



FACULTY OF ENGINEERING & TECHNOLOGY

First Year Master of Engineering

Course Code: 102300111

Course Title: Research Methodology and IPR

Type of Course: Mandatory Course

Course Objectives: To give an overview of the research methodology and explain the technique of defining a research problem. To explain various forms of the intellectual property, its relevance and business impact in the changing global business environment.

Teaching & Examination Scheme:

| Contact hours per week | | | Course Credits | Examination Marks (Maximum / Passing) | | | | |
|------------------------|----------|-----------|----------------|---------------------------------------|---------|----------|---------|----------|
| Lecture | Tutorial | Practical | | Internal | | External | | Total |
| | | | | Theory | J/V/P* | Theory | J/V/P* | |
| 2 | 0 | 0 | 2 | NA | 20 / 10 | NA | 80 / 40 | 100 / 50 |

* J: Jury; V: Viva; P: Practical

Detailed Syllabus:

| Sr. | Contents | Hours |
|-----|---|-------|
| 1 | Unit 1: 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 | 4 |
| 2 | Unit 2: Effective literature studies approaches, analysis Plagiarism, Research ethics, | 2 |
| 3 | Unit 3: Effective technical writing, how to write report, Paper Developing a Research Proposal, Format of research proposal, a presentation and assessment by a review committee | 3 |
| 4 | Unit 4: 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 | 5 |
| 5 | Unit 5: Patent Rights: Scope of Patent Rights. Licensing and transfer of technology. Patent information and databases. Geographical Indications. | 3 |
| 6 | Unit 6: 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. | 3 |



Suggested Specification table with Marks (Theory) (Revised Bloom's Taxonomy):

| Distribution of Theory Marks | | | | | | R: Remembering; U: Understanding; A: Application, N: Analyze; E: Evaluate; C: Create |
|------------------------------|-----|-------|-----|----|----|---|
| R | U | A | N | E | C | |
| 50% | 20% | Click | 30% | -- | -- | |

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference 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, 2nd Edition, "Research Methodology: A Step by Step Guide for beginners"
- 4 Halbert, "Resisting Intellectual Property", Taylor & Francis Ltd ,2007
- 5 Mayall, "Industrial Design", McGraw Hill, 1992.
- 6 Niebel, "Product Design", McGraw Hill, 1974.
- 7 Robert P. Merges, Peter S. Menell, Mark A. Lemley, " Intellectual Property in New Technological Age", 2016.
- 8 T. Ramappa, "Intellectual Property Rights Under WTO", S. Chand, 2008.

Course Outcomes (CO):

| Sr. | Course Outcome Statements | %weightage |
|------|---|------------|
| CO-1 | Understand research problem formulation. | 10 |
| CO-2 | Analyze research related information | 15 |
| CO-3 | Understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity. | 25 |
| CO-4 | Understanding that when IPR would take such important place in growth of individuals & nation, it is needless to emphasis the need of information about Intellectual Property Right to be promoted among students in general & engineering in particular. | 25 |
| CO-5 | Understand that IPR protection provides an incentive to inventors for further research work and investment in R & D, which leads to creation of new and better products, and in turn brings about, economic growth and social benefits. | 25 |