



R 20 Regulations

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

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 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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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
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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
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ELECTRICAL AND ELECTRONICS ENGINEERING

II B.TECH.

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.		Humanities Elective – I	HS	3	0	0	3
	20A52301	Managerial Economics & Financial Analysis					
	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.		Skill oriented course – I	SC	1	0	2	2
	20A05305	Application development with Python					
10		Mandatory noncredit course – II	MC	3	0	0	0
	20A52201	Universal Human Values					
11	20A99301	NSS/NCC/NSO Activities	MC	-	-	-	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.	20A04404T	Analog Electronic Circuits	ES	3	0	0	3
3.	20A02401T	Power Electronics	PC	3	0	0	3
4.	20A02402T	AC Machines	PC	3	0	0	3
5.	20A02403T	Electromagnetic Field Theory	PC	3	0	0	3
6.	20A04404P	Analog Electronic Circuits Lab	PC	0	0	3	1.5
7.	20A02401P	Power Electronics Lab	PC	0	0	3	1.5
8.	20A02402P	AC Machines Lab	PC	0	0	3	1.5
9.		Skill oriented course – II	SC	1	0	2	2
	20A02404	Circuits Simulation & Analysis using PSPICE					
10		Mandatory noncredit course – III	MC	2	1	0	0
	20A99401	Design Thinking for Innovation					
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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
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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



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.		Professional Elective Course- II	3	0	0	3
	20A01604a	Experimental Stress Analysis				
	20A01604b	Foundation Engineering				
	20A01604c	Environmental Impact Assessment				
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.		Skill oriented course - IV	1	0	2	2
	20A01609	BIM Fundamentals for Civil Engineers				
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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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	DataAnalytics 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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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.		Professional Elective Course- II	3	0	0	3
	20A02604a	HVDC and FACTS				
	20A02604b	Nonlinear System Analysis				
	20A02604c	Design of Photovoltaic Systems				
5.		Open Elective Course – II	3	0	0	3
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	0	0	3	1.5
9.		Skill oriented course - IV	1	0	2	2
	20A02606	Applications of Soft Computing Tools in Electrical Engineering				
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	Offeredby 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



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.		Professional Elective – II	3	0	0	3
	20A03604a	Non-Destructive Testing (NDT)				
	20A03604b	Production and operations management				
	20A03604c	Total Quality Management (TQM)				
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.		Skill oriented course - IV	1	0	2	2
	20A03608	3D Printing practice				
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	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