

SWARNIM STARTUP & INNOVATION UNIVERSITY

SWARNIM SCIENCE COLLEGE

VALUE ADDED COURSE (VAC)

Research Methodology Course - VACRMC

Duration: **30 Hours (15 Sessions, 2 Hours Each)**

Session	Topic	Content	Duration
Session 1	Introduction to Research Methodology	Definition and Importance of Research, Types of Research, Research Process Overview	2 hours
Session 2	Research Problem and Hypothesis	Identifying Research Problems, Formulating Research Questions, Hypothesis Development	2 hours
Session 3	Literature Review	Purpose of Literature Review, Sources of Literature, Conducting a Literature Review	2 hours
Session 4	Research Design and Methodology	Research Design Types, Choosing a Research Methodology, Qualitative vs Quantitative Research	2 hours
Session 5	Sampling Techniques	Probability and Non-Probability Sampling, Determining Sample Size, Sampling Errors	2 hours
Session 6	Data Collection Methods	Primary and Secondary Data Collection, Tools and Techniques for Data Collection	2 hours
Session 7	Survey Design and Questionnaires	Designing Surveys, Crafting Effective Questionnaires, Pre-testing and Pilot Surveys	2 hours
Session 8	Qualitative Data Collection	Interviews, Focus Groups, Case Studies, Ethnography	2 hours
Session 9	Quantitative Data Collection	Experiments, Observations, Longitudinal Studies, Cross-Sectional Studies	2 hours
Session 10	Data Analysis Techniques I	Qualitative Data Analysis, Thematic Analysis, Content Analysis, Coding Techniques	2 hours
Session 11	Data Analysis Techniques II	Quantitative Data Analysis, Descriptive Statistics, Inferential Statistics	2 hours
Session 12	Using Statistical Software	Introduction to SPSS, R, or other statistical tools, Data Entry and Analysis	2 hours
Session 13	Interpreting and Presenting Results	Data Interpretation, Visualizing Data, Writing Research Reports	2 hours
Session 14	Ethics in Research	Ethical Considerations, Informed Consent, Confidentiality, Avoiding Plagiarism	2 hours



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Session 15	Finalizing and Presenting Research	Final Report Writing, Presentation Skills, Peer Review and Feedback	2 hours
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Assessments

- **Participation:** Active participation in discussions and interactive sessions.



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