. Human Neuro-anatomy – Carpenter M. B., Williams & Wilkins, Baltimore,1983.
15. Physical Therapy Assessment in Early Infancy – Wilhelm Churchill Living stone, New York,1993.
16. Physical Therapy for Children – Campbell Suzann K, W.B. Saunders, Philadelphia,1994.
17. Physical Management of Multiple Handicapped – Fraser, William & Wilkins,Baltimore.
18. Elements of paediatric Physiotherapy – Eckerley p, Churchill Living stone, Edinburgh,1993.
19. Physiotherapy in paediatrics – Shepherd R. Heinmann, London, 1980 2nd edition
20. The growth chart – WHO, Geneva,1986.
21. Orthotics in neurological rehabilitation – Alsen, Demos Publication, New York1992.

II Year MPT

1. Manual of nerve conduction velocity techniques – De Lisa, Raven press, New York,1982.
2. Electro-diagnosis in diseases of nerve and muscle – Kimura j, F.A. Davis,Philadelphia.
3. Mobilization of the extremity joints – Kalternbore, Harper and Row, Philadelphia,1980.
4. Chest Physiotherapy in Intensive Care Unit – Makezie, Williams & Wilkins,Baltimore.
5. Cardiopulmonary Symptoms in Physiotherapy – Cohen M, Churchill Livingstone, London –1988.
6. Physical Rehabilitation: assessment and Treatment –O'Sullivan,F.A. Davis, Philadelphia 1994.
7. Neuro-rehabilitation – Faber, W.B. Saunders, Philadelphia1982.
8. Orthopaedic Physical therapy – Donatteli, London, Churchill Livingstone,1994.
9. Yoga therapy – Kuvalayananda Swami and Vinekar, Popular prakrashan, Bombay,1992.
10. Gait Analysis – Perry J., Black Thorofare, New Jersy, 1992.
11. Biofeedback – A practitioner's guide – KerthD, Guiford press.
12. The neural basis of motor control – Black I, Churchill Livingstone, London – 1987.
13. Physical therapy Management of Parkinson's disease – Tumbell Gerode I, Churchill Livingstone, London –1994.
14. Abnormal postural reflex activity caused by Brain lesions – Bobath B. Aspen publications, Rockville,1897.
15. Disorders of voluntary muscle – Eagal, Churchill Livingstone, Edingburgh,1988.
16. A clinician's view of neuro muscle disorder – Brook M. H Williams and Wilkins, Baltimore, 1986.
17. Proprioception, neuro muscular facilitation techniques – Knot M. and Voss, Harper and Row, New York 1972 2nd edition
18. Stroke rehabilitation – Laidler, Capman and Hall, London 1994.
19. Motor relearning programme for stroke – Carr, Aspen publication, Rock ville, 1987.
20. Adult hemiplegia: evaluation and treatment – Bobath B. Heinmann, London1983.
21. Paraplegia and tetraplegia – Brombley, Churchill Livingstone, Edingbourgh1991.
22. Child with spinabifida – Anderson E.M, and Spain B Methun, London1977.
23. A manual of neonatal intensive care – Robert N.R.C, Edward Arnold, London 1986.
24. Measurement in Physical therapy – Churchill Livingstone, London1988.
25. Soft tissue pain and disability – Cailliet Rene, Jaypee Brothers, New Delhi1992.
26. Myofascial Pain And Dysfunction – Travell, Williams & Wilkins,

Baltimore1983.
27. Physical Therapy of the low back – Twomoy, Churchill Livingstone, London1995.
28. Sports Injuries of the Shoulder – Souza Thomas A, Churchill Livingstone, London1994.
29. Vertebral Manipulation – Maitland G.D, Boston, Butterworth & Co. Boston,1997.
30. Peripheral Manipulation – Maitland G.D, Boston, Butterworth & Co. Boston,1997.
31. Sports and physical therapy – Bernhardt Donna, Churchill Livingstone, London1995.
32. Hand rehabilitation – Christine, Churchill Livingstone, London 1995.
33. Cardiopulmonary Symptoms in Physiotherapy practice –Cohen M. Churchill Livingstone, London 1988.
34. Clinical application of ventilatory support – Kinby, Churchill Livingstone, New York1990.
35. Cardiopulmonary Physiotherapy – Irwin C.V., Mosby, St. Louis 1990.
36. Pulmonary rehabilitation: Guidelines to success – Hoidkins, Butterworth, Boston1984.
37. Cardiac Rehabilitation – Amundsen L.R, Churchill Livingstone, London1988.
38. Obstetrics and Gynecological Physical Therapy – Wilder Elnine, Churchill Livingstone, New York1988.
39. Physiotherapy in Obstetrics and gynecology – Polden& Mantle, Jaypee Brothers, New Delhi1994.
40. Physical Therapy of the cancer Patient – McGaryexcharles. Churchill Livingstone, New York 1989.
41. Industrial Therapy – Key G.L, Mosby, St. Louis1987.

JOURNALS

1. Journal of Indian Association of Physiotherapy
2. Physical Therapy (APTA, America)
3. Physiotherapy (CSP, London)
4. American journal of Physical Medicine &Rehabilitation
5. Physiotherapy(Canada)
6. Physiotherapy – theory &Practice
7. Australian Journal of Physiotherapy
8. Clinical Kinesiology
9. Journal of Bio-mechanics
10. American Journal of Sports Exercises
11. Pediatric Physical Therapy
12. Journal of Rehabilitation – Research &Development
13. Archives of Physical Medicine &Rehabilitation
14. Journal of Pediatric Orthopedics.
15. Journal of Neurological Sciences.

SECTION – III

TABLE – III

MODEL CHECK-LIST FOR EVALUATION OF JOURNAL REVIEW PRESENTATIONS

Name of the student:

Name of Faculty / Observer:

Date:

Sr. No	Items for observation during Presentation	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1	Article chosen was					
2	Extent of understanding of Scope & objectives of the paper by the candidate					
3	Whether cross references have been Consulted					
4	Whether other relevant publications Consulted					
5	Ability to respond to questions on the paper/ subject					
6	Audio-visual aids used					
7	Ability to defend the paper					
8	Clarity of presentation					
9	Any other observation					
	Total Score					

TABLE – IV

MODEL CHECK-LIST FOR EVALUATION OF SEMINAR PRESENTATIONS

Name of the student:

Name of Faculty / Observer:

Date:

Sr. No.	Items for observation during presentation	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1	Whether other relevant publications consulted					
2	Whether cross references have been consulted					
3	Completeness of preparation					
4	Clarity of presentation					
5	Understanding of subject					
6	Ability to answer the questions					
7	Time schedule					
8	Appropriate use of Audio – Visual aids					
9	Overall performance					
10	Any other observations					
	Total score					

TABLE – V

MODEL CHECK-LIST FOR EVALUATION OF CLINICAL WORK

Name of student:

Name of unit head:

Date:

Sr. No.	Points to be considered	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1	Regularity of the attendance					
2	Punctuality					
3	Interaction with collegues and supportive staff					
4	Maintenance of case records					
5	Presentation of cases during rounds					
6	Investigation work up					
7	Besides manners					
8	Rapport with patients					
9	Treatment approaches & techniques					
10	Overall quality of ward work					
	Total score					

TABLE – VI

EVALUATION FOR CLINICAL PRESENTATION

Name of student:

Name of Faculty:

Date:

Sr. No	Points to be considered	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1	Completeness of History					
2	Whether all relevant points elicited					
3	Clarity of presentation					
4	Logical order					
5	Mentioned all positive and negative points of importance					
6	Accuracy of general physical examination					
7	Whether all physical signs elicited Correctly					
8	Whether any major signs missed or misinterpreted					
9	Diagnosis – Whether it follows logically from history & findings					
10	Investigation required Special investigation					
11	AIMS					
12	MEANS					
13	Treatment Techniques					
14	Other					
	Grand Total					

TABLE – VII

MODEL CHECK-LIST FOR EVALUATION OF TEACHING SKILL PRACTICE

Name of student:

Name of Faculty:

Date:

Sr. No.	Details	Strong Point	Weak Point
1	Communication of the purpose of the talk		
2	Evokes audience interest in the subject		
3	The introduction		
4	The sequence of ideas		
5	The use of practical examples & / or illustrations		
6	Speaking style (enjoyable, monotonous, etc., Specify)		
7	Attempts audience participation		
8	Summary of main points at the end		
9	Asks questions		
10	Answer questions asked by the audience		
11	Rapport of the speaker with his audience		
12	Effectiveness of the talk		
13	Uses Audio – Visual aids appropriately		

VENUS INSTITUTE OF PHYSIOTHERAPY SSIU At. Bhoyan Rathod Gandhinagar

TABLE – VIII

MODEL CHECK – LIST FOR DISSERTATION PRESENTATION

Name of student:

Name of Faculty:

Date:

Sr. No.	Points to be considered divine	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1	Interest shown in selecting a topic					
2	Appropriate review of literature					
3	Discussion with guide & other faculty					
4	Quality of protocol					
5	Preparation of proforma					
	Total score					

TABLE – IX

CONTINUOUS EVALUATION OF DISSERTATION WORK BY GUIDE

Name of student:

Name of Faculty:

Date:

Sr. No.	Items for observation during presentation	Poor (0)	Below Average (1)	Average (2)	Good (3)	Very Good (4)
1	Periodic consultation with guide					
2	Regular collection of case material					
3	Depth of analysis / discussion					
4	Departmental presentation of Findings					
5	Quality of final output					
6	Others					
	Total score					

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.	
3	Cerebrum and cerebral hemispheres, Cerebral cortex	

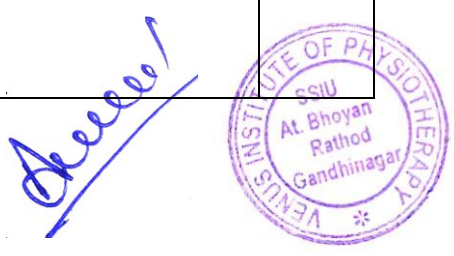
4	Cerebellum and its connections	**3**
5	Brain stem, Midbrain, Pons & medulla	**4**
6	Thalamus, hypothalamus and its connections	**2**
7	Limbic system, reticular formation	**2**
8	Special senses	**2**
9	Internal capsule, corpus striatum	**2**
10	Basal ganglia and its connections	**2**
11	Ventricular 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, Neurosyphillis.	**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**

	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.	Syringomyellia, Multiple sclerosis, Myasthenia gravis	**1**
13.	Peripheral nerve and plexus lesions	**1**
14	Carniovertebral 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**

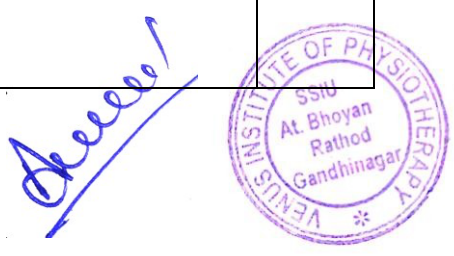
	c. Unified Parkinson's diseases rating scale version 3	
11	Spinal cord injury; a. Frankel's scale b. Motor index and sensory indices c. American spinal cord injury association assessment chart d. Pain assessment and evaluation	**10**
12	Basic elements of Neuro Diagnostic Tests; a.CT scan b. MRI c. Carotid 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 Physiotheraputics Intervention

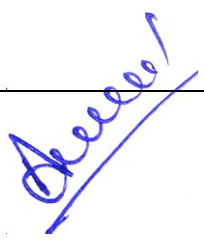
Teaching Scheme			Evaluation Scheme				
Theory	Practical	Total	Internal		External		Total
			Th	Pr	Th	Pr	
4	4	8	30	-	70	-	**100**

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, Neurosyphillis.	**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	Syringomyellia, Multiple sclerosis, Myasthenia gravis	**8**
12	Peripheral nerve and plexus lesions	**5**
13	Carniovertebral 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**



	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**

5.	Pyogenic infections of CNS: Meningitis, Brain abscess, Tuberculosis, Neurosyphillis.	**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**
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14.	Syringomyellia, Multiple sclerosis, Myasthenia gravis	**10**
15.	Peripheral nerve and plexus lesions	**5**
16	Carniovertebral junction abnormalities	**5**
17.	Hydrocephalus	**5**
18.	Cerebral lesions	**10**
	Total Hours	**152**