



GUJARAT TECHNOLOGICAL UNIVERSITY

Doctor of Philosophy

Subject Code : PHD2201

Subject Name : Research Methodology

WEF Academic Year :	2022-2023
Semester :	1
Category of the Course :	Ph. D.

Course Scheme :

Teaching Scheme			Total Credits	Assessment Pattern and Marks				Total Marks
L	T	PR	C	Theory		Practical		
				ESE (E)	PA(M)	ESE (V)	PA (I)	
4	0	0	4	70	30	0	0	100

Course Objective :

The objective of the course is to introduce the basic methods of conducting research, explore ideas in formulating research hypotheses & objectives and sample framework for taking up research studies in a structured manner. It is intended to facilitate for the development of an insight into different statistical tools for data analysis, interpretation and presentation of reports.

Research Methodology as a subject should help researchers to prepare the literature in chronological order and should logically analyze the concerns. This subject should help in framing the research problems to enhance the scale of understanding. In this world of global village, research papers are available in abundance; one thesis submitted by a scholar, in no way should be a repetition of a work already done. This subject should help researchers to use tools, techniques, concepts and world's best practices to present a unique research.

Course Content :

Sr. No.	Course Content	No. of Hours
1	General Introduction to Research <ul style="list-style-type: none">History of Science & Technology: Importance of research, role of research, aims& objectives, research process, phases of research.	8



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2	Research problem Formulation <ul style="list-style-type: none">Review of Research Literature: Purpose and use of literature review, locating relevant information, use of library & electronic databases, preparation & presentation of literature review, research article reviews, theoretical models and frame work.Identification of gaps in research, formulation of research problem, and identification of research objectives.	16
3	Research Design <ul style="list-style-type: none">Qualitative Methods: Types of hypothesis and characterization.Quantitative Methods: Statistical methods for testing and evaluation.Characterization of experiments: Accuracy, reliability, reproducibility, sensitivity, Documentation of ongoing research.	16

Reference Book :

- Research Methodology, Methods & Techniques, C.R. Kothari, Viswa Prakashan, Latest edition.
- Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, Latest Edition, by John W. Creswell.
- Qualitative Research: A Guide to Design and Implementation Latest Edition, by Sharan B. Merriam, Elizabeth J. Tisdell.
- The Craft of Research, Latest Edition, by Wayne C. Booth, Gregory G. Colomb, Joseph M. Williams.
- Research Methods- A Process of Inquiry, Graziano, A. M., Raulin, M.L, Pearson Publications, Latest Edition.
- The Research Methods Knowledge Base, Latest Edition, by William M. K. Trochim (Author), James P. Donnelly.
- Qualitative Inquiry and Research Design: Choosing Among Five Approaches Latest Edition, by John W. Creswell.
- How to Write a Thesis: Murray, R. Tata McGraw Hill, Latest Edition.
- Writing For Academic Journals, Murray, R., and McGraw Hill International.
- Writing for Publication, Henson, K.T., Allyn & Bacon, Latest Edition.

Course Outcome :

After Completion of the Course, Student will able to :

Sr. No.	Course Outcomes
01	Ph.D. Scholar shall be fully aware about the process of research, methodology to be followed, literature surveys to be conducted, defining hypotheses to research & objectives of work to be done.
