



ADHIYAMAAN COLLEGE OF ENGINEERING

(Autonomous)

Affiliated to Anna University – Chennai & Approved by AICTE – New Delhi.
Accredited by NAAC & NBA - UGC, New Delhi

| PG / Ph.D Programme– Regulations 2015 | | | | | | | | |
|---------------------------------------|----------------------|--------------|---|---|---------|---------------|----|-----|
| Common To All Branches | | | | | | | | |
| Course Code | Course Title | Hours /Weeks | | | Credits | Maximum Marks | | |
| | | L | T | P | | C | CA | EA |
| 115PCGE01 | RESEARCH METHODOLOGY | 3 | 0 | 0 | 3 | 40 | 60 | 100 |

OBJECTIVE(S):

To impart knowledge and skills required for research methodology:

- Problem formulation, analysis and solutions.
- Technical paper writing / presentation without violating professional ethics
- Patent drafting and filing patents.

UNIT - I RESEARCH METHODOLOGY:

9

Objectives and motivation of research - Types of research - Research approaches - Significance of research - Research methods verses methodology - Research and scientific method - Importance of research methodology - Research process - Approaches of investigation of solutions for research problem, data collection, analysis, interpretation, necessary instrumentations- Criteria of good research. Defining the research problem: Definition of research problem - Problem formulation - Necessity of defining the problem - Technique involved in defining a problem.

UNIT-II LITERATURE SURVEY AND DATA COLLECTION:

9

Importance of literature survey - Sources of information - Assessment of quality of journals and articles - Information through internet. Effective literature studies approaches, analysis, plagiarism, and research ethics. Data - Preparing, Exploring, examining and displaying.

UNIT – III RESEARCH DESIGN AND ANALYSIS

9

Meaning of research design - Need of research design - Different research designs - Basic principles of experimental design - Developing a research plan - Design of experimental set-up - Use of standards and codes. Overview of Multivariate analysis, Hypotheses testing and Measures of Association. Presenting Insights and findings using written reports and oral presentation.

UNIT - IV INTELLECTUAL PROPERTY RIGHTS (IPR)

9

Nature of Intellectual Property: Patents, Designs, Trade and Copyright. Process of Patenting and Development: technological research, innovation, patenting, development. Role of WIPO and WTO in IPR establishments, Right of Property, Common rules of IPR practices, Types and Features of IPR Agreement, Trademark, Functions

Dr. M.G.R. Nagar, Hosur – 635 130, Krishnagiri (Dt), Tamil Nadu, India. Phone: Office: 04344 – 260570, 261001-3, 261034. Fax: 04344 – 260573 Website : www.adhiyamaan.ac.in E-mail : principal@adhiyamaan.ac.in


PRINCIPAL
Adhiyamaan College of Engineering (Autonomous)
Dr. M.G.R. Nagar, HOSUR - 635 109



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of UNESCO in IPR maintenance.

UNIT - V PATENT RIGHTS (PR)

9

Patent Rights: Scope of Patent Rights. Licensing and transfer of technology. Patent information and databases. Geographical Indications. New Developments in IPR: Administration of Patent System, IPR of Biological Systems, Computer Software etc. Traditional knowledge Case Studies, IPR and IITs. Licenses, Licensing of related patents, patent agents, Registration of patent agents.

TOTAL: 45 Hours

COURSEOUTCOMES:

CO1: Ability to formulate research problem

CO2: Ability to carry out research analysis

CO3: Ability to follow research ethics

CO4: Ability to understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity

CO5: Ability to understand about IPR and filing patents in R & D.

REFERENCES:

1. Peter S. Menell, Mark A. Lemley, Robert P. Merges, "Intellectual Property in the New Technological "Vol. I Perspectives, 2021.
2. Laura R. Ford, "The Intellectual Property of Nations: Sociological and Historical Perspectives on a Modern Legal Institution Paperback –2021.
3. R. Ganesan, "Research Methodology for Engineers", MJP Publishers, Chennai, 2011.
4. RatanKhananabis and SuvasisSaha, "Research Methodology", Universities Press, Hyderabad, 2015.
5. Cooper Donald R, Schindler Pamela S and Sharma JK, "Business Research Methods", Tata McGraw Hill Education, 11e (2012).
6. Catherine J. Holland, "Intellectual property: Patents, Trademarks, Copyrights, Trade Secrets", Entrepreneur Press, 2007.
7. David Hunt, Long Nguyen, Matthew Rodgers, "Patent searching: tools & techniques", Wiley, 2007.
8. The Institute of Company Secretaries of India, Statutory body under an Act of parliament, "Professional Programme Intellectual Property Rights, Law and practice", September 2013.
9. Ranjit Kumar, 2nd Edition, "Research Methodology: A Step by Step Guide for beginners" 2010

Dr. M.G.R. Nagar, Hosur – 635 130, Krishnagiri (Dt), Tamil Nadu, India. Phone: Office: 04344 – 260570, 261001-3, 261034. Fax: 04344 – 260573 Website : www.adhiyamaan.ac.in E-mail : principal@adhiyamaan.ac.in



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| Course Name | CO'S | CO-PO MAPPING | | | | | | | | | | | |
|-------------------------|------|--|-----|------|------|------|-----|-----|-----|-----|------|------|------|
| | | Program outcomes(Washington Accord Attributes) | | | | | | | | | | | |
| | | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| RESEARCH METHODOLOGY | CO1 | - | 3 | 1 | 2 | 3 | - | - | - | - | - | - | 1 |
| | CO2 | - | 1 | 1 | 2 | 3 | - | - | - | - | - | - | 1 |
| | CO3 | - | 1 | 1 | 2 | 1 | - | - | - | - | - | - | 1 |
| | CO4 | - | 1 | 1 | 2 | 3 | - | - | - | - | - | - | 1 |
| | CO5 | - | 1 | 1 | 2 | 3 | - | - | - | - | - | - | 1 |
| AVERAGE | | - | 1.4 | 1.00 | 2.00 | 2.60 | - | - | - | - | - | - | 1.00 |

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