Dr Ambedkar Institute of Technology, Bengaluru-56
Department of Electrical and Electronics Engineering
Scheme and Syllabus - CBCS –2022 -2023

Course Title	**RESEARCH METHODOLOGY & INTELLECTUAL PROPERTY RIGHTS**						
Course Code	**21RMT506**						
Category	Ability Enhancement Course(AEC)						
Scheme and Credits	No. of Hours/Week					Total teaching hours	Credits
	L	T	P	SS	Total		
	02	**00**	**00**	**00**	**02**	**25**	**02**
CIE Marks: 50 40+05(A)+05(GA)	**SEE Marks: 50**		**Total Max. marks=100**		**Duration of SEE: 02 Hours**		

COURSE OBJECTIVE:

1. Understand the knowledge on basics of research and its types.
2. Learn the concept of Literature Review and technical Reading.
3. Understanding the importance of giving credit to citations and attributions.
4. Learn ethics in Engineering Research.
5. Discuss the concepts of Intellectual Property Rights in engineering.

COURSE CONTENT:

UNIT I **5 hours**

Introduction: Meaning of Research, Objectives of Engineering Research, and Motivation in Engineering Research, Research Process, Types of Engineering Research, Finding and Solving a Worthwhile Problem.

Ethics in Engineering Research, Ethics in Engineering Research Practice, Types of Research Misconduct, Ethical Issues Related to Authorship. Copyright Infringements. Copyright Infringement is a Criminal Offence. Copyright Registration.

UNIT II **5 hours**

Literature Review and Technical Reading: New and Existing Knowledge, Analysis and Synthesis of Prior Art Bibliographic Databases, Web of Science, Google and Google Scholar, Effective Search: The Way Forward Introduction to Technical Reading Conceptualizing Research, Critical and Creative Reading, Taking Notes While Reading, Reading Mathematics and Algorithms, Reading a Datasheet.

Attributions and Citations: Giving Credit Wherever Due, Citations: Functions and Attributes, Impact of Title and Keywords on Citations, Knowledge Flow through Citation, Citing Datasets, Styles for Citations, Acknowledgments and Attributions, What Should Be Acknowledged, Acknowledgments in, Books Dissertations, Dedication or Acknowledgments.

UNIT III **5 hours**

Introduction to Intellectual Property: Role of IP in the Economic and Cultural Development of the Society, IP Governance, IP as a Global Indicator of Innovation, Origin of IP History of IP in India. Major Amendments in IP Laws and Acts in India.

Patents: Conditions for Obtaining a Patent Protection, To Patent or Not to Patent an Invention. Rights Associated with Patents. Enforcement of Patent Rights. Inventions Eligible for Patenting. Non-

Patentable Matters. Patent Infringements. Avoid Public Disclosure of an Invention before Patenting.

Process of Patenting. Prior Art Search. Choice of Application to be Filed. Patent Application Forms. Jurisdiction of Filing Patent Application. Publication. Pre-grant Opposition. Examination. Grant of a Patent. Validity of Patent Protection. Post-grant Opposition. Commercialization of a Patent. Need for a Patent Attorney/Agent. Can a Worldwide Patent be Obtained. Do I Need First to File a Patent in India? Patent Related Forms. Fee Structure. Types of Patent Applications. Commonly Used Terms in Patenting. National Bodies Dealing with Patent Affairs. Utility Models.

UNIT IV **5 hours**

Trademarks: Eligibility Criteria. Who Can Apply for a Trademark. Acts and Laws. Designation of Trademark Symbols. Classification of Trademarks. Registration of a Trademark is Not Compulsory. Validity of Trademark. Types of Trademark Registered in India. Trademark Registry. Process for Trademarks Registration. Prior Art Search. Famous Case Law: Coca-Cola Company vs. Bisleri International Pvt. Ltd.

UNIT V **5 hours**

Industrial Designs: Eligibility Criteria. Acts and Laws to Govern Industrial Designs. Design Rights. Enforcement of Design Rights. Non-Protectable Industrial Designs India. Protection Term. Procedure for Registration of Industrial Designs. Prior Art Search. Application for Registration. Duration of the Registration of a Design. Importance of Design Registration. Cancellation of the Registered Design. Application Forms. Classification of Industrial Designs. Designs Registration Trend in India. International Treaties. Famous Case Law: Apple Inc. vs. Samsung Electronics Co.

TEACHING LEARNING PROCESS: Chalk and Talk, power point presentation, animations, videos

COURSE OUTCOMES: On completion of the course, student should be able to:

CO1: Understand the meaning of engineering research.
CO2: Recognize the procedure of literature review and technical reading.
CO3: Know the fundamentals of patent laws and drafting procedure.
CO4: Understand the subject matters of copyright laws and trademarks.
CO5: Realize the basic principles of design rights.

TEXT BOOKS

1. Dipankar Deb, Rajeeb Dey, Valentina E. Balas "Engineering Research Methodology", ISSN 1868-4394 ISSN 1868-4408 (electronic), Intelligent Systems Reference Library, ISBN 978-981-13-2946-3 ISBN 978-981-13-2947-0 (eBook), https://doi.org/10.1007/978-981-13-2947-0.
2. Intellectual Property A Primer for Academia by Prof. Rupinder Tewari Ms. Mamta Bhardwaj.

REFERENCE BOOKS

1. David V. Thiel "Research Methods for Engineers" Cambridge University Press, 978-1-107-03488- 4.
2. Intellectual Property Rights by N.K.Acharya Asia Law House 6th Edition. ISBN: 978-93-81849-30-9.

ONLINE RESOURCES

1. https://www.slideshare.net/indravi/intellectual-property-rights-ipr-in-engineering
2. http://bspublications.net/downloads/050e6a699258c8_IPR_chapter1.pdf

SCHEME FOR EXAMINATIONS

(i) The question paper will have ten full questions carrying equal marks.
(ii) Each full question will be for 10 marks.
(iii) There will be two full questions from each module.
(iv) Each full question will have sub-questions (subject to a maximum of four sub-questions)
(v) The students have to answer five full questions, selecting one full question from each module.

MAPPING of COs with POs and PSOs

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1		1				2		3		1				3	1
CO2		1				2		3		1				3	1
CO3		1				2		3		1				3	1
CO4		1				2		3		1				3	1
CO5		1				2		3		1				3	1

Strength of correlation: Low-1, Medium- 2, High-3