

MCPE2021 RESEARCH METHODOLOGY AND IPR (3-0-0)

Course Overview

This course provides foundational and advanced knowledge on research methodology and intellectual property rights. It trains students in scientific research processes, data analysis, research ethics, and protection of intellectual assets.

Course Objectives

- Understand the fundamentals and process of scientific research.
- Develop skills in research design, data collection, and analysis.
- Gain exposure to various statistical tools used in hypothesis testing.
- Understand the concepts of IPR including patents, trademarks, copyrights, and designs.

Module 1: Introduction to Research Methodology

Definition, objectives, and significance of research.

Types of research: Qualitative, Quantitative, Fundamental, Applied.

Research ethics and plagiarism.

Literature review, identification of research gaps, and citation styles.

Module 2: Research Design and Hypothesis Formulation

Research design: need, features, and components.

Variables: dependent, independent, control variables.

Experimental designs: CRD, RBD, Latin Square, Factorial Design.

Hypothesis: formulation, types, and characteristics.

Module 3: Data Collection and Statistical Analysis

Primary and secondary data collection methods.

Sampling: need, principles, and sampling techniques.

Statistical analysis: measures, tests (mean, variance, chi-square testing).

Hypothesis testing: Type I & II errors, level of significance.

Module 4: Intellectual Property Rights

Introduction to IPR and its need in academia and industry.

Patents: types, criteria, filing procedures, rights and limitations.

Trademarks and industrial designs: registration, protection, infringement.

Copyright: scope, rights, limitations, infringement and remedies.

Suggested Activities

Writing a research proposal.

Literature survey and analysis of research papers.

Sampling and hypothesis testing exercises.

Case studies on IPR violations.

Textbook

1. C. R. Kothari, "Research Methodology: Methods and Techniques", New Age International Publishers.

Reference Books

1. N. Pandey & K. Dharni, "Intellectual Property Rights", PHI Learning.
2. Ranjit Kumar, "Research Methodology: A Step-by-Step Guide", SAGE Publications.
3. Neeraj Pandey, "Basics of Intellectual Property Rights", PHI Learning.