

<b>COURSE TITLE</b>	<b>RESEARCH METHODOLOGY AND IPR</b>
<b>COURSE CODE</b>	<b>01SL1210</b>
<b>COURSE CREDITS</b>	<b>2</b>

**Objective:**

- 1 To impart the knowledge of various techniques of research.
- 2 To impart the knowledge for writing various statements and research paper .
- 3 To understand how to conduct literature review and organize references.
- 4 To impart the knowledge about copyright, IPR patent and plagiarism.
- 5 To understand the fundamental of research and its types
- 6 To impart the knowledge of various techniques of research
- 7 To impart the knowledge for writing various statements and research paper
- 8 To understand how to conduct literature review and organize references
- 9 To impart the knowledge about copyright, IPR patent and plagiarism

**Course Outcomes:** After completion of this course, student will be able to:

- 1 Apply appropriate research methodologies to identify research problems, formulate objectives, and conduct structured literature reviews using library and electronic databases.
- 2 Evaluate the authenticity and credibility of journals, proceedings, and books using quality indices such as Impact Factor, H-index, G-index, i10-index, and Scimago journal rank indicators.
- 3 Apply standard referencing styles and academic writing tools (MS Word/LaTeX) to organize bibliographies and compose well-structured thesis chapters and research papers.
- 4 Analyze the various forms of Intellectual Property Rights (copyright, patents, trademarks) and evaluate their applicability to engineering innovations, including plagiarism detection and citation practices for copyrighted material.

**Pre-requisite of course:**NA

**Teaching and Examination Scheme**

<b>Theory Hours</b>	<b>Tutorial Hours</b>	<b>Practical Hours</b>	<b>ESE</b>	<b>IA</b>	<b>CSE</b>	<b>Viva</b>	<b>Term Work</b>
2	0	0	0	0	0	25	25

<b>Contents : Unit</b>	<b>Topics</b>	<b>Contact Hours</b>
1	<b>Research Methodology and skills</b> Definition, types, various methods to identify research problem,, skills for research, Review of Research Literature: Purpose and use of literature review,, locating relevant information, use of library & electronic databases,, preparation & presentation of literature review, research article reviews,, theoretical models and frame work., Identification of gaps in research,, formulation of research problem, definition of research objectives.	14
2	<b>Quality indices &amp; Ethics in research</b> Journal quality indices: Impact factor,, Immediacy index, Eigen factor,, Scimago journal rank indicator., Author quality indices: H index, G- Index, i10 index, HB index,	6
3	<b>Thesis writing</b> Details and sequence of the chapters, Reference,, Bibliography their stylesin writing., Use of computer programs like MS word or Latex for thesis writing.	4
4	<b>Intellectual Property Rights and plagiarism</b> Fundamentals, Forms of IPR: copyright, patents, trademarks, copyright., Patent filing procedure in India. Plagiarism,, use of software to evaluate the plagiarism for the report written,, how to do citation for copyrighted material in the report.	4
<b>Total Hours</b>		<b>28</b>

**Textbook :**

- 1 Research Methodology: Methods and Techniques,, C.R. Kothari,, New age Publishers, 2004
- 2 Essentials of Research Design and methodology, Geoffrey R. Marczyk, David DeMatteo, David Festinge,, John Wiley & Sons, 2005

**References:**

- 1 Research methodology: an introduction for science & amp; engineering students, Research methodology: an introduction for science & amp; engineering students, Stuart Melville and Wayne Goddard, Juta & Company, 1996
- 2 Research Methodology: A Step-By-Step Guide for Beginners , Research Methodology: A Step-By-Step Guide for Beginners , Ranjit Kumar, Sage Publications Ltd , 2010
- 3 Intellectual Property in the New Technological Age 2019: Vol II Copyights, Trademarks and State IP Protections , Intellectual Property in the New Technological Age 2019: Vol II Copyights, Trademarks and State IP Protections , Peter Menell, Mark Lemley, Robert P. Merges, Clause 8 Publishing , 2019
- 4 Intellectual Property Rights Under Wto: Tasks Before India , Intellectual Property Rights Under Wto: Tasks Before India , T. Ramappa, S. Chand, 2008
- 5 Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, John W. Creswell and J. David Creswell, SAGE Publications, Inc, 2017

**Suggested Theory Distribution:**

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember / Knowledge	Understand	Apply	Analyze	Evaluate	Higher order Thinking / Creative
5.00	10.00	20.00	35.00	20.00	10.00

**Instructional Method:**

- 1 Use of Learning Management system like canvas
- 2 Demonstration through power point presentation and videos and lectures
- 3 Brainstorming and group discussion sessions
- 4 Collaborative learning

**Supplementary Resources:**

- 1 <http://www.elsevier.com/online-tools/scopus>
- 2 <http://computationalengineering.mit.edu/research/methodology>
- 3 <http://www.ieee.org/index.html>
- 4 <http://www.asce.org/>
- 5 <http://www.asme.org/>