Course title: Ethics Plagiarism & IPR Issues   **Credit :1**

Course code : 17P1WGE102   **Course Coordinator: Dr Hemant**

Objective:

To provide an insight to the Ph D students on different aspects of protection of inventions and research developments, academic, research and publication ethics .

Course Assessment:

Test -1	15
Test -2	25
Test -3	35
Teacher Assessment (Based on Assignments, ppt and quizzes etc .) Attendance	25
Total	100

Course Outcomes:

CO1. To enable students with basic concepts of philosophy of science, ethics and intellectual property rights for protecting innovations in different sciences

CO2. Able to learn the mechanisms of publications and IP protections and registrations under different classifications

CO3. Able to tackle problems in research misconduct and intervene ethics and inventiveness for the benefit generation and mass utilization

CO4. To enable them for developing the strategies for handling issues related to IP, Ethics and plagiarism

CO5. Able to learn effective research integrity and useful publication for generating future perspectives

CO6. Able to learn different modes of tackling plagiarism and developing academic integrity

Topics	Lecture hrs.
Introduction to philosophy and its nature with scopes in different branches	1
Different types of IPR(Patents, coyrights, Trademark, Tradesecret, ICL,GI,TK and PBR)	2
Rationale of different IPR ,their mechanism of protection and provisions in Law	1
Ethics used in science and research and tools to follow it with case studies	2
Scientific misconduct: Falsification, Fabrication and Plagiarism	
Plagiarism and misuse of Privileged Information	3
Data analysis include Integrity of Data ,Use and Misuse of Data ,Ownership of and Access to Data and Storage and Retention of Data	

COURSE DESCRIPTION

TITLE: RESEARCH METHODOLOGIES INCLUDING QUANTITATIVE METHODS AND COMPUTER APPLICATIONS

COURSE CODE: 18PIWGE101

COURSE CREDIT: 3

COURSE OBJECTIVE: Research scholars are able to develop their understanding on research methods, models and techniques and are able to apply these in their respective research areas.

LEARNING OUTCOME:
At the end of this course, research scholars are able to design and model research problems, identify appropriate techniques which can be applied for analysis and interpret the results for a meaningful understanding.

REVISED COURSE OUTLINE AND STRUCTURE:

MODULE 1

Deptt. of HSS
Contact Hours : 14
Weightage : 35 marks (End module Test :25 marks; Internal marks:10)

1. Introduction to Research
2. Research Objectives and Research Problem
3. Research Design
4. Sampling Designs
5. Data preparation and initial data analysis
6. Qualitative Methods
7. Literature Review and Systematic Literature Review
8. Academic writing and Reference styles

MODULE 2

Deptt. of Mathematics
Contact Hours : 14
Weightage : 35 marks (End module Test :25 marks; Internal marks:10)

1. Basic Elements of Statistics
2. Basic Probability and probability distributions
3. Regression and Chi-square Test
4. Hypothesis Testing
5. Basic of Matrices, Rank of Matrices
6. System of Simultaneous Linear Equations, Gauss Elimination Method
7. Eigenvalue and Eigenvectors of Matrices
8. Numerical Solution of Transcendental Equations
9. Numerical Solution of Simultaneous Equations
10. Linear Programming Problems – Graphical Method, Simplex Method
11. Assignment Problem and Transportation Problem
12. MATLAB Commands and Basic Operations
13. MINITAB – Basics

MODULE 3

Department Specific
Contact Hours : 14
Weightage : 30 marks (End module test: 25 marks; Internal marks : 5)

METHODOLOGY:
The core concepts would be introduced in the class and research scholars are expected to develop their understanding via class room presentations, assignments, case studies and training themselves for software use.

References:

1. Uwe Flick :   Introducing Research Methodology: A Beginner's Guide to Doing a Research Project, Sage Publications

2. Joseph A. Maxwell :   Qualitative Research Design: An Interactive Approach, Sage Publications

3. C. R. Kothari: Research Methodology – Methods and Techniques, New Age International Publishers

4. Deepak Chawla and Neena Sondhi :   Research Methodology – Concepts and Cases, Vikas Publishing House