COURSE CONTENT

Research Methodology and IPR								
I Year I Semester: M.Tech (CAD/CAM)								
Course Code	Category	Hours/ Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
2215502	Advanced	2	0	0	2	40	60	100
Contact Classes: 32	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes:32		
Prerequisites: None								

Course Overview:

This subject explains how to identify a research problem, collect data, analyze results, and use proper tools for research work. It teaches literature study methods, research ethics, plagiarism awareness, and how to write reports and research proposals. It introduces Intellectual Property Rights (IPR) such as patents, copyrights, designs, and the patenting process. It also covers patent rights, technology transfer, patent databases, and new IPR developments related to software, biology, and traditional knowledge.

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. Understand research problem formulation..
2. Analyze research related information and plagiarism
3. Format of research proposal with presentation
4. Understanding the nature of intellectual property.
5. Understand patent rights.

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.

TEXTBOOKS:

1. Stuart Melville and Wayne Goddard, "Research methodology: an introduction for science & engineering students"
2. Wayne Goddard and Stuart Melville, "Research Methodology: An Introduction"

REFERENCEBOOKS:

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://nptel.ac.in/courses/121106007**
2. **https://onlinecourses.nptel.ac.in/noc23_ge36/preview**
3. **https://onlinecourses.swayam2.ac.in/e-learning/preview/ntr25_ed27**

MATERIALS ONLINE:

1. Course template
2. Assignments
3. Model question paper–I
4. Model question paper–II
5. Lecture notes
6. E-Learning Readiness Videos (ELRV)