

18MLC01	RESEARCH METHODOLOGY AND IPR	L	T	P	C
		3	0	0	3
COURSE OBJECTIVES:					
1.	To develop the subject of their research, encourage the formation of a higher level of trained intellectual ability, critical analysis, rigor, and independence of thought, foster individual judgment, and skill in the application of research theory and methods, and develop skills required in writing research proposals, reports and dissertation.				
UNIT I	INTRODUCTION TO RESEARCH	9	+	0	
Meaning of research problem, Sources of the research problem, Criteria Characteristics of a good research problem, Errors in selecting a research problem, Scope and objectives of the research problem. Approaches to investigation of solutions for research problem, data collection, analysis, interpretation, Necessary instrumentations.					
UNIT II	EFFECTIVE LITERATURE STUDIES APPROACHES, ANALYSIS	9	+	0	
Developing the theoretical framework of the research - Developing operational statements of the problem - Criteria for evaluating research approach - Hypotheses: Parametric and non-parametric testing- Establishing the reliability and validity of findings with literature review and experiments – documentation, Plagiarism, Research ethics.					
UNIT III	EFFECTIVE TECHNICAL WRITING, HOW TO WRITE REPORT, PAPER	9	+	0	
Developing a Research Proposal, Format of a research proposal, a presentation and assessment by a review committee					
UNIT IV	NATURE OF INTELLECTUAL PROPERTY	9	+	0	
Patents, Designs, Trade and Copyright. The 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 IPR	9	+	0	
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.					
Total = 45 Periods					
COURSE OUTCOMES:					
<i>Upon completion of this course, the students will be able to:</i>					
CO1	:	<i>Understand research problem formulation.</i>			
CO2	:	<i>Analyze research-related information</i>			
CO3	:	<i>Follow research ethics</i>			
CO4	:	<i>Understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.</i>			
CO5	:	<i>Understand that IPR protection provides an incentive to inventors for further research work and investment in R & D, which leads to the creation of new and better products, and in turn brings about, economic growth and social benefits.</i>			
TEXT BOOKS:					
1.	Stuart Melville and Wayne Goddard, "Research methodology: an introduction for science & engineering students"				
2.	Wayne Goddard and Stuart Melville, "Research Methodology: An Introduction"				
3.	Ranjit Kumar, 2 nd Edition, "Research Methodology: A Step by Step Guide for beginners"				
4.	Halbert, "Resisting Intellectual Property", Taylor & Francis Ltd, 2007.				
REFERENCE BOOKS:					

1.	Mayall, "Industrial Design", McGraw Hill, 1992.
2.	Niebel, "Product Design", McGraw Hill, 1974.
3.	Asimov, "Introduction to Design", Prentice Hall, 1962.
4.	Robert P. Merges, Peter S. Menell, Mark A. Lemley, "Intellectual Property in New Technological Age", 2016.
5.	T. Ramappa, "Intellectual Property Rights Under WTO", S. Chand, 2008

PO CO	CO Statement	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	<i>Understand research problem formulation.</i>					1	1	1	1	1	2	1
CO2	<i>Analyze research-related information</i>					3	1	1	1	1	1	1
CO3	<i>Follow research ethics</i>					1	1	1	1	3	1	1
CO4	<i>Understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.</i>					1	3	1	1	1	1	1
CO5	<i>Understand that IPR protection provides an incentive to inventors for further research work and investment in R & D, which leads to the creation of new and better products, and in turn brings about, economic growth and social benefits.</i>					1	3	1	1	1	2	2