RESEARCH METHODOLOGY AND IPR

III Semester: M.Tech (Embedded Systems)

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
BCSB31	Core	2	-	-	2	30	70	100
Contact Classes: 45	Tutorial Classes: 15	Practical Classes: Nil				Total Classes: 60		

COURSE OBJECTIVES:

The course should enable the students to:

I. Identify an appropriate research problem in their interesting domain.
II. Understand ethical issues Understand the Preparation of a research project thesis report.
III. Understand the Preparation of a research project thesis report
IV. Understand the law of patent and copyrights.
V. Understand the Adequate knowledge on IPR

COURSE OUTCOMES (COs):

CO 1: Understand the research problem and research process.
CO 2: Understand research ethics .
CO 3: Prepare a well-structured research paper and scientific presentations
CO 4: Explore on various IPR components and process of filing.
CO5 : Understand the adequate knowledge on patent and rights

COURSE LEARNING OUTCOMES (CLOs):

1. Understand the characteristics, objects of a good research problem.
2. Understand the selection, approaches of research problem.
3. Understand concepts of data collection, analysis.
4. Understand the principles of ethics and ethical issues in science and engineering.
5. Understand the analysis Plagiarism
6. Understand research ethic concepts .
7. Understand significance, effective technical writing and report.
8. Paper developing a research proposal and report.
9. Understand writing a research report as per format.
10. Report presentation and assessment by a review committee..
11. Understand the techniques of interpretation, and making scientific presentation .
12. Understand the patent laws, patent and searching process.
13. Understand International cooperation on intellectual property
14. Understand the patent laws, patent and searching process, patent data base.
15. Understand the patent rights and transfer of technology.
16. Study of new developments in IPR.

UNIT-I	MEANING OF RESEARCH PROBLEM	Classes: 09

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	LITERATURE STUDIES	Classes: 09
Effective literature studies approaches, analysis Plagiarism, and Research ethics.		
UNIT-III	**TECHNICAL WRITING**	**Classes: 09**
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	**RESEARCH PROPOSAL**	**Classes: 09**
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 AND NEW DEVELOPMENTS IN IPR**	**Classes: 09**
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. Stuart Melville and Wayne Goddard, " Research methodology: an introduction for science & engineering students"
3. Ranjit Kumar, 2nd Edition, " Research Methodology: A Step by Step Guide for beginners".