



COURSE CURRICULUM

Course Title: RESEARCH METHODOLOGY

Course Code: TTA 901 Credit Units: 04

Course Objectives:

L	T	P/S	SW/F W	TOTAL CREDIT UNITS
3	1	-	-	04

The objective of the course is to familiarize the PhD scholars with research and its various methods.

The focus of the course is applied and decisional. It aims at providing the relevant inputs to the research scholars so that they could study systematically various complex problems and provide information and solutions for the same

Pre-requisites: Nil

Student Learning Outcomes:

- Understanding the different types of research methods
- Understanding the tool and techniques of successful research

Course Contents/Syllabus:

	Weightage (%)
Module I	15
Descriptors/Topics Introduction: Definitions and types of research; invention, innovation and research; Research, Invention and Axioms, Problem Identification, Research process and steps in conducting research; Review of literature; Planning research – Preparing the Research Proposal, Elements of Research Proposal, Evaluating Research Proposal; Research design; Applications of Research. Science of Logic and Entropy, Macro and micro factors of research environment, Discussion of different classical research papers in different domain, Importance of doctoral confluence or colloquium, Reading Comprehending research papers in leading journals	
Module II	

<p>Designs</p> <p>Exploratory Designs: In-Depth Interviews and Focus Groups; Descriptive Research Designs: Survey Methods and Errors; Observation Techniques, Experiments, and Test Markets; Experimental Designs: Validity and Reliability Concerns with Experimental Research Designs, Improving the Internal and External Validity of Experimental Designs. Types of Experimental Research Designs- Pre-experimental Designs, True Experimental Designs and Quasi-experimental Designs</p>	<p>10</p>
<p>Module III</p>	
<p>Gathering and Collecting Accurate Data</p> <p>Sampling: Theory, Designs, and Issues in Research – Sampling Terminology, Determining Appropriate Sample Sizes, Probability and Nonprobability Sampling, Steps in Developing a Sampling Plan. Overview of Measurement: Construct Development - Abstractness of the Construct, Determining Dimensionality of the Construct, Construct Validity. Scale Measurement - The Nature of Scale Measurement, Properties of Scale Measurements, Four Basic Levels of Scales - Nominal Scales, Ordinal Scales, Interval Scales, Ratio Scales, Attitude Scale Measurements Used in Survey Research. Questionnaire Design and Issues</p>	<p>15</p>
<p>Module IV</p>	
<p>Descriptors/Topics Modeling and Validation:</p> <p>Introduction to Model, Metaphors, Constructs, Relationships, Spatial and Temporal Testing of Model, Predictive Adequacy, Empirical Validity, Falsifiability and Utility, Poppers’ Modeling Method, Transformational Modeling, Assumptions Validations, Clinical Validation, Boundary and Components of Models, Measurement Issues of Variables, Logical Adequacy, Explanatory Potential, Utility of the Model, Back Testing, Stress Testing</p>	<p>20</p>
<p>Module V</p>	
<p>Descriptors/Topics Analytical Tools and Simulation</p> <p>Quantitative Tools and Qualitative methods of data analysis; Grey Coefficient, Parametric tests, Non Parametric Tools (Sign Test, Mann Whitney U Test, Kolmogorov-Smirnov Test, Kruskal-Wallis test), Data Envelopment Analysis, Taguchi Optimization, Bivariate Analysis, Logit and Probit Analysis, Monte Carlo Simulation, Decision Tree Analysis; Advance Multivariate analysis - discriminant analysis, cluster analysis, factor analysis and conjoint analysis;</p> <p>Qualitative Methods: Grounded Theory, Narrative Analysis, Thematic Analysis, Discourse Analysis, Content Analysis, Conversation Analysis, Ethnography, Participant Observation, Interview, Focus Group Discussions, Case Studies, Textual Material: Autobiographical Accounts, Document Analysis</p>	<p>20</p>
<p>Module VI</p>	
	<p>20</p>

Descriptors/Topics**Report/ Thesis writing:**

Research Communication, Sources of Publication, API Grading and Publication, Impact Factor and Publication, Abstract, Executive Summary, JEL Classification, Reference Methodology, Dissertation, Research Paper, Working Paper, Conceptual Framework, Indexing, Piracy Status, Authentication Tools, Case Studies, Report Writing, Authentication of Conclusion, Relation between review of literature and finding, Gap analysis, Objectives formulation, Methodological issues, International standard of research report

Pedagogy for Course Delivery:

- Case study
- PPT

Lab/ Practicals details, if applicable: NA**List of Experiments:****Assessment/ Examination Scheme:**

Theory L/T (%)	Lab/Practical/Studio (%)	End Term Examination
100%	-	100%

Theory Assessment (L&T):

Continuous Assessment/Internal Assessment					End Term Examination
Components (Drop down)	Class Test	Assignment	Viva	Attendance	External Exam
Weightage (%)	15	05	05	05	70

- Internal Components includes: Case study/ Presentations/ Fieldwork/ Viva voce
- **At least two internal components must be included**