

INSTITUTE	FACULTY OF TECHNOLOGY
PROGRAM	MASTER OF TECHNOLOGY in ELECTRICAL ENGINEERING
SEMESTER	2
COURSE TITLE	RESEARCH METHODOLOGY AND IPR
COURSE CODE	01SL1210
COURSE CREDITS	2

Objective:

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

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

- 1 To understand the research and its types
- 2 To differentiate between journal/proceeding and books and its authenticity
- 3 To identify the quality indices for Journal & Authors
- 4 To differentiate the forms of IPR and its applications to engineering.

Pre-requisite of course:NA

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
2	0	0	0	0	0	25	25

Contents : Unit	Topics	Contact Hours
1	Research Methodology and skills 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	Quality indices & Ethics in research 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

Contents : Unit	Topics	Contact Hours
3	Thesis writing Details and sequence of the chapters, Reference,, Bibliography their styles in writing., Use of computer programs like MS word or Latex for thesis writing.	4
4	Intellectual Property Rights and plagiarism 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
Total Hours		28

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 Copyrights, Trademarks and State IP Protections , Intellectual Property in the New Technological Age 2019: Vol II Copyrights, 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/>