

## RESEARCH METHODOLOGY AND IPR

<b>III Semester: M.Tech (CAD/CAM)</b>								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
BCSB31	Core	L	T	P	C	CIA	SEE	Total
		2	-	-	2	30	70	100
<b>Contact Classes: 45</b>		<b>Tutorial Classes: 15</b>		<b>Practical Classes: Nil</b>			<b>Total Classes: 60</b>	
<p><b>COURSE OBJECTIVES:</b>  <b>The course should enable the students to:</b></p> <ol style="list-style-type: none"> <li>I. Identify an appropriate research problem in their interesting domain.</li> <li>II. Understand ethical issues Understand the Preparation of a research project thesis report.</li> <li>III. Understand the Preparation of a research project thesis report</li> <li>IV. Understand the law of patent and copyrights.</li> <li>V. Understand the Adequate knowledge on IPR</li> </ol> <p><b>COURSE OUTCOMES (COs):</b></p> <p>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</p> <p><b>COURSE LEARNING OUTCOMES (CLOs):</b></p> <ol style="list-style-type: none"> <li>1. Understand the characteristics, objects of a good research problem.</li> <li>2. Understand the selection, approaches of research problem.</li> <li>3. Understand concepts of data collection, analysis.</li> <li>4. Understand the principles of ethics and ethical issues in science and engineering.</li> <li>5. Understand the analysis Plagiarism</li> <li>6. Understand research ethic concepts .</li> <li>7. Understand significance, effective technical writing and report.</li> <li>8. Paper developing a research proposal and report.</li> <li>9. Understand writing a research report as per format.</li> <li>10. Report presentation and assessment by a review committee..</li> <li>11. Understand the techniques of interpretation, and making scientific presentation .</li> <li>12. Understand the patent laws, patent and searching process.</li> <li>13. Understand International cooperation on intellectual property</li> <li>14. Understand the patent laws, patent and searching process, patent data base.</li> <li>15. Understand the patent rights and transfer of technology.</li> <li>16. Study of new developments in IPR.</li> </ol>								
<b>UNIT-I</b>	<b>MEANING OF RESEARCH PROBLEM</b>						<b>Classes: 09</b>	
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.								

<b>UNIT-II</b>	<b>RESEARCH ETHICS</b>	<b>Classes: 09</b>
Effective literature studies approaches, analysis Plagiarism, and Research ethics.		
<b>UNIT-III</b>	<b>RESEARCH PROPOSAL</b>	<b>Classes: 09</b>
Effective technical writing, how to write report, Paper Developing a Research Proposal. Format of research proposal, a presentation and assessment by a review committee.		
<b>UNIT-IV</b>	<b>PATENTING</b>	<b>Classes: 09</b>
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.		
<b>UNIT-V</b>	<b>PATENT RIGHTS</b>	<b>Classes: 09</b>
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.		
<b>Text Books:</b>		
<ol style="list-style-type: none"> <li>1. Stuart Melville and Wayne Goddard, “ Research methodology: an introduction for science &amp; engineering students”</li> <li>2. Stuart Melville and Wayne Goddard, “ Research methodology: an introduction for science &amp; engineering students”</li> <li>3. Ranjit Kumar, 2<sup>nd</sup> Edition, “ Research Methodology: A Step by Step Guide for beginners”.</li> </ol>		