


ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES (AUTONOMOUS)  
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING - CURRICULUM  
REGULATIONS – R19

1 <sup>st</sup> Year													
Semester - I													
Course Code	Title of the course	Category	Periods						Sessional Marks	Semester end Exam marks	Total Marks	Credits	
			L	T	P	E	O	Total					
EEE111	Engineering Mathematics – I	BS	3	0	0	1	6	10	40	60	100	3	
EEE112	Engineering Physics	BS	3	0	0	1	4	8	40	60	100	3	
EEE113	Engineering Chemistry	BS	3	0	0	1	4	8	40	60	100	3	
EEE114	Engineering Drawing	ES	2	0	3	1	2	8	40	60	100	3.5	
EEE115	Digital Logic Design	PC	2	1	0	1	5	9	40	60	100	3	
EEE116	Engineering Physics Laboratory	BS	0	0	3	0	1	4	50	50	100	1.5	
EEE117	Engineering Chemistry Laboratory	BS	0	0	3	0	1	4	50	50	100	1.5	
EEE118	Engineering Workshop	ES	0	0	3	0	1	4	50	50	100	1.5	
EEE119	Human Values and Professional Ethics (Mandatory non-credit course)	HS	3	0	0	0	1	4	50	0	50	-	
<b>Total</b>			<b>16</b>	<b>1</b>	<b>12</b>	<b>5</b>	<b>25</b>	<b>59</b>	<b>400</b>	<b>450</b>	<b>850</b>	<b>20</b>	

Semester - II													
Course Code	Title of the course	Category	Periods						Sessional Marks	Semester end Exam marks	Total Marks	Credits	
			L	T	P	E	O	Total					
EEE121	Engineering Mathematics-II	BS	3	0	0	1	6	10	40	60	100	3	
EEE122	Communicative English	HS	3	0	0	1	3	7	40	60	100	3	
EEE123	Basics of Electronics Engineering (BEE)	ES	3	0	0	1	5	9	40	60	100	3	
EEE124	Fundamentals of Electrical Engineering (FEE)	ES	2	1	0	1	5	9	40	60	100	3	
EEE125	Problem solving with C	ES	3	0	0	0	3	6	40	60	100	3	
EEE126	Language Laboratory	HS	0	0	3	0	1	4	50	50	100	1.5	
EEE127	Problem solving with C- Laboratory	ES	0	0	3	0	3	6	50	50	100	1.5	
EEE128	Environmental Science (Mandatory non-credit course)	BS	3	0	0	0	1	4	50	0	50	-	
<b>Total</b>			<b>17</b>	<b>1</b>	<b>6</b>	<b>4</b>	<b>27</b>	<b>55</b>	<b>350</b>	<b>400</b>	<b>750</b>	<b>18</b>	

  
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2 <sup>nd</sup> Year												
Semester - I												
Course Code	Title of the course	Category	Periods						Sessional Marks	Semester end Exam marks	Total Marks	Credits
			L	T	P	E	O	Total				
EEE211	Engineering Mathematics – III	BS	3	0	0	1	5	9	40	60	100	3
EEE212	Engineering Mechanics & Strength of Materials	ES	2	1	0	1	5	9	40	60	100	3
EEE213	Network Theory	PC	2	1	0	1	5	9	40	60	100	3
EEE214	Electrical Measurements	PC	3	0	0	1	5	9	40	60	100	3
EEE215	Electronics Circuits and Analysis	PC	3	0	0	1	4	8	40	60	100	3
EEE216	Microprocessors and Micro Controllers	PC	3	0	0	1	4	8	40	60	100	3
EEE217	Networks & Measurements Laboratory	PC	0	0	3	0	1	4	50	50	100	1.5
EEE218	Electronics Laboratory -I	PC	0	0	3	0	1	4	50	50	100	1.5
<b>Total</b>			<b>16</b>	<b>2</b>	<b>6</b>	<b>6</b>	<b>30</b>	<b>60</b>	<b>340</b>	<b>460</b>	<b>800</b>	<b>21</b>

Semester - II												
Course Code	Title of the course	Category	Periods						Sessional Marks	Semester end Exam marks	Total Marks	Credits
			L	T	P	E	O	Total				
EEE221	Engineering Mathematics – IV	BS	3	0	0	1	6	10	40	60	100	3
EEE222	Thermo Dynamics and Mechanics of Fluids	ES	2	1	0	1	5	9	40	60	100	3
EEE223	Signals & Systems	PC	3	0	0	1	4	8	40	60	100	3
EEE224	Electromagnetics	PC	3	0	0	1	4	8	40	60	100	3
EEE225	Performance of DC Machines and Transformers	PC	2	1	0	1	5	9	40	60	100	3
EEE226	Electrical Power Generation and Utilization	PC	3	0	0	1	4	8	40	60	100	3
EEE227	Thermo Dynamics & Mechanics of Fluids Laboratory	ES	0	0	3	0	1	4	50	50	100	1.5
EEE228	Digital Electronics, Micro Processors and Controllers Laboratory	PC	0	0	3	0	1	4	50	50	100	1.5
<b>Total</b>			<b>16</b>	<b>2</b>	<b>6</b>	<b>6</b>	<b>30</b>	<b>60</b>	<b>340</b>	<b>460</b>	<b>800</b>	<b>21</b>

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3 <sup>rd</sup> Year												
Semester - I												
Course Code	Title of the course	Category	Periods						Sessional Marks	Semester end Exam marks	Total Marks	Credits
			L	T	P	E	O	Total				
EEE311	Open Elective-I	OE	3	0	0	1	3	7	40	60	100	3
EEE312	Professional Elective -I	PE	3	0	0	1	3	7	40	60	100	3
EEE313	Pulse, Digital and Integrated Circuits	PC	3	0	0	1	3	7	40	60	100	3
EEE314	Linear Control Systems	PC	2	1	0	1	3	7	40	60	100	3
EEE315	Performance of Induction and Synchronous Machines	PC	2	1	0	1	3	7	40	60	100	3
EEE316	Power Transmission and Distribution	PC	2	1	0	1	3	7	40	60	100	3
EEE317	Quantitative Aptitude -I / Verbal Aptitude-I	HS	0	0	3	0	3	6	100	0	100	1.5
EEE318	Electrical Machines Laboratory - I	PC	0	0	3	0	2	5	50	50	100	1.5
EEE319	Electronics Laboratory -II	PC	0	0	3	0	2	5	50	50	100	1.5
<b>Total</b>			<b>15</b>	<b>3</b>	<b>9</b>	<b>6</b>	<b>25</b>	<b>58</b>	<b>440</b>	<b>460</b>	<b>900</b>	<b>22.5</b>

Open Elective -I
1. Python
2. Computer Architecture and Organization
3. JAVA

Professional Elective -I
1. Renewable Energy Technologies
2. VLSI
3. Embedded Systems

Semester - II												
Course Code	Title of the course	Category	Periods						Sessional Marks	Semester end Exam marks	Total Marks	Credits
			L	T	P	E	O	Total				
EEE321	Open Elective-II	OE	3	0	0	1	2	6	40	60	100	3
EEE322	Professional Elective -II	PE	3	0	0	1	3	7	40	60	100	3
EEE323	Professional Elective -III	PE	3	0	0	1	3	7	40	60	100	3
EEE324	Power Electronics	PC	3	0	0	1	5	9	40	60	100	3
EEE325	Power System Analysis	PC	2	1	0	1	6	10	40	60	100	3
EEE326	Advanced Control Systems	PC	2	1	0	1	6	10	40	60	100	3
EEE327	Quantitative Aptitude -II / Soft Skills	HS	0	0	3	0	2	5	100	0	100	1.5
EEE328	Control Systems Lab	PC	0	0	3	0	1	4	50	50	100	1.5
EEE329	Electrical Machines Lab - II	PC	0	0	3	0	1	4	50	50	100	1.5
<b>Total</b>			<b>16</b>	<b>2</b>	<b>9</b>	<b>6</b>	<b>29</b>	<b>62</b>	<b>440</b>	<b>460</b>	<b>900</b>	<b>22.5</b>

Open Elective -II
1. Competitive Programming
2. Internet of Things
3. Robotics

Professional Elective -II
1. Electrical Drives and Traction
2. Digital Control Systems
3. Digital Signal Processing

Professional Elective -III
1. Optimization Techniques
2. Electrical Machine Design
3. ANN & Fuzzy Systems

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4 <sup>th</sup> Year												
Semester - I												
Course Code	Title of the course	Category	Periods						Sessional Marks	Semester end Exam marks	Total Marks	Credits
			L	T	P	E	O	Total				
EEE411	Open Elective-III	OE	3	0	0	1	2	6	40	60	100	3
EEE412	Professional Elective –IV	PE	3	0	0	1	2	6	40	60	100	3
EEE413	Professional Elective –V	PE	3	0	0	1	2	6	40	60	100	3
EEE414	Power System Protection	PC	3	0	0	1	5	9	40	60	100	3
EEE415	Design Thinking	SC	2	0	2	0	0	4	0	0	0	0
EEE416	Power Electronics Laboratory	PC	0	0	3	0	1	4	50	50	100	1.5
EEE417	Power Systems Simulation Laboratory	PC	0	0	3	0	1	4	50	50	100	1.5
EEE418	Project -I	PR	0	0	3	0	1	4	60	0	60	2
EEE419	Summer Internship	PR	0	0	0	0	1	1	100	0	100	1
Total			12	0	9	4	15	40	420	340	760	18

Open Elective-III	
S. No.	Infosys Springboard Courses
1	Computational Problem Solving
2	Programming Fundamentals using Python - Part 1
3	Python - The Practical and Hands-on approach
4	Data Structures and Algorithms: The Complete Master class
5	Data Structures and Algorithms using Python - Part 1
6	Machine Learning, NLP & Python
7	Data Analysts Toolbox: Excel, Python, Power BI
8	Advanced Python Concepts
9	Programming Fundamentals using Python - Science Graduates - Foundation Program
10	Hands-On Deep Learning on Artificial Neural Networks
11	Learn Python and Ethical Hacking from Scratch
12	Data Structures and Algorithms using Java

Professional Elective –IV
1. Energy Management and Control
2. Nonlinear Systems
3. Control & Instrumentation
4. Electrical Engineering Drawing

Professional Elective – V
1. Electric Hybrid Vehicles
2. Electrical Machine Design
3. Power Semiconductor Drives
4. AI Techniques in Electrical Engineering
5. Process Control & Automation

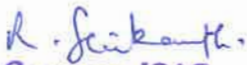
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Semester - II													
Course Code	Title of the course	Category	Periods						Sessional Marks	Semester end Exam marks	Total Marks	Credits	
			L	T	P	E	O	Total					
EEE421	Open Elective-IV	OE	3	0	0	1	2	6	0	0	100	3	
EEE422	Engineering Economics and Management	HS	3	0	0	0	1	4	40	60	100	3	
EEE423	Professional Elective -VI	PE	3	0	0	1	2	6	40	60	100	3	
EEE424	Research Methodology	SC	2	0	0	0	0	2	0	0	0	0	
EEE425	Comprehensive Viva	PR	0	0	0	0	1	1	0	100	100	2	
EEE426	Project - II	PR	0	0	9	0	2	11	60	80	140	6	
Total			9	0	9	2	8	28	140	300	540	17	

Open Elective-IV	
S. No.	Infosys Springboard Courses
1.	Computational Problem Solving
2.	Programming Fundamentals using Python - Part 1
3.	Python - The Practical and Hands-on approach
4.	Data Structures and Algorithms: The Complete Master class
5.	Data Structures and Algorithms using Python - Part 1
6.	Machine Learning, NLP & Python
7.	Data Analysts Toolbox: Excel, Python, Power BI
8.	Advanced Python Concepts
9.	Programming Fundamentals using Python - Science Graduates - Foundation Program
10.	Hands-On Deep Learning on Artificial Neural Networks
11.	Learn Python and Ethical Hacking from Scratch
12.	Data Structures and Algorithms using Java

Professional Elective -VI	
1.	HVDC & FACTS
2.	Smart Grid
3.	Advanced Power Electronic Converters
4.	Sliding Mode Control
5.	Electrical Installation, Estimation & Cost

  
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# R-19 COURSE STRUCTURE

## M TECH (Machine Design)

### DEPT. OF MECHANICAL ENGINEERING: ANITS

#### I Year – I Semester

Course No.	Name of the course	Periods per week		Max. marks		Credits
		Lec.	Lab	Sess.	Exams	
MECMD111	Theory of Elasticity and Plasticity	4	—	40	60	4
MECMD112	Mechanics of Machinery	4	—	40	60	4
MECMD113	Advanced Optimization Techniques	4	—	40	60	4
MECMD114	Design Engineering	4	—	40	60	4
MECMD115	Elective-I	4	—	40	60	4
MECMD116	Elective - II	4	—	40	60	4
MECMD117	Research Methodology (Mandatory Non-credit course)	2	—	50		
MECMD118	CAD Lab	—	3	50		2
MECMD119	Seminar-I	—	3	50		1
Total		26	6	390	360	27

#### I Year – II Semester

Course No.	Name of the course	Periods per week		Max. marks		Credits
		Lec.	Lab	Sess.	Exams	
MECMD121	Mechanical Vibrations	4	—	40	60	4
MECMD122	Instrumentation & Experimental Stress Analysis	4		40	60	4
MECMD123	Advanced Finite Element Analysis	4	—	40	60	4
MECMD124	Advanced Mechanics of Solids	4	—	40	60	4
MECMD125	Elective – III	4	—	40	60	4
MECMD126	Elective – IV	4	—	40	60	4
MECMD127	Instrumentation & Experimental Stress Analysis Lab	—	3	50	-	2
MECMD128	Seminar-II		3	50		1
Total		24	6	340	360	27

**Elective-I:** A. Integrated Computer Aided Design  
C. Fatigue, Creep & Fracture Mechanics

B. Pressure Vessel Design  
D. DBMS

**Elective-II:** A. Robotics  
C. Theory of Plates and Shells

B. Computational Methods in Engg.  
D. Vehicle Dynamics

**Elective-III:** A. Concurrent Engineering  
C. Computational Fluid Dynamics

B. Mechatronics  
D. Tribology

**Elective - IV** A. Gear Engineering  
C. Condition Monitoring & Signal analysis

B. Quality concepts in design  
D. Composite Materials

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**ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES**  
**DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING**

**M. Tech. (Control Systems Engineering)**

**SCHEME OF INSTRUCTION AND EXAMINATION UNDER AUTONOMOUS SYSTEM**

**Semester – I:**

Subject Code	Subject Title	Credits	Lectures/week		Sessionals	Sem end exam marks	Total
			Theory	Lab			
ECS 111	Systems & Control	4	4	-	40	60	100
ECS 112	Modern Control Systems	4	4	-	40	60	100
ECS 113	Advanced Drives & Control	4	4	-	40	60	100
ECS 114	Elective-I	4	4	-	40	60	100
ECS 115	Elective-II	4	4	-	40	60	100
<b>ECS 116</b>	<b>Research Methodologies</b>	0	4	-	-	-	-
ECS 117	MOOCs course-I	4	-	-	100	-	100
ECS 118	Control Systems Lab	3	-	3	50	50	100
	<b>Total</b>	<b>27</b>	<b>24</b>	<b>3</b>	<b>350</b>	<b>350</b>	<b>700</b>

**ELECTIVE -I:**

(a) Large Scale Systems (b) Digital Control Systems (c) Intelligent Systems & Control

**ELECTIVE -II:**

(a) Python Programming (b) Java (c) Data Structures & Algorithms.

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## Anil Neerukonda Institute of Technology & Sciences (Autonomous)

(Permanent Affiliation by Andhra University & Approved by AICTE  
Accredited by NBA (ECE, EEE, CSE, IT, Mech. Civil & Chemical) & NAAC)  
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### RESEARCH METHODOLOGY

#### Syllabus

##### UNIT – I:

Research Methodology: Objectives and Motivation of Research, Types of Research, Research Approaches, Significance of Research, Research Methods verses Methodology, Research and Scientific Method, Important of Research Methodology, Research Process, Criteria of Good Research, Problem Formulation.

##### UNIT – II

Literature Survey: Importance of Literature Survey, Sources of Information, Assessment of Quality of Journals and Articles, Information through Internet. Literature Review: Need of Review, Guidelines for Review, Record of Research Review.

##### UNIT – III

Research Design: Meaning of Research Design, Need of Research Design, and Feature of a Good Design Important Concepts Related to Research Design, Different Research Designs, Basic Principles of Experimental Design, Developing a Research Plan, Design of Experimental Set-up, Use of Standards and Codes.

##### UNIT – IV

Data Collection: Collection of primary data, Secondary data, Data organization, Methods of data grouping, Diagrammatic representation of data, Graphic representation of data. Sample Design, Need for sampling, some important sampling definitions, Estimation of population, Role of Statistics for Data Analysis.

##### UNIT – V

Research Report Writing: Format of the Research report, Synopsis, Dissertation, Thesis its Differentiation, References/Bibliography/Webliography, Technical paper writing/Journal report writing, Research Proposal Preparation: Writing a Research Proposal and Research Report, Writing Research Grant Proposal.

##### REFERENCES:

1. C.R Kothari, Research Methodology, Methods & Technique; New Age International Publishers, 2004.
2. R. Ganesan, Research Methodology for Engineers, MJP Publishers, 2011.
3. Ratan Khananabis and Suvasis Saha, Research Methodology, Universities Press, Hyderabad, 2015.
4. Y. P. Agarwal, Statistical Methods: Concepts, Application and Computation, Sterling Pubs., Pvt., Ltd., New Delhi, 2004.
5. Vijay Upagade and Aravind Shende, Research Methodology, S. Chand & Company Ltd., New Delhi, 2009.
6. G. Nageswara Rao, Research Methodology and Quantitative methods, BS Publications, Hyderabad, 2012.
7. Naval Bajjai “Business Research Methods” Pearson 2011.
8. Prahalad Mishra “ Business Research Methods “ Oxford 2016.

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# ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES

(UGC AUTONOMOUS)

(Affiliated to AU, Approved by AICTE & Accredited by NBA & NAAC with 'A' Grade)  
Sangivalasa 531 162, Bheemunipatnam Mandal, Visakhapatnam Dist

## DEPARTMENT OF CHEMICAL ENGINEERING

### M. Tech. Food Processing Technology R-20 regulations w.e.f. 2021-22 admitted batch

Code	Title of the Course	Category	L	T	P	Total	Max. Marks		Total Marks	Credits
							Sess.	End Exam.		
FPT111	Food Microbiology	PC	3	0	0	3	40	60	100	3
FPT112	Food Biochemistry	PC	3	0	0	3	40	60	100	3
FPT113	Professional Elective - I	PE	3	0	0	3	40	60	100	3
FPT114	Professional Elective - II	PE	3	0	0	3	40	60	100	3
FPT115	Research Methodology and IPR	MC	3	0	0	3	40	60	100	3
FPT116	Food Microbiology and Biochemistry Lab	PC	0	0	3	3	50	50	100	2
FPT117	Seminar	SC	0	0	2	2	100	-	100	1
FPT118	Human Values and Professional Ethics	Audit	2	0	0	2	40	0	40	0
<b>Total</b>			<b>17</b>	<b>0</b>	<b>5</b>	<b>22</b>	<b>390</b>	<b>350</b>	<b>740</b>	<b>18</b>

#### Professional Elective - I

FPT 113 (A): Plant Food Technology

FPT 113 (B): Animal Product Technology

FPT 113 (C): Instrumentation and Control in Food Industry

#### Professional Elective - II

FPT 114 (A): Principles of Food Science and Preservation

FPT 114 (B): Plantation Crops, Spices & Condiment Technology

FPT 114 (C): Functional Foods and Nutraceuticals

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## **RESEARCH METHODOLOGY and IPR**

**UNIT I- RESEARCH PROBLEM AND SCOPE FOR SOLUTION:** 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

**UNIT II- FORMAT:** Effective literature studies approaches, analysis, Plagiarism, Research ethics. Effective technical writing, how to write report, Paper Developing a Research Proposal, Format of research proposal, a presentation and assessment by a review committee

**UNIT III- PROCESS AND DEVELOPMENT:** 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.

**UNIT IV- PATENT RIGHTS:** Patent Rights: Scope of Patent Rights. Licensing and transfer of technology. Patent information and databases. Geographical Indications.

**UNIT V- NEW DEVELOPMENTS IN IPR** 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.

### **TEXT 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"

### **REFERENCES**

1. Halbert, "Resisting Intellectual Property", Taylor & Francis Ltd ,2007.
2. Mayall, "Industrial Design", McGraw Hill, 1992.
3. Niebel, "Product Design", McGraw Hill, 1974.
4. Asimov, "Introduction to Design", Prentice Hall, 1962.
5. Robert P. Merges, Peter S. Menell, Mark A. Lemley, " Intellectual Property in New Technological Age", 2016.
6. T. Ramappa, "Intellectual Property Rights Under WTO", S. Chand, 2008

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