Research Methodology and IPR

Course Code	23AC1603	Year	III	Semester	II
Course Category	Audit	Branch	ECE	Course Type	Theory
Credits	-	L-T-P	2-0-0	Pre requisites	-
Continuous Internal Evaluation	30	Semester End Evaluation	-	Total Marks	30

Course Outcomes		
Upon successful completion of the course, the student will be able to		BL
CO1	Explain the fundamentals of research, including types, objectives, problem formulation, research design, data interpretation, and report writing.	L2
CO2	**Apply** ethical practices, literature review methods, and technical writing principles in the preparation of research documents.	L3
CO3	Implement creativity and idea generation to design and communicate research ideas relevant to emerging innovations.	L3
CO4	Analyze the scope and legal framework of Intellectual Property Rights (IPR), including patents, licensing, and databases.	L4
CO5	Examine recent developments in IPR and their impact on research, technology, and traditional knowledge systems.	L4

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of Correlations (3:High, 2:Medium, 1:Low)													
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	2						2		2		2		
CO2	3						3		3		3		
CO3	2					1	2		2		2		2
CO4		3				3	3		3		3	3	3
CO5		2					2		2		2		
Avg.	2	3				3	2		2		2	3	3

Syllabus		
Unit No.	Contents	Mapped CO
1	**Introduction**: Meaning of Research, Objectives of Research, Types of Research, Research Approaches. **Research Problem**: What is a Research Problem, Selecting the Problem, Necessity of Defining a problem. **Research Design** –Features of Good Design, Important Concepts related to Research Design, Basic Principles of Experimental Designs.	CO1, CO2
2	**Interpretation and Report Writing**: Meaning of Interpretation, Techniques of Interpretation, Precautions in Interpretation Significance of Report Writing, Different Steps in Writing Report, Layout of a Research Paper, Types of Reports, Oral Presentation, Mechanics of Writing a Research Report, Precautions for Writing Research Reports	CO1, CO2, CO3

3	**Nature of Intellectual Property:** Patents, Designs, Trademarks and Copyright. Process of Patenting and Development: technological research, innovation, patenting, development. International Scenario: International cooperation on Intellectual Property. Procedure for grants of patents, Patenting under PCT	CO2,CO3 CO5
4	**Patent Rights:** Scope of Patent Rights, Licensing and transfer of technology, Patent information and databases, Geographical Indications.	CO2,CO4
5	**New Developments in IPR**: Administration of Patent System. New developments in IPR; IPR of Biological Systems, Computer Software etc, Traditional knowledge Case Studies, IPR and IITs	CO2, CO3, CO5

Learning Recourses
Text Book(s)
1. C.R.Kothari, Research Methodology: Methods and Techniques, 2nd Ed., New Age International Publishers,2014. 2. Halbert, "Resisting Intellectual Property", 1st Ed. Taylor & Francis Ltd, ,2007.
References
1. Ranjit Kumar, "Research Methodology: A Step by Step Guide for beginners" 2nd Edition , 2. 2. Mayall , "Industrial Design", 1st Ed. McGraw Hill,1992.
E-Resources :
1. https://onlinecourses.nptel.ac.in/noc22_ge08 2. https://www.youtube.com/watch?v=GSeeyJVD0JU