



MARRI LAXMAN REDDY INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

Accredited by NAAC with 'A' Grade & Recognized Under Section 2(f) & 12(B) of the UGC act, 1956

COURSE CONTENT

RESEARCH METHODOLOGY & IPR								
I Semester: CSE								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P		C	CIA	SEE
2510001	Foundation	2	0	0	2	40	60	100
Contact Classes: 45	Tutorial Classes: Nil	Practical Classes: Nil			Total Classes: 45			
Prerequisites: None								

Course Overview:

This is a foundational course that equips students with the principles and practices of conducting systematic research as well as understanding the legal and ethical aspects of intellectual property.

Course Objectives:

1. To understand the research problem.
2. To know the literature studies, plagiarism and ethics.
3. To get the knowledge about technical writing.
4. To analyze the nature of intellectual property rights and new developments.
5. To know the patent rights.

Course Outcomes: After Completion of the Course, Students should be able to

1. Identify research problems using systematic approaches to data collection, analysis, and instrumentation for solving real-world challenges in science and engineering.
2. Analyze literature effectively while adhering to research ethics to support academic writing and plagiarism-free publications.
3. Develop structured research proposals and technical reports for applications in academic presentations, project funding, and professional communication.
4. Examine intellectual property systems, including patents, copyrights, and designs, to apply them in innovation protection and technology commercialization.
5. Evaluate case studies on emerging IPR issues such as biological systems, software, and traditional knowledge to support entrepreneurship and multidisciplinary research.

UNIT - I: Meaning of research problem, Sources of research problem, Criteria Characteristics of a good research problem, Errors in selecting a research problem, Scope and objectives of research problem. Approaches of investigation of solutions for research problem, data collection, analysis, interpretation, Necessary instrumentations.

UNIT - II: Effective literature studies approaches, analysis, Plagiarism, Research ethics.

UNIT - III: Effective technical writing, how to write report, Paper Developing a Research Proposal, Format of research proposal, a presentation and assessment by a review committee

UNIT - IV: Nature of Intellectual Property: Patents, Designs, Trade 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.

UNIT - V: Patent Rights: Scope of Patent Rights. Licensing and transfer of technology. Patent information and databases. Geographical Indications. 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.

TEXT BOOKS:

1. Stuart Melville and Wayne Goddard, "Research methodology: an introduction for science & engineering students"
2. C.R. Kothari, Research Methodology, methods & techniques, 2nd edition, new age international publishers.

REFERENCE BOOKS:

1. Ranjit Kumar, 2nd Edition, "Research Methodology: A Step-by-Step Guide for beginners"
2. Halbert, "Resisting Intellectual Property", Taylor & Francis Ltd ,2007.
3. Mayall, "Industrial Design", McGraw Hill, 1992.
4. Niebel, "Product Design", McGraw Hill, 1974.
5. Asimov, "Introduction to Design", Prentice Hall, 1962.
6. Robert P. Merges, Peter S. Menell, Mark A. Lemley, "Intellectual Property in New Technological Age", 2016.
7. T. Ramappa, "Intellectual Property Rights Under WTO", S. Chand, 2008.

ELECTRONIC RESOURCES:

1. <https://www.coursera.org/learn/research-methodology>
2. <https://www.edx.org/learn/research-methods>
3. <https://www.sanfoundry.com/certification/research-methodology-certification/>
4. <https://www.udemy.com/topic/research-methodology/>

MATERIALS ONLINE:

1. Course template
2. Tutorial question bank
3. Tech talk and Concept Video topics
4. Open-ended experiments
5. Definitions and terminology
6. Assignments
7. Model question paper – I
8. Model question paper – II
9. Lecture notes
10. E-Learning Readiness Videos (ELRV)