

JSS Science and Technology University, Mysuru

Course Code	Course Title	Teaching Hours
	Research Methodology	

COURSE ASSESSMENT METHOD:

- Semester End Exam [100 Marks, 3 Hours]

COURSE OUTCOMES:

Upon successful completion of this course, students will be able to,

CO1: Explain and illustrate the basic principles of research design and methods

CO2: Describe sampling methods and apply hypotheses testing methods

CO3: Explain the concepts of IPR and prepare a research report/thesis

UNIT:1

12 Hours

Meaning, Objectives and Characteristics of research - Research methods Vs Methodology - Types of research - Descriptive Vs. Analytical, Applied Vs. Fundamental, Quantitative Vs. Qualitative, Conceptual Vs. Empirical - Research process - Criteria of good research - Developing a research plan. **Defining the research problem** - Selecting the problem - Necessity of defining the problem - Techniques involved in defining the problem - Importance of literature review in defining a problem - Survey of literature - Primary and secondary sources - Reviews, treatise, monographs patents - web as a source - searching the web - Identifying gap areas from literature review - Development of working hypothesis

UNIT:2

10 Hours

Research design and methods – Research design – Basic Principles- Need of research design — Features of good design – Important concepts relating to research design – Observation and Facts, Laws and Theories, Prediction and explanation, Induction, Deduction, Development of Models - Developing a research plan - Exploration, Description, Diagnosis, and Experimentation - Determining experimental and sample designs.

UNIT:3

10 Hours

Sampling design - Steps in sampling design - Characteristics of a good sample design - Types of sample designs - Measurement and scaling techniques - Methods of data collection - Collection of primary data - Data collection instruments. **Testing of hypotheses** - Basic concepts - Procedure for hypotheses testing flow diagram for hypotheses testing - Data analysis with Statistical Packages – Correlation and Regression - Important parametric test - Chi-square test - Analysis of variance and Covariance

UNIT:4**10 Hours**

IPRs- Invention and Creativity- Intellectual Property-Importance and Protection of Intellectual Property Rights (IPRs)- A brief summary of: Patents, Copyrights, Trademarks, Industrial Designs- Integrated Circuits-Geographical Indications-Establishment of WIPO-Application and Procedures.

UNIT:5**10 Hours**

Interpretation and report writing - Techniques of interpretation - Structure and components of scientific reports - Different steps in the preparation - Layout, structure and language of the report - Illustrations and tables - Types of report - Technical reports and thesis

TEXT BOOKS / REFERENCES:**Text books:**

1. Kothari, C.R., 1990. Research Methodology: Methods and Techniques. New Age International.
2. Garg, B.L., Karadia, R., Agarwal, F. and Agarwal, U.K., 2002. An introduction to Research Methodology, RBSA Publishers

Reference books:

1. Anderson, T. W., An Introduction to Multivariate Statistical Analysis, Wiley Eastern Pvt., Ltd., New Delhi
2. Fink, A., 2009. Conducting Research Literature Reviews: From the Internet to Paper. Sage Publications
3. Intellectual Property Rights in the Global Economy: Keith Eugene Maskus, Institute for International Economics, Washington, DC, 2000

ADDITIONAL LEARNING SOURCES:

1. Day, R.A., 1992.How to Write and Publish a Scientific Paper, Cambridge University Press.
2. Subbarau NR-Handbook on Intellectual Property Law and Practice-S Viswanathan Printers and Publishing Private Limited.1998