



Jawaharlal Nehru Technological University Anantapur

(Established by Govt. of A.P., Act. No. 30 of 2008)

Ananthapuramu-515 002 (A.P) India

B.Tech. in Electrical & Electronics Engineering Course Structures and Syllabi under R19 Regulations

JNTUA Curriculum
Electrical & Electronics Engineering B. Tech Course Structure

S.No.	Course Name	Category	L-T-P-C
1.	Physical Activities -- Sports, Yoga and Meditation, Plantation	MC	0-0-6-0
2.	Career Counselling	MC	2-0-2-0
3.	Orientation to all branches -- career options, tools, etc.	MC	3-0-0-0
4.	Orientation on admitted Branch -- corresponding labs, tools and platforms	EC	2-0-3-0
5.	Proficiency Modules & Productivity Tools	ES	2-1-2-0
6.	Assessment on basic aptitude and mathematical skills	MC	2-0-3-0
7.	Remedial Training in Foundation Courses	MC	2-1-2-0
8.	Human Values & Professional Ethics	MC	3-0-0-0
9.	Communication Skills -- focus on Listening, Speaking, Reading, Writing skills	BS	2-1-2-0
10.	Concepts of Programming	ES	2-0-2-0

Semester - I (Theory - 4, Lab - 4)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A54101	Algebra & Calculus	BS	3-1-0	4
2.	19A56101T	Applied Physics	BS	3-0-0	3
3.	19A05101T	Problem Solving & Programming	ES	3-1-0	4
4.	19A52101T	Communicative English 1	HS	2-0-0	2
5.	19A02101	Electrical & Electronics Engineering Workshop	LC	0-0-2	1
6.	19A56101P	Applied Physics Lab	BS	0-0-3	1.5
7.	19A05101P	Problem Solving & Programming Lab	ES	0-0-3	1.5
8.	19A52101P	Communicative English 1 Lab	HS	0-0-2	1
Total					18

Semester - II (Theory - 4, Lab - 5)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A01201T	Basic Civil & Mechanical Engineering	ES	3-0-0	3
2.	19A54201	Differential Equations and Vector Calculus	BS	3-1-0	4
3.	19A51102T	Chemistry	BS	3-0-0	3
4.	19A05201T	Data Structures	ES	3-0-0	3
5.	19A03101	Engineering Workshop	LC	0-0-2	1
6.	19A03102	Engineering Graphics Lab	ES	1-0-4	3
7.	19A01201P	Basic Civil & Mechanical Engineering Lab	ES	0-0-3	1.5
8.	19A51102P	Chemistry Lab	BS	0-0-3	1.5
9.	19A05201P	Data Structures Lab	ES	0-0-3	1.5
Total					21.5

Semester – III (Theory - 6, Lab – 3, MC-1)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A54302	Complex Variables & Transforms	BS	2-1-0	3
2.	19A02301T	Basic Electrical Circuits	PC	2-1-0	3
3.	19A02302	Power System Architecture	PC	2-1-0	3
4.	19A02303T	DC Machines & Transformers	PC	2-1-0	3
5.	19A04306T	Semiconductor Devices and Circuits	PC	1-1-0	2
6.	19A04304	Digital Electronics and Logic Design	PC	2-1-0	3
7.	19A02303P	DC Machines & Transformers Lab	PC	0-0-3	1.5
8.	19A04306P	Semiconductor Devices and Circuits Lab	PC	0-0-3	1.5
9.	19A02301P	Basic Electrical Circuits Lab	PC	0-0-3	1.5
10.	19A99302	Biology For Engineers	MC	3-0-0	0
Total					21.5

Semester - IV (Theory - 7, Lab – 2, MC-1)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A54304	Numerical Methods & Probability Theory	BS	2-1-0	3
2.	19A02401T	Electrical Circuit Analysis	PC	2-1-0	3
3.	19A02402	Engineering Electromagnetics	PC	2-1-0	3
4.	19A02403	Power Electronics	PC	2-1-0	3
5.	19A04405	Analog Electronic Circuits	PC	2-1-0	3
6.	19A05304T	Python Programming	ES	2-1-0	3
7.	19A52301	Universal Human Values	HS	2-0-0	2
8.	19A02401P	Electrical Circuit Analysis Lab	PC	0-0-3	1.5
9.	19A04406	Electronic Circuits Lab	PC	0-0-3	1.5
10.	19A99301	Environmental Science	MC	3-0-0	0
Total					23

Semester – V (Theory - 6, Lab – 3, MC-1)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A02501T	AC Machines	PCC	2-1-0	3
2.	19A02502	Control Systems	PCC	2-1-0	3
3.	19A52601T	English Language Skills	PCC	3-0-0	3
4.	19A02504	Electrical Machine Design	PCC	1-1-0	2
5.	19A02503a 19A02503b 19A02503c 19A02503d 19A02503e	Professional Elective-I HVDC and FACTS DC Drives Programmable Logic Controllers Analog and digital IC applications Solar Power Systems	PEC-I	2-1-0	3
6.	19A01506a 19A01506b 19A03506a 19A03506b 19A04506a 19A04506b 19A05506a 19A05506b 19A27506a 19A27506b 19A54506a 19A52506a 19A51506a	Open Elective-I Experimental stress analysis. Building Technology Introduction to Hybrid and Electric Vehicles Rapid Prototyping Analog Electronics Digital Electronics Free and Open Sources Systems Computer Graphics and Multimedia Animation Brewing Technology Computer Applications in Food Technology Optimization Techniques Technical Communication and Presentation Skills Chemistry of Energy Materials	OEC-I	2-1-0	3
7.	19A02501P	AC Machines Lab	PCC	0-0-3	1.5
8.	19A52601P	English Language Skills Lab	PCC	0-0-3	1.5
9.	19A02506	Power Electronics & Simulation Lab	PCC	0-0-2	1
10.	19A02507	Socially Relevant Project	PR	0-0-0.5	0.5
11.	19A99601	Research Methodology	MC	3-0-0	0
Total					21.5

Semester – VI (Theory - 6, Lab – 2)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A04301	Signals & Systems	PCC	2-1-0	3
2.	19A02601T	Digital Computer Platforms	PCC	2-1-0	3
3.	19A02602	Power System Analysis	PCC	2-1-0	3
4.	19A02603a 19A02603b 19A02603c 19A04703c 19A02603d	Professional Elective-II (MOOC) Power Quality Fundamentals of Semiconductor Devices Nonlinear System Analysis Introduction to Embedded System Design Design of Photovoltaic Systems	PEC-II	2-1-0	3
5.	19A01604a 19A01604b 19A03604a 19A03604b 19A04604a 19A04604b 19A05604a 19A05604b 19A27604a 19A27604b 19A54604a 19A52604a 19A51604a	Open Elective-II Industrial waste and wastewater management. Building Services & Maintenance Introduction to Mechatronics Optimization techniques through MATLAB Basics of VLSI Principles of Communication Systems Fundamentals of VR/AR/MR Data Science Food Toxicology Food Plant Equipment Design Wavelet Transforms & its applications Soft Skills Chemistry of Polymers and Its Applications	OEC-II	2-1-0	3
6.	19A52602a 19A52602b 19A52602c 19A52602d 19A52602e	Humanities Elective-I Entrepreneurship & Incubation Managerial Economics And Financial Analysis Business Ethics and Corporate Governance Enterprise Resource Planning Supply Chain Management	HSMC	3-0-0	3
7.	19A02605	Control Systems & Simulation Lab	PCC	0-0-3	1.5
8.	19A02601P	Digital Computer Platforms Lab	PCC	0-0-3	1.5
9.	19A02606	Socially Relevant Project	PR	0-0-0.5	0.5
10.	19A99501	Constitution of India	MC	3-0-0	0
11	19A02607	Comprehensive online examination		-	0
				Total	21.5

Semester – VII (Theory - 5 Lab – 2)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A02701	Measurements & Sensors	PCC	2-1-0	3
2.	19A02702	Power System Protection	PCC	2-1-0	3
3.	19A02703a 19A02703b 19A02703c 19A04602T 19A02703d	Professional Elective-III Power System Operation & Control Switched mode Power Converters Instrumentation Digital Signal Processing Applications of Power Electronics to Renewable Energy Sources	PEC-III	3-0-0	3
4.	19A01704a 19A01704b 19A03704a 19A03704b 19A04704a 19A04704b 19A05704a 19A05704b 19A27704a 19A27704b 19A54704a 19A51704a	Open Elective-III Air pollution and control. Basics of civil Engineering Finite element methods Product Marketing Introduction to Microcontrollers & Applications Principles of Digital Signal Processing Fundamentals of Game Development Cyber Security Corporate Governance in Food Industries Process Technology for Convenience & RTE Foods Numerical Methods for Engineers (ECE, CSE, IT &CE) Chemistry of Nanomaterials and Applications	OEC-III	3-0-0	3
5.	19A52701a 19A52701b 19A52701c 19A52701d 19A52701e	Humanities Elective-II Organizational Behavior Management Science Business Environment Strategic Management E-Business	HSMC	3-0-0	3
6.	19A02705	Power Systems & Simulation Lab	PCC	0-0-3	1.5
7.	19A02706	Measurements Lab	PCC	0-0-3	1.5
8.	19A02707	Industrial Training/Skill Development/Research Project*	PR	-----	2
				Total	20

Semester – VIII (Theory - 2)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A02801a	Professional Elective-IV Power Quality	PE	3-0-0	3
	19A02801b	FPGA based controller design			
	19A02801c	Intelligent Control Techniques			
	19A04604b	Principles of Communication Systems			
	19A02801d	Energy Storage Systems			
2.	19A01802a	Open Elective-IV Disaster Management.	OE	3-0-0	3
	19A01802b	Global Warming and climate changes			
	19A03802a	Energy conservation and management			
	19A03802b	Non - destructive testing			
	19A04802a	Introduction to Image Processing			
	19A04802b	Principles of Cellular and Mobile Communications			
	19A04802c	Industrial Electronics			
	19A04802d	Electronic Instrumentation			
	19A05802a	Block Chain Technology and Applications			
	19A05802b	MEAN Stack Technology			
	19A27802a	Food Plants Utilities & Services			
	19A27802b	Nutraceuticals & Functional Foods			
	19A54802a	Mathematical Modeling & Simulation			
	19A51802a	Green Chemistry and Catalysis for Sustainable Environment			
	3.	19A02803			
				Total	13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
ELECTRICAL & ELECTRONICS ENGINEERING

Socially Relevant Projects

1. Energy Auditing
2. Solar Water Pumping Systems
3. Automatic Traffic Light Control Systems
4. Building Electrical Safety Measures
5. Electrical Protection Systems in Agricultural Fields

Honours Degree in Electrical Engineering

S.No.	Course No.	Course Name	L	T	P	Credits
1.	19A02H01	Adaptive Control Systems	3	1	0	4
2.	19A02H02	AC Drives	3	1	0	4
3.	19A02H03	Hybrid and Electric Vehicles	3	1	0	4
4.	19A02H04	Power System Wide Area Monitoring and Control	3	1	0	4
5.	19A02H05	Restructured Power Systems	3	1	0	4
Total						20

Minor Degree in Electrical Engineering

S.No.	Course No.	Course Name	L	T	P	Credits
1.	19A02301T	Basic Electrical Circuits	2	1	0	3
2.	19A02501T	AC Machines	2	1	0	3
3.	19A02502	Control Systems	2	1	0	3
4.	19A02302	Power System Architecture	3	0	0	3
5.	19A02701	Measurements & Sensors	2	1	0	3
6.	19A02M01	Minor Discipline Project	-	-	-	5
Total						20