

CE/BOS/10 CE603/0709

K L UNIVERSITY
RESEARCH METHODOLOGY (10 CE603)

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SYLLABUS

UNIT-I: Introduction

Definition and objectives of Research-Types of research, Various Steps in Research process, Mathematical tools for analysis, Developing a research question- Choice of a problem, Literature review, Surveying, Synthesizing, critical analysis, reading materials, reviewing, rethinking, critical evaluation, interpretation, Research Purposes, Ethics in research – APA Ethics code.

UNIT-II: Quantitative Methods for problem solving

Statistical Modeling and Analysis, Time Series Analysis Probability Distributions, Fundamentals of Statistical Analysis and Inference, Multivariate methods, Concepts of Correlation and Regression, Fundamentals of Time Series Analysis and Spectral Analysis, Error Analysis, Application of Spectrum Analysis.

UNIT-III: Tabular and graphical description of data

Tables and graphs of frequency data of one variable, Tables and graphs that show the relationship between two variables, Relation between frequency distributions and other graphs, preparing data for analysis.

UNIT-IV: Soft Computing

Computer and its role in research, Use of statistical soft ware SPSS, GRETL in research. Introduction to evolutionary algorithm – Fundamentals of Genetic algorithms, Simulated Annealing, Neural Network based optimization, Optimization of fuzzy systems.

UNIT-V

Structure and Components of Research Report, Types of Report, Layout of Research Report, Mechanism of writing a research report, referencing in academic writing.(5)

Text Books:

1. C.R. Kothari, Research Methodology Methods and Techniques,2nd Edition, Vishwa Prakashan,2006
2. Donald H. McBurney, Research Methods, 5th edition, Thomson Learning, ISBN: 81-315-0047-0, 2006

Reference Books:

1. Donald R.Cooper, Pamela S. Schindler, Business Research Methods, 8th Edition, Tata MCGRAW-Hill Co.Ltd.,2006.
2. Fuzzy Logic with Engg Applications, Timothy J.Ross, Wiley Publications, 2nd Edition.
3. R. Panner Selvam, Research Methodology.