



Semester-VII						
S.No.	Course Code	Course Name	L	T	P	Credits
1.	20A01701a 20A01701b 20A01701c	Professional Elective Course- III Finite Element Analysis Railways, Airport and Harbour Engineering Ground Improvement Techniques	3	0	0	3
2.	20A01702a 20A01702b 20A01702c	Professional Elective Course- IV Prestressed Concrete Hydraulic structures and Waterpower Engineering Industrial Waste and Wastewater Management	3	0	0	3
3.	20A01703a 20A01703b 20A01703c	Professional Elective Course- V Remote Sensing and GIS Bridge Engineering Design and Drawing of Irrigation Structures	3	0	0	3
4.	20A52701a 20A52701b 20A52701c	Humanities Elective - II Entrepreneurship and Incubation Management Science Enterprise Resource Planning	3	0	0	3
5.		Open Elective Course - III	3	0	0	3
6.		Open Elective Course - IV	3	0	0	3
7.	20A01706	Skill oriented course - V Estimation, Costing and Valuation	1	0	2	2
8.	20A01707	Evaluation of Industry Internship				3
Total						23

Open Elective - III

S.No	Course Code	Course Name	Offered by the Dept.
1	20A02704	IOT Applications in Electrical Engineering	EEE
2	20A03704	Product Design & Development	ME
3	20A04704	Electronic Sensors	ECE
4	20A05704a	Web Technologies	CSE & Allied/IT
5	20A05704b	VR & AR for Engineers	
6	20A05704c	Software Engineering	
7	20A27704	Human Nutrition	FT
8	20A54702	Numerical Methods for Engineers	Mathematics
9	20A56702	Sensors And Actuators for Engineering Applications	Physics
10	20A51702	Chemistry of Nanomaterials and Applications	Chemistry

Open Elective - IV

S.No	Course Code	Course Name	Offered by the Dept.
1	20A02705	Renewable Energy Systems	EEE
2	20A03705	Introduction to Composite Materials	ME
3	20A04705	Microcontrollers and Applications	ECE
4	20A05705a	Cyber Security	CSE & Allied/IT
5	20A05705b	Introduction to Full Stack Development	
6	20A05705c	Industrial IoT	
7	20A27705	Waste and Effluent Management	FT
8	20A54703	Number theory & its applications	Mathematics
9	20A56703	Smart Materials and Devices	Physics
10	20A51703	Green Chemistry and Catalysis for Sustainable Environment	Chemistry

[Signature]
Principal



SREE VENKATESWARA COLLEGE OF ENGINEERING
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(Approved by AICTE, New Delhi and Affiliated to JNTU, Anantapur)
Northrajupalem (Vi), Kodavaluru(M), S.P.S.R Nellore (Dt)-524316



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

JNTUA Curriculum
Electrical & Electronics Engineering R20 Regulations
B. Tech Course Structure

Semester-III							
S.No.	Course Code	Course Name	Category	Hours per week			Credits
				L	T	P	
1.	20A54302	Complex Variables & Transforms	BS	3	0	0	3
2.	20A02301T	Electrical Circuit Analysis	PC	3	0	0	3
3.	20A02302T	DC Machines & Transformers	PC	3	0	0	3
4.	20A04303T	Digital Logic Design	PC	3	0	0	3
5.	20A52301	Humanities Elective-I Managerial Economics & Financial Analysis	HS	3	0	0	3
	20A52302	Organizational Behavior					
	20A52303	Business Environment					
6.	20A02301P	Electrical Circuit Analysis Lab	PC	0	0	3	1.5
7.	20A02302P	DC Machines & Transformers Lab	PC	0	0	3	1.5
8.	20A04303P	Digital Logic Design Lab	PC	0	0	3	1.5
9.	20A05305	Skill oriented course-I Application development with Python	SC	1	0	2	2
10	20A52201	Mandatory non credit course-II Universal Human Values	MC	3	0	0	0
11	20A99301	NSS/NCC/NSO Activities	MC	-	-	-	0
Total							21.5

P. Kumar Babu
Principal
Sree Venkateswara College of Engineering
North Rajupalem, Kodavaluru (V. & M.)
Nellore (Dist.) - 524 316.



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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

JNTUA Curriculum
Electrical & Electronics Engineering R20 Regulations
B. Tech Course Structure

Semester-V						
S.No.	Course Code	Course Name	L	T	P	Credits
1.	20A02501	Power System Architecture	3	0	0	3
2.	20A02502T	Control Systems	3	0	0	3
3.	20A02503T	Measurements & Sensors	3	0	0	3
4.	20A02504a	Professional Elective Course – I Switchgear and Protection	3	0	0	3
	20A02504b	Power Electronics Drives				
	20A02504c	Power Quality				
5.		Open Elective Course – I	3	0	0	3
6.	20A02502P	Control Systems Lab	0	0	3	1.5
7.	20A02503P	Measurements & Sensors Lab	0	0	3	1.5
8.	20A52401	Skill oriented course - III Soft Skills	1	0	2	2
9.	20A02505	Evaluation of Community Service Project				1.5
Total						21.5

Open Elective Course – I

S.No.	Course Code	Course Name	Offered by the Dept.
1	20A01505	Building Technology	CE
2	20A03505	3D Printing Technology	ME
3	20A04506	Principles of Communication Systems	ECE
4	20A05505a	Java Programming	CSE & Allied/IT
5	20A05602T	Artificial Intelligence	
6	20A12502	Mobile Application Development using Android	
7	20A27505	Computer Applications in Food Processing	FT
8	20A54501	Optimization Techniques	Mathematics
9	20A56501	Materials Characterization Techniques	Physics
10	20A51501	Chemistry of Energy Materials	Chemistry

(Signature)
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Principal

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 Nellore (Dist.) - 524 316.



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

JNTUA Curriculum
Electrical & Electronics Engineering R20 Regulations
B. Tech Course Structure

Semester-VII						
S.No.	Course Code	Course Name	L	T	P	Credits
1.	20A02701a 20A02701b 20A02701c	Professional Elective Course- III Power Power System Operation & Control Switched Mode Power Converters Electrical & Electronics Instrumentation	3	0	0	3
2.	20A02702a 20A02702b 20A02702c	Professional Elective Course- IV Electrical Distribution System & Automation FPGA based Controller Design Intelligent Control Techniques	3	0	0	3
3.	20A02703a 20A04403T 20A02703c	Professional Elective Course- V Programmable Logic Controllers Linear & Digital IC Applications Electric Vehicle Technologies	3	0	0	3
4.	20A52701a 20A52701b 20A52701c	Humanities Elective - II Entrepreneurship and Incubation Management Science Enterprise Resource Planning	3	0	0	3
5.		Open Elective Course - III	3	0	0	3
6.		Open Elective Course - IV	3	0	0	3
7.	20A02706	Skill oriented course - V Energy Conservation and Audit	1	0	2	2
8.	20A02707	Evaluation of Industry Internship				3
Total						23

Open Elective Course - III

S.No	Course Code	Course Name	Offered by the Dept.
1	20A01704	Cost Effective Housing Techniques	CE
2	20A03704	Product Design & Development	ME
3	20A04704	Electronic Sensors	ECE
4	20A05704a	Web Technologies	CSE & Allied/IT
5	20A05704b	VR & AR for Engineers	
6	20A05704c	Software Engineering	
7	20A27704	Human Nutrition	FT
8	20A54702	Numerical Methods for Engineers	Mathematics
9	20A56702	Sensors And Actuators for Engineering Applications	Physics
10	20A51702	Chemistry of Nanomaterials and Applications	Chemistry



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

JNTUA Curriculum
Electrical & Electronics Engineering R20 Regulations
B. Tech Course Structure

Semester-VII						
S.No.	Course Code	Course Name	L	T	P	Credits
1.	20A02701a 20A02701b 20A02701c	Professional Elective Course– III Power Powe System Operation & Control Switched Mode Power Converters Electrical & Electronics Instrumentation	3	0	0	3
2.	20A02702a 20A02702b 20A02702c	Professional Elective Course– IV Electrical Distribution System & Automation FPGA based Controller Design Intelligent Control Techniques	3	0	0	3
3.	20A02703a 20A04403T 20A02703c	Professional Elective Course– V Programmable Logic Controllers Linear & Digital IC Applications Electric Vehicle Technologies	3	0	0	3
4.	20A52701a 20A52701b 20A52701c	Humanities Elective – II Entrepreneurship and Incubation Management Science Enterprise Resource Planning	3	0	0	3
5.		Open Elective Course – III	3	0	0	3
6.		Open Elective Course – IV	3	0	0	3
7.	20A02706	Skill oriented course – V Energy Conservation and Audit	1	0	2	2
8.	20A02707	Evaluation of Industry Internship				3
Total						23

Open Elective Course – III

S.No	Course Code	Course Name	Offered by the Dept.
1	20A01704	Cost Effective Housing Techniques	CE
2	20A03704	Product Design & Development	ME
3	20A04704	Electronic Sensors	ECE
4	20A05704a	Web Technologies	CSE & Allied/IT
5	20A05704b	VR & AR for Engineers	
6	20A05704c	Software Engineering	
7	20A27704	Human Nutrition	FT
8	20A54702	Numerical Methods for Engineers	Mathematics
9	20A56702	Sensors And Actuators for Engineering Applications	Physics
10	20A51702	Chemistry of Nanomaterials and Applications	Chemistry



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Open Elective Course – IV

S.No	Course Code	Course Name	Offering by the Dept.
1	20A01705	Health, Safety & Environmental management	CE
2	20A03705	Introduction to Composite Materials	ME
3	20A04706	Principles of Cellular & Mobile Communications	ECE
4	20A05705a	Cyber Security	CSE & Allied/IT
5	20A05705b	Introduction to Full Stack Development	
6	20A05705c	Industrial IoT	
7	20A27705	Waste and Effluent Management	FT
8	20A54703	Number theory & its applications	Mathematics
9	20A56703	Smart Materials and Devices	Physics
10	20A51703	Green Chemistry and Catalysis for Sustainable Environment	Chemistry

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Nellore (Dist.) - 524 316,



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
(Established by Govt. of A.P., ACT No.30 of 2008)
ANANTAPUR – 515 002 (A.P) INDIA

B.TECH. - MECHANICAL ENGINEERING
Proposed Course Structure (R20) – III & IV Year

Semester-V						
S.No.	Course Code	Course Name	L	T	P	Credits
1.	20A03501	CAD/CAM	3	0	0	3
2.	20A03502	Design of Machine Members	3	0	0	3
3.	20A03503T	Metrology and Measurements	3	0	0	3
4.	20A03504a 20A03504b 20A03504c	Professional Elective - I Automation & Robotics Tool Design Power Plant Engineering	3	0	0	3
5.		Open Elective – I	3	0	0	3
6.	20A03503P	Metrology and Measurements Laboratory	0	0	3	1.5
7.	20A03506	Computer Aided Modeling Laboratory	0	0	3	1.5
8.	20A03507	Skill oriented course - III Innovation through IoT	1	0	2	2
9.	20A03508	Evaluation of Community Service Project				1.5
Total						21.5

Open Elective Course – I

S.No.	Course Code	Course Name	Offered by the Dept.
1	20A01505	Building Technology	CE
2	20A02505	Electric Vehicles	EEE
3	20A04505	Digital Electronics	ECE
4	20A05505a	Java Programming	CSE & Allied /IT
5	20A05602T	Artificial Intelligence	
6	20A12502	Mobile Application Development using Android	
7	20A27505	Computer Applications in Food Processing	FT
8	20A56501	Materials Characterization Techniques	Physics
9	20A51501	Chemistry of Energy Materials	Chemistry

Note:

1. A student is permitted to register for Honours or a Minor in IV semester after the results of III Semester are declared and students may be allowed to take maximum two subjects per semester pertaining to their Minor from V Semester onwards.
2. A student shall not be permitted to take courses as Open Electives/Minor/Honours with content substantially equivalent to the courses pursued in the student's primary major.
3. A student is permitted to select a Minor program only if the institution is already offering a Major degree program in that discipline



Semester-VII						
S.No.	Course Code	Course Name	L	T	P	Credits
1.	20A03701a 20A03701b 20A03701c	Professional Elective Course- III Modern manufacturing Methods Design for Manufacturing (DFM) Operations Research	3	0	0	3
2.	20A03702a 20A03702b 20A03702c	Professional Elective Course- IV Automobile Engineering Mechanical Vibrations Refrigeration & Air Conditioning	3	0	0	3
3.	20A03703a 20A03703b 20A03703c	Professional Elective Course- V Mechatronics & MEMS Design of Oil Hydraulics and Pneumatics Geometric dimensioning and tolerances	3	0	0	3
4.	20A52701a 20A52701b 20A52701c	Humanities Elective - II Entrepreneurship and Incubation Management Science Enterprise Resource Planning	3	0	0	3
5.		Open Elective Course - III	3	0	0	3
6.		Open Elective Course - IV	3	0	0	3
7.	20A03706	Skill oriented course - V Industrial Automation	1	0	2	2
8.	20A03707	Evaluation of Industry Internship				3
Total						23

Open Elective Course - III

S.No	CourseCode	Course Name	Offered by the Dept.
1	20A01704	Cost Effective Housing Techniques	CE
2	20A02704	IOT Applications in Electrical Engineering	EEE
3	20A04704	Electronic Sensors	ECE
4	20A05704a	Web Technologies	CSE & Allied /IT
5	20A05704b	VR & AR for Engineers	
6	20A05704c	Software Engineering	
7	20A27704	Human Nutrition	FT
8	20A54702	Numerical Methods for Engineers	Mathematics
9	20A56702	Sensors And Actuators for Engineering Applications	Physics
10	20A51702	Chemistry of Nanomaterials and Applications	Chemistry

Open Elective Course - IV

S.No	CourseCode	Course Name	Offered by the Dept.
1	20A01705	Health, Safety & Environmental management	CE
2	20A02705	Renewable Energy Systems	EEE
3	20A04705	Microcontrollers and Applications	ECE
4	20A05705a	Cyber Security	CSE & Allied /IT
5	20A05705b	Introduction to Full Stack Development	
6	20A05705c	Industrial IoT	
7	20A27705	Waste and Effluent Management	FT
8	20A54703	Number theory & its applications	Mathematics
9	20A56703	Smart Materials and Devices	Physics
10	20A51703	Green Chemistry and Catalysis for Sustainable Environment	Chemistry



R20 Regulations

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
(Established by Govt. of A.P., ACT No.30 of 2008)
ANANTHAPURAMU – 515 002 (A.P) INDIA

Electronics & Communication Engineering

II B.TECH.

Semester-III

S.No.	Course Code	Course Name	Category	Hours per week			Credits
				L	T	P	
1.	20A54302	Complex Variables and Transforms	BS	3	0	0	3
2.	20A04301T	Signals and Systems	PC	3	0	0	3
3.	20A02303T	Electrical Engineering	ES	3	0	0	3
4.	20A04302T	Analog Circuits	PC	3	0	0	3
5.	20A52301	Humanities Elective- I Managerial Economics & Financial Analysis	HS	3	0	0	3
	20A52302	Organizational Behaviour					
	20A52303	Business Environment					
6.	20A04301P	Simulation Lab	PC	0	0	3	1.5
7.	20A02303P	Electrical Engineering Lab	ES	0	0	3	1.5
8.	20A04302P	Analog Circuits Lab	PC	0	0	3	1.5
9.	20A05305	Skill oriented course – I Application Development with Python	SC	1	0	2	2
10.	20A52201	Mandatory noncredit course – II Universal Human Values	MC	3	0	0	0
11.	20A99301	NSS/NCC/NSO Activities	MC	0	0	2	0
Total							21.5

Semester-IV

S.No.	Course Code	Course Name	Category	Hours per week			Credits
				L	T	P	
1.	20A54403	Probability Theory & Stochastic Processes	BS	3	0	0	3
2.	20A04303T	Digital Logic Design	PC	3	0	0	3
3.	20A04401	EM Waves and Transmission Lines	PC	3	0	0	3
4.	20A04402T	Communication Systems	PC	3	0	0	3
5.	20A04403T	Linear and Digital IC Applications	PC	3	0	0	3
6.	20A04303P	Digital Logic Design Lab	PC	0	0	3	1.5
7.	20A04402P	Communication Systems Lab	PC	0	0	3	1.5
8.	20A04403P	Linear and Digital IC Applications Lab	PC	0	0	3	1.5
9.	20A52401	Skill Oriented Course –II Soft Skills	SC	1	0	2	2
10.	20A99401	Mandatory noncredit course – III Design Thinking for Innovation	MC	2	1	0	0
Total							21.5
Community Service Internship (Mandatory) for 6 weeks duration during summer vacation							

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
(Established by Govt. of A.P., ACT No.30 of 2008)
ANANTAPUR – 515 002 (A.P) INDIA

B.TECH. - ELECTRONICS & COMMUNICATION ENGINEERING
Course Structure (R20) – III & IV Year

Semester-V						
S.No.	Course Code	Course Name	L	T	P	Credits
1.	20A04501	Control Systems Engineering	3	0	0	3
2.	20A04502T	Digital Signal Processing	3	0	0	3
3.	20A04503T	Microprocessors and Microcontrollers	3	0	0	3
4.	20A05602T 20A04504a 20A04504b	Professional Elective Course – I Machine Learning Computer Architecture & Organization Information Theory and Coding	3	0	0	3
5.		Open Elective Course – I	3	0	0	3
6.	20A04502P	Digital Signal Processing Lab	0	0	3	1.5
7.	20A04503P	Microprocessors and Microcontrollers Lab	0	0	3	1.5
8.	20A04509	Skill oriented course - III PCB Design and Prototype development	1	0	2	2
9.	20A04510	Evaluation of Community Service Project				1.5
Total						21.5

Open Elective Course – I

S.No	CourseCode	Course Name	Offered by the Dept.
1	20A01505	Building Technology	CE
2	20A02505	Electric Vehicles	EEE
3	20A03505	3D Printing Technology	ME
4	20A05505a	Java Programming	CSE & Allied/IT
5	20A05502T	Artificial Intelligence	
6	20A12502	Mobile Application Development using Android	
7	20A27505	Computer Applications in Food Processing	FT
8	20A54501	Optimization Techniques	Mathematics
9	20A56501	Materials Characterization Techniques	Physics
10	20A51501	Chemistry of Energy Materials	Chemistry

Note:

1. A student is permitted to register for Honours or a Minor in IV semester after the results of III Semester are declared and students may be allowed to take maximum two subjects per semester pertaining to their Minor from V Semester onwards.
2. A student shall not be permitted to take courses as Open Electives/Minor/Honours with content substantially equivalent to the courses pursued in the student's primary major.
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Semester-VII						
S.No.	Course Code	Course Name	L	T	P	Credits
1.	20A04701a 20A04701b 20A04701c	Professional Elective Course- III DSP Processors & Architectures Introduction to Internet of Things Satellite Communications	3	0	0	3
2.	20A04702a 20A04702b 20A04702c	Professional Elective Course- IV Real Time Operating Systems Digital Image Processing Radar Engineering	3	0	0	3
3.	20A04703a 20A05703b 20A04703c	Professional Elective Course- V Smart Sensors Nano Electronics Cellular & Mobile Communications	3	0	0	3
4.	20A52701a 20A52701b2 0A52701c	Humanities Elective - II Entrepreneurship and Incubation Management Science Enterprise Resource Planning	3	0	0	3
5.		Open Elective Course - III	3	0	0	3
6.		Open Elective Course - IV	3	0	0	3
7.	20A04707	Skill oriented course - V Industrial IoT & Automation	1	0	2	2
8.	20A04709	Evaluation of Industry Internship				3
Total						23

Open Elective Course - III

S.No	Course Code	Course Name	Offered by the Dept.
1	20A01704	Cost Effective Housing Techniques	CE
2	20A02704	IOT Applications in Electrical Engineering	EEE
3	20A03704	Product Design & Development	ME
4	20A05704a	Web Technologies	CSE & Allied/IT
5	20A05704b	VR & AR for Engineers	
6	20A05704c	Software Engineering	
7	20A27704	Human Nutrition	FT
8	20A54702	Numerical Methods for Engineers	Mathematics
9	20A56702	Sensors And Actuators for Engineering Applications	Physics
10	20A51702	Chemistry of Nanomaterials and Applications	Chemistry

Open Elective Course - IV

S.No	Course Code	Course Name	Offered by the Dept.
1	20A01705	Health, Safety & Environmental management	CE
2	20A02705	Renewable Energy Systems	EEE
3	20A03705	Introduction to Composite Materials	ME
4	20A05705a	Cyber Security	CSE & Allied/IT
5	20A05705b	Introduction to Full Stack Development	
6	20A27705	Waste and Effluent Management	FT
7	20A54703	Number theory & its applications	Mathematics
8	20A56703	Smart Materials and Devices	Physics
9	20A51703	Green Chemistry and Catalysis for Sustainable Environment	Chemistry

[Signature]
Principal



JNTUA B.Tech. R20 Regulations

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
(Established by Govt. of A.P., ACT No.30 of 2008)
ANANTAPUR – 515 002 (A.P) INDIA

B.TECH. - ARTIFICIAL INTELLIGENCE & DATA SCIENCE
Course Structure (R20) – III & IV Year

Semester-V						
S.No.	Course Code	Course Name	L	T	P	Credits
1.	20A05504c	Big Data Technologies	3	0	0	3
2.	20A05602T	Machine Learning	3	0	0	3
3.	20A30501T	Mining Massive Data Sets	3	0	0	3
4.		Professional Elective Course – I	3	0	0	3
	20A30502a	Software Engineering for AI				
	20A30502b	Artificial Neural Networks				
	20A05501T	Computer Networks				
5.		Open Elective Course – I	3	0	0	3
6.	20A30501P	Mining Massive Data Sets Lab	0	0	3	1.5
7.	20A05602P	Machine Learning Lab	0	0	3	1.5
8.		Skill oriented course – III	1	0	2	2
	20A30503	Web Application Design				
9.	20A30504	Evaluation of Community Service Project				1.5
Total						21.5

Open Elective-I

S.No	Course Code	Course Name	Offered by the Dept.
1	20A01505	Building Technology	CE
2	20A02505	Electric Vehicles	EEE
3	20A03505	3D Printing Technology	ME
4	20A04507	MATLAB Programming for Engineers	ECE/EEE
5	20A04508	Introduction to Control Systems	ECE/EEE
6	20A27505	Computer Applications in Food Processing	FT
7	20A54501	Optimization Techniques	Mathematics
8	20A56501	Materials Characterization Techniques	Physics
9	20A51501	Chemistry of Energy Materials	Chemistry

Note:

1. A student is permitted to register for Honours or a Minor in IV semester after the results of III Semester are declared and students may be allowed to take maximum two subjects per semester pertaining to their Minor from V Semester onwards.
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Nellore (Dist.) - 524 316.



JNTUA B.Tech. R20 Regulations

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
(Established by Govt. of A.P., ACT No.30 of 2008)
ANANTAPUR – 515 002 (A.P) INDIA

B.TECH. - COMPUTER SCIENCE & ENGINEERING
Course Structure (R20) – III & IV Year

Semester-V						
S.No.	Course Code	Course Name	L	T	P	Credits
1.	20A05501T	Computer Networks	3	0	0	3
2.	20A05502T	Artificial Intelligence	3	0	0	3
3.	20A05503	Formal Languages and Automata Theory	3	0	0	3
4.		Professional Elective Course – I	3	0	0	3
	20A05504a	Software Project Management				
	20A04702b	Digital Image Processing				
	20A05504c	Big Data Technologies				
5.		Open Elective Course – I	3	0	0	3
6.	20A05501P	Computer Networks Lab	0	0	3	1.5
7.	20A05502P	Artificial Intelligence Lab	0	0	3	1.5
8.		Skill oriented course – III	1	0	2	2
	20A05506	Advanced Web Application Development				
9.	20A05507	Evaluation of Community Service Project				1.5
Total						21.5

Open Elective-I

S.No.	Course Code	Course Name	Offered by the Dept.
1	20A01505	Building Technology	CE
2	20A02505	Electric Vehicles	EEE
3	20A03505	3D Printing Technology	ME
4	20A04507	MATLAB Programming for Engineers	ECE/EEE
5	20A04508	Introduction to Control Systems	ECE/EEE
6	20A27505	Computer Applications in Food Processing	FT
7	20A54501	Optimization Techniques	Mathematics
8	20A56501	Materials Characterization Techniques	Physics
9	20A51501	Chemistry of Energy Materials	Chemistry

Note:

1. A student is permitted to register for Honours or a Minor in IV semester after the results of III Semester are declared and students may be allowed to take maximum two subjects per semester pertaining to their Minor from V Semester onwards.
2. A student shall not be permitted to take courses as Open Electives/Minor/Honours with content substantially equivalent to the courses pursued in the student's primary major.
3. A student is permitted to select a Minor program only if the institution is already offering a Major degree program in that discipline


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JNTUA B.Tech. R20 Regulations

Semester-VII						
S.No.	Course Code	Course Name	L	T	P	Credits
1.	20A05701a 20A05701b 20A05701c	Professional Elective Course- III Cloud Computing Agile Methodologies Vehicular Adhoc Networks	3	0	0	3
2.	20A05702a 20A05702b 20A05702c	Professional Elective Course- IV Fundamentals of AR/VR Cryptography & Network Security Natural Language Processing	3	0	0	3
3.	20A05703a 20A05703b 20A05703c	Professional Elective Course- V Full Stack Development Block chain Technology and Applications Deep Learning	3	0	0	3
4.	20A52701a 20A52701b 20A52701c	Humanities Elective - II Entrepreneurship and Incubation Management Science Enterprise Resource Planning	3	0	0	3
5.		Open Elective Course - III	3	0	0	3
6.		Open Elective Course - IV	3	0	0	3
7.	20A05706	Skill oriented course - V Mobile Application Development	1	0	2	2
8.	20A05707	Evaluation of Industry Internship				3
Total						23

Open Elective-III

S.No.	Course Code	Course Name	Offered by the Dept.
1	20A01704	Cost Effective Housing Techniques	CE
2	20A02704	IOT Applications in Electrical Engineering	EEE
3	20A03704	Product Design & Development	ME
4	20A04704	Electronic Sensors	ECE
5	20A04506	Principles of Communication Systems	ECE
6	20A27704	Human Nutrition	FT
7	20A54702	Numerical Methods for Engineers	Mathematics
8	20A56702	Sensors And Actuators for Engineering Applications	Physics
9	20A51702	Chemistry of Nanomaterials and Applications	Chemistry

Open Elective-IV

S.No.	Course Code	Course Name	Offered by the Dept.
1	20A01705	Health, Safety & Environmental Management	CE
2	20A02705	Renewable Energy Systems	EEE
3	20A03705	Introduction to Composite Materials	ME
4	20A04705	Microcontrollers and Applications	ECE
5	20A04706	Principles of Cellular & Mobile Communications	ECE
6	20A27705	Waste and Effluent Management	FT
7	20A54703	Number theory & its applications	Mathematics
8	20A56703	Smart Materials and Devices	Physics
9	20A51703	Green Chemistry and Catalysis for Sustainable Environment	Chemistry

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Semester – 8 (Theory - 2, Project – 1)

S.No	Course No	Course Name	Category	L-T-P	Credits
1.		Professional Elective-IV	PE	3-0-0	3
	19A01801a1	Finite Element Methods			
	19A01801a2	Advanced R.C.C Structural Design			
	19A01801a3	Advanced steel structures			
	19A01801b1	Advanced Foundation Engineering			
	19A01801b2	Soil structure interaction			
	19A01801e1	Environmental Impact Assessment			
	19A01801e2	Environmental Economics			
	19A01801d1	Docks and Harbor Engineering			
	19A01801d2	Traffic Analysis			
	19A01801e1	Design and Drawing of Irrigation Structures			
	19A01801e2	Water Shed Management			
	19A01801e3	Sustainable Water Resources Development			
	2.				
19A01802a		Disaster Management.			
19A01802b		Global Warming and climate changes			
19A02802a		IoT Applications in Electrical Engineering			
19A02802b		Smart Electric Grid			
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				
3.	19A01803	Project	PR	-----	7
				Total	13

Areas for Socially Relevant Project in 5th Semester

- a) Water quality analysis in a village /town
- b) Survey camp

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Semester-VI						
S.No	CourseCode	Course Name	L	T	P	Credits
1.	20A01601	Design of Steel Structures	3	0	0	3
2.	20A01602	Highway Engineering	3	0	0	3
3.	20A01603	Hydrology and Irrigation Engineering	3	0	0	3
4.	20A01604a 20A01604b 20A01604c	Professional Elective Course- II Experimental Stress Analysis Foundation Engineering Environmental Impact Assessment	3	0	0	3
5.		Open Elective Course - II	3	0	0	3
6.	20A01606	Design Studio Lab with STAAD Pro.	0	0	3	1.5
7.	20A01607	Highway Materials Lab	0	0	3	1.5
8.	20A01608	Concrete Technology Lab	0	0	3	1.5
9.	20A01609	Skill oriented course - IV BIM Fundamentals for Civil Engineers	1	0	2	2
10.	20A99601	Noncredit mandatory Course Intellectual Property Rights & Patents	2	0	0	0
Total						21.5
Industry Internship (Mandatory) for 6 - 8 weeks duration during summer vacation						

Open Elective - II

S.No.	CourseCode	Course Name	Offered by the Dept.
1	20A02605	Smart Electric Grid	EEE
2	20A03605	Introduction to Robotics	ME
3	20A04605	Signal Processing	ECE
4	20A04701b	Introduction to Internet of Things	ECE/CSE
5	20A05605a	Principles of Operating Systems	CSE& Allied/IT
6	20A05605b	Foundations of Machine Learning	
7	20A05605c	Data Analytics Using R	
8	20A27605	Food Refrigeration and Cold Chain Management	FT
9	20A54701	Wavelet Transforms & its applications	Mathematics
10	20A56701	Physics Of Electronic Materials and Devices	Physics
11	20A51701	Chemistry of Polymers and its Applications	Chemistry

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

JNTUA Curriculum
Electrical & Electronics Engineering R20 Regulations
B. Tech Course Structure

Semester-VI						
S.No.	CourseCode	Course Name	L	T	P	Credits
1.	20A02601T	Power System Analysis	3	0	0	3
2.	20A02602T	Digital Computing Platforms	3	0	0	3
3.	20A04502T	Digital Signal Processing	3	0	0	3
4.	20A02604a 20A02604b 20A02604c	Professional Elective Course- II HVDC and FACTS Nonlinear System Analysis Design of Photovoltaic Systems	3	0	0	3
5.		Open Elective Course - II	0	0	3	1.5
6.	20A02601P	Power Systems AnalysisLab	0	0	3	1.5
7.	20A02602P	Digital Computing Platforms Lab	0	0	3	1.5
8.	20A04502P	Digital Signal Processing Lab	1	0	2	2
9.	20A02606	Skill oriented course - IV Applications of Soft Computing Tools in Electrical Engineering				
10.	20A99601	Mandatory Non-credit Course Intellectual Property Rights & Patents	2	0	0	0
Total						21.5
Industry Internship (Mandatory) for 6 - 8 weeks duration during summer vacation						

Open Elective Course - II

S.No.	Course Code	Course Name	Offered by the Dept.
1	20A01605	Environmental Economics	CE
2	20A03605	Introduction to Robotics	ME
3	20A04606	Basic VLSI Design	ECE
4	20A04701b	Introduction to Internet of Things	ECE/CSE
5	20A05605a	Principles of Operating Systems	CSE & Allied/IT
6	20A05605b	Foundations of Machine Learning	
7	20A05605c	Data Analytics Using R	
8	20A27605	Food Refrigeration and Cold Chain Management	FT
9	20A54701	Wavelet Transforms & its applications	Mathematics
10	20A56701	Physics Of Electronic Materials and Devices	Physics
11	20A51701	Chemistry of Polymers and its Applications	Chemistry

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JNTUA Curriculum
Electrical & Electronics Engineering R19 Regulations
B. Tech Course Structure

Semester – VIII (Theory - 2)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A02801a	Professional Elective-IV Electrical Distribution SystemAutomation	PE	3-0-0	3
	19A02801b	FPGA based controller			
	19A02801c	designIntelligent Control			
	19A04604b	TechniquesPrinciples 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			
	19A04802b	ProcessingPrinciples of Cellular and MobileCommunications			
	19A04802c	Industrial Electronics			
	19A04802d	Electronic Instrumentation			
	19A05802a	Block Chain Technology andApplications			
	19A05802b	MEAN Stack Technology			
	19A27802a	Food Plants Utilities & Services			
	19A27802b	Nutraceuticals & Functional Foods			
	19A54802a	Mathematical Modeling &			
19A51802a	SimulationGreen Chemistry and Catalysis for Sustainable Environment				
3.	19A02803	Project	PR	-----	7
				Total	13

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(Established by Govt. of A.P., ACT No.30 of 2008)
ANANTHAPURAMU – 515 002 (A.P) INDIA

MECHANICAL ENGINEERING

II B.TECH.

Semester-III							
S.No.	Course Code	Course Name	Category	Hours per week			Credits
				L	T	P	
1.	20A54303	Complex variables, Transforms and Application of PDE	BS	3	0	0	3
2.	20A01302T	Fluid Mechanics & Hydraulic Machines	PC	3	0	0	3
3.	20A03301T	Manufacturing Processes	PC	3	0	0	3
4.	20A03302	Thermodynamics	PC	3	0	0	3
5.	20A01305T	Mechanics of Materials	ES	3	0	0	3
6.	20A01302P	Fluid Mechanics & Hydraulic Machines Lab	PC	0	0	3	1.5
7.	20A03301P	Manufacturing Processes Lab	PC	0	0	3	1.5
8.	20A01305P	Mechanics of Materials Lab	ES	0	0	3	1.5
9.	20A05305	Skill oriented course – I Application Development with Python	SC	1	0	2	2
10.	20A99201	Mandatory noncredit course – II Environmental Science	MC	3	0	0	0
Total							21.5

Semester-IV							
S.No.	Course Code	Course Name	Category	Hours per week			Credits
				L	T	P	
1.	20A54402	Numerical Methods & Probability Theory	BS	3	0	0	3
2.	20A03401T	Applied Thermodynamics	PC	3	0	0	3
3.	20A03402	Kinematics of Machinery	PC	3	0	0	3
4.	20A03403T	Manufacturing Technology	PC	3	0	0	3
5.	20A52301	Humanities Elective- I Managerial Economics & Financial Analysis	HS	3	0	0	3
	20A52302	Organizational Behavior					
	20A52303	Business Environment					
6.	20A03401P	Applied Thermodynamics Lab	PC	0	0	3	1.5
7.	20A03403P	Manufacturing Technology Lab	PC	0	0	3	1.5
8.	20A03404	Computer Aided Machine Drawing	PC	0	0	3	1.5
9.	20A52401	Skill oriented course – II Soft skills	SC	1	0	2	2
10.	20A99401	Mandatory noncredit course – III Design Thinking for Innovation	MC	2	1	0	0
11.	20A99301	NSS/NCC/NSO Activities	-	0	0	2	0
Total							21.5
Community Service Internship/Project (Mandatory) for 6 weeks duration during summer vacation							



Semester-VI						
S.No.	Course Code	Course Name	L	T	P	Credits
1.	20A03601	Dynamics of Machinery	3	0	0	3
2.	20A03602	Finite Element Methods (FEM)	3	0	0	3
3.	20A03603T	Heat Transfer	3	0	0	3
4.	20A03604a 20A03604b 20A03604c	Professional Elective – II Non-Destructive Testing (NDT) Production and operations management Total Quality Management (TQM)	3	0	0	3
5.		Open Elective Course – II	3	0	0	3
6.	20A03606	Computer Aided Design Laboratory	0	0	3	1.5
7.	20A03607	Computer Aided Manufacturing Laboratory	0	0	3	1.5
8.	20A03603P	Heat Transfer Laboratory	0	0	3	1.5
9.	20A03608	Skill oriented course - IV 3D Printing practice	1	0	2	2
10.	20A99601	Mandatory Non-credit Course Intellectual Property Rights & Patents	2	0	0	0
Total						21.5
Industry Internship (Mandatory) for 6 - 8 weeks duration during summer vacation						

Open Elective Course – II

S.No	Course Code	Course Name	Offered by the Dept.
1	20A01704	Environmental Economics	CE
2	20A02605	Smart Electric Grid	EEE
3	20A04605	Signal Processing	ECE
4	20A04701b	Introduction to Internet of Things	ECE/CSE
5	20A05605a	Principles of Operating Systems	CSE & Allied /IT
6	20A05605b	Foundations of Machine Learning	
7	20A05605c	Data Analytics Using R	
8	20A27605	Food Refrigeration and Cold Chain Management	FT
9	20A54701	Wavelet Transforms & its applications	Mathematics
10	20A56701	Physics Of Electronic Materials and Devices	Physics
11	20A51701	Chemistry of Polymers and its Applications	Chemistry

Semester – VIII (Theory - 2)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A03801a	Professional Elective-IV Autotronics	PE	3-0-0	3
	19A03801b	Mechanical Vibrations			
	19A03801c	Refrigeration and Air conditioning			
	19A03801d	Total Quality Management (TQM)			
2.	19A01802a	Open Elective-IV Disaster Management.	OE	3-0-0	3
	19A01802b	Global Warming and climate changes			
	19A02802a	IoT Applications in Electrical Engineering			
	19A02802b	Smart Electric Grid			
	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.	19A03803	Project	PR	-----	7
				Total	13

Semester – VIII(Theory - 2)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A04801a	Professional Elective-IV Advanced 3G and 4G Wireless Mobile Communications	PE	3-0-0	3
	19A04801b	Introduction to Internet of Things			
	19A04801c	Fuzzy sets, logic and systems and Applications			
	19A04801d	Biomedical Signal Processing			
	19A04801e	Analog IC design			
	2.	19A01802a			
19A01802b	Global Warming and climate changes				
19A02802a	IoT Applications in Electrical Engineering				
19A02802b	Smart Electric Grid				
19A03802a	Energy conservation and management				
19A03802b	Non destructive testing				
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.	19A04803	Project	PR	-----	7
				Total	13

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Semester-VI						
S.No	Course Code	Course Name	L	T	P	Credits
1.	20A04601T	Antennas & Microwave Engineering	3	0	0	3
2.	20A04602T	VLSI Design	3	0	0	3
3.	20A04603T	Communication Networks	3	0	0	3
4.		Professional Elective Course- II	3	0	0	3
	20A04604a	Electronic Measurements and Instrumentation				
	20A04604b	Embedded System Design				
	20A04604c	Optical Communications				
5.		Open Elective - II	3	0	0	3
6.	20A04601P	Antennas & Microwave Engineering Lab	0	0	3	1.5
7.	20A04602P	VLSI Design Lab	0	0	3	1.5
8.	20A04603P	Communication Networks Lab	0	0	3	1.5
9.		Skill oriented course - IV	1	0	2	2
	20A04607	RF System Design				
10.		Mandatory Non-credit Course	2	0	0	0
	20A99601	Intellectual Property Rights & Patents				
Total						21.5
Industry Internship (Mandatory) for 6 - 8 weeks duration during summer vacation						

Open Elective Course - II

S.No.	Course Code	Course Name	Offered by the Dept.
1	20A01605	Environmental Economics	CE
2	20A02605	Smart Electric Grid	EEE
3	20A03605	Introduction to Robotics	ME
4	20A05605a	Principles of Operating Systems	CSE & Allied/IT
5	20A05605b	Foundations of Machine Learning	
6	20A05605c	Data Analytics Using R	
7	20A27605	Food Refrigeration and Cold Chain Management	FT
8	20A54701	Wavelet Transforms & its applications	Mathematics
9	20A56701	Physics Of Electronic Materials and Devices	Physics
10	20A51701	Chemistry of Polymers and its Applications	Chemistry

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R 20 Regulations

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Artificial Intelligence & Data Science

II B.TECH.

Semester-III							
S.No	Course Code	Course Name	Category	Hours per week			Credits
				L	T	P	
1.	20A54304	Discrete Mathematics & Graph Theory	BS	3	0	0	3
2.	20A04304T	Digital Electronics& Microprocessors	ES	3	0	0	3
3.	20A05301T	Advanced Data Structures & Algorithms	PC	3	0	0	3
4.	20A05302T	Object Oriented Programming Through Java	PC	3	0	0	3
5.	20A05303	Computer Organization	PC	3	0	0	3
6.	20A04304P	Digital Electronics& Microprocessors Lab	ES	0	0	3	1.5
7.	20A05301P	Advanced Data Structures and Algorithms Lab	PC	0	0	3	1.5
8.	20A05302P	Object Oriented Programming Through Java Lab	PC	0	0	3	1.5
9.	20A05304	Skill Oriented Course – I Web application Development	SC	1	0	2	2
10.	20A99201	Mandatory noncredit course - II Environmental Science	MC	3	0	0	0
Total							21.5

Semester-IV							
S.No	Course Code	Course Name	Category	Hours per week			Credits
				L	T	P	
1.	20A54404	Deterministic & Stochastic Statistical Methods	BS	3	0	0	3
2.	20A05401T	Database Management Systems	PC	3	0	0	3
3.	20A05402T	Operating Systems	PC	3	0	0	3
4.	20A30401T	Artificial Intelligence	PC	3	0	0	3
5.	20A52301	Humanities Elective- I Managerial Economics & Financial Analysis	HS	3	0	0	3
	20A52302	Organizational Behaviour					
	20A52303	Business Environment					
6.	20A05401P	Database Management SystemsLab	PC	0	0	3	1.5
7.	20A05402P	Operating SystemsLab	PC	0	0	3	1.5
8.	20A30401P	Artificial Intelligence Lab	PC	0	0	3	1.5
9.	20A05404	Skill Oriented Course– II Exploratory Data Analysis with R	SC	1	0	2	2
10.	20A99401	Mandatory noncredit course – III Design Thinking for Innovation	MC	2	1	0	0
11.	20A99301	NSS/NCC/NSO Activities	MC	0	0	2	0
Total							21.5
Community Service Internship/Project(Mandatory) for 6 weeks duration during summer vacation							

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Computer Science & Engineering

II B.TECH.

Semester-III

S.No	Course Code	Course Name	Category	Hours per week			Credits
				L	T	P	
1.	20A54304	Discrete Mathematics & Graph Theory	BS	3	0	0	3
2.	20A04304T	Digital Electronics& Microprocessors	ES	3	0	0	3
3.	20A05301T	Advanced Data Structures & Algorithms	PC	3	0	0	3
4.	20A05302T	Object Oriented Programming Through Java	PC	3	0	0	3
5.	20A05303	Computer Organization	PC	3	0	0	3
6.	20A04304P	Digital Electronics& Microprocessors Lab	ES	0	0	3	1.5
7.	20A05301P	Advanced Data Structures and Algorithms Lab	PC	0	0	3	1.5
8.	20A05302P	Object Oriented Programming Through Java Lab	PC	0	0	3	1.5
9.	20A05304	Skill Oriented Course – I Web application Development	SC	1	0	2	2
10.	20A99201	Mandatory noncredit course - II Environmental Science	MC	3	0	0	0
Total							21.5

Semester-IV

S.No	Course Code	Course Name	Category	Hours per week			Credits
				L	T	P	
1.	20A54404	Deterministic & Stochastic Statistical Methods	BS	3	0	0	3
2.	20A05401T	Database Management Systems	PC	3	0	0	3
3.	20A05402T	Operating Systems	PC	3	0	0	3
4.	20A05403T	Software Engineering	PC	3	0	0	3
5.	20A52301	Humanities Elective- I Managerial Economics & Financial Analysis	HS	3	0	0	3
	20A52302	Organizational Behaviour					
	20A52303	Business Environment					
6.	20A05401P	Database Management SystemsLab	PC	0	0	3	1.5
7.	20A05402P	Operating SystemsLab	PC	0	0	3	1.5
8.	20A05403P	Software Engineering Lab	PC	0	0	3	1.5
9.	20A05404	Skill Oriented Course- II Exploratory Data Analysis with R	SC	1	0	2	2
10.	20A99401	Mandatory nonerudit course – III Design Thinking for Innovation	MC	2	1	0	0
11.	20A99301	NSS/NCC/NSO Activities	MC	0	0	2	0
Total							21.5

Community Service Internship/Project(Mandatory) for 6 weeks duration during summer vacation

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Semester-VI						
S.No	Course Code	Course Name	L	T	P	Credits
1.	20A05601T	Compiler Design	3	0	0	3
2.	20A05602T	Machine Learning	3	0	0	3
3.	20A05603T	Internet of Things	3	0	0	3
4.		Professional Elective Course-II	3	0	0	3
	20A05604a	Software Testing				
	20A05604b	Advanced Computer Architecture				
	20A05604c	Computer Vision				
5.		Open Elective Course - II	3	0	0	3
6.	20A05601P	Compiler Design Lab	0	0	3	1.5
7.	20A05602P	Machine Learning Lab	0	0	3	1.5
8.	20A05603P	Internet of Things Lab	0	0	3	1.5
9.		Skill oriented course - IV	1	0	2	2
	20A52401	Soft Skills				
10.		Mandatory Non-credit Course	2	0	0	0
	20A99601	Intellectual Property Rights & Patents				
Total						21.5
Industry Internship (Mandatory) for 6 – 8 weeks duration during summer vacation						

Open Elective-II

S.No	Course Code	Course Name	Offered by the Dept.
1	20A01605	Environmental Economics	CE
2	20A02605	Smart Electric Grid	EEE
3	20A03605	Introduction to Robotics	ME
4	20A04605	Signal Processing	ECE
5	20A04606	Basic VLSI Design	ECE
6	20A27605	Food Refrigeration and Cold Chain Management	FT
7	20A54701	Wavelet Transforms & its applications	Mathematics
8	20A56701	Physics Of Electronic Materials and Devices	Physics
9	20A51701	Chemistry of Polymers and its Applications	Chemistry

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Semester – 8 (Theory - 2, Project – 1)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A05801a	Professional Elective-IV Dev Ops	PE	3-0-0	3
	19A05801b	Deep Learning			
	19A05801c	Adhoc & Sensor Networks			
2.	19A01802a	Open Elective-IV Disaster Management	OE	3-0-0	
	19A01802b	Global Warming and climate changes			
	19A02802a	IoT Applications in Electrical Engineering			
	19A02802b	Smart Electric Grid			
	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				
3.	19A05803	Project	PR	-----	7
Total					13

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