

1.2.1 Name of the all programmes adopting CBCS/Name of all programmes adopting elective course system

S.No	Name of the document	Page Number
1.	B.Tech Syllabus – Regulations –R-20,R-19, R-15 & R-13	2-98
2.	M.Tech Syllabus –Regulations –R09 & R-17	99-118



**Jawaharlal Nehru Technological
University Anantapur**

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

Ananthapuramu-515 002 (A.P) India

**First Year B.Tech
Course Structures and Syllabi under
R20 Regulations**




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

Semester-0

Induction Program: 3 weeks
(Common for All Branches of Engineering)

S.No	Course 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


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ANANTAPUR – 515 002 (A.P) INDIA

Civil Engineering

Semester - 1 (Theory - 5, Lab - 4)					
S.No	Course No	Course Name	Category	L-T-P/D	Credits
1.	20A54101	Linear Algebra and Calculus	BS	3-0-0	3
2.	20A56101T	Engineering Physics	BS	3-0-0	3
3.	20A52101T	Communicative English	HS	3-0-0	3
4.	20A02101T	Basic Electrical & Electronics Engineering	ES	3-0-0	3
5.	20A03101T	Engineering Drawing	ES	1-0-0/2	2
6.	20A03101P	Engineering Graphics Lab	ES	0-0-2	1
7.	20A56101P	Engineering Physics Lab	BS	0-0-3	1.5
8.	20A52101P	Communicative English Lab	HS	0-0-3	1.5
9.	20A02101P	Basic Electrical & Electronics Engineering Lab	ES	0-0-2	1.5
Total					19.5

Semester – 2 (Theory – 5, Lab – 5)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	20A54201	Differential Equations and Vector Calculus	BS	3-0-0	3
2.	20A51201T	Engineering Chemistry	BS	3-0-0	3
3.	20A05201T	C-Programming & Data Structures	ES	3-0-0	3
4.	20A01201T	Strength of Materials	ES	3-0-0	3
5.	20A03202	Engineering Workshop	ES	0-0-3	1.5
6.	20A05202	IT Workshop	ES	0-0-3	1.5
7.	20A05201P	C-Programming & Data Structures Lab	ES	0-0-3	1.5
8.	20A51201P	Engineering Chemistry Lab	BS	0-0-3	1.5
9.	20A01201P	Strength of Materials Lab	ES	0-0-3	1.5
10	20A99201	Environmental Science	MC	3-0-0	0.0
Total					19.5

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Electrical & Electronics Engineering

Semester - 1 (Theory - 5, Lab - 4)

S.No	Course No	Course Name	Category	L-T-P/D	Credits
1.	20A54101	Linear Algebra and Calculus	BS	3-0-0	3
2.	20A56201T	Applied Physics	BS	3-0-0	3
3.	20A52101T	Communicative English	HS	3-0-0	3
4.	20A02101T	Fundamentals of Electrical Circuits	ES	3-0-0	3
5.	20A03101T	Engineering Drawing	ES	1-0-0/2	2
6.	20A03101P	Engineering Graphics Lab	ES	0-0-2	1
7.	20A56201P	Applied Physics Lab	BS	0-0-3	1.5
8.	20A52101P	Communicative English Lab	HS	0-0-3	1.5
9.	20A02101P	Fundamentals of Electrical Circuits Lab	ES	0-0-2	1.5
Total					19.5

Semester – 2 (Theory – 5, Lab – 5)

S.No	Course No	Course Name	Category	L-T-P	Credits
1.	20A54201	Differential Equations and Vector Calculus	BS	3-0-0	3
2.	20A51101T	Chemistry	BS	3-0-0	3
3.	20A05201T	C-Programming & Data Structures	ES	3-0-0	3
4.	20A04101T	Electronic Devices & Circuits	ES	3-0-0	3
5.	20A03202	Engineering Workshop	LC	0-0-3	1.5
6.	20A05202	IT Workshop	LC	0-0-3	1.5
7.	20A05201P	C-Programming & Data Structures Lab	ES	0-0-3	1.5
8.	20A51101P	Chemistry Lab	BS	0-0-3	1.5
9.	20A04101P	Electronic Devices & Circuits Lab	ES	0-0-3	1.5
10.	20A99201	Environmental Science	MC	3-0-0	0.0
Total					19.5

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Mechanical Engineering

Semester - 1 (Theory - 5, Lab - 4)

S.No	Course No	Course Name	Category	L-T-P	Credits
1.	20A54101	Linear Algebra and Calculus	BS	3-0-0	3
2.	20A51201T	Engineering Chemistry	BS	3-0-0	3
3.	20A05201T	C-Programming & Data Structures	ES	3-0-0	3
4.	20A02101T	Basic Electrical & Electronics Engineering	ES	3-0-0	3
5.	20A03202	Engineering Workshop	ES	0-0-3	1.5
6.	20A05202	IT Workshop	ES	0-0-3	1.5
7.	20A51201P	Engineering Chemistry Lab	BS	0-0-3	1.5
8.	20A05201P	C-Programming & Data Structures Lab	ES	0-0-3	1.5
9.	20A02101P	Basic Electrical & Electronics Engineering Lab	ES	0-0-2	1.5
Total					19.5

Semester – 2 (Theory – 5, Lab – 5)

S.No	Course No	Course Name	Category	L-T-P/D	Credits
1.	20A54201	Differential Equations and Vector Calculus	BS	3-0-0	3
2.	20A56101T	Engineering Physics	BS	3-0-0	3
3.	20A52101T	Communicative English	HS	3-0-0	3
4.	20A03201T	Material Science & Engineering	ES	3-0-0	3
5.	20A03101T	Engineering Drawing	ES	1-0-0/2	2
6.	20A03101P	Engineering Graphics Lab	ES	0-0-2	1
7.	20A52101P	Communicative English Lab	HS	0-0-3	1.5
8.	20A56101P	Engineering Physics Lab	BS	0-0-3	1.5
9.	20A03201P	Material Science Lab	ES	0-0-3	1.5
10.	20A52201	Universal Human Values	MC	3-0-0	0.0
Total					19.5

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Electronics & Communication Engineering

Semester - 1 (Theory - 5, Lab - 4)					
S.No	Course No	Course Name	Category	L-T-P/D	Credits
1.	20A54101	Linear Algebra and Calculus	BS	3-0-0	3
2.	20A56201T	Applied Physics	BS	3-0-0	3
3.	20A52101T	Communicative English	HS	3-0-0	3
4.	20A02101T	Fundamentals of Electrical Circuits	ES	3-0-0	3
5.	20A03101T	Engineering Drawing	ES	1-0-0/2	2
6.	20A03101P	Engineering Graphics Lab	ES	0-0-2	1
7.	20A56201P	Applied Physics Lab	BS	0-0-3	1.5
8.	20A52101P	Communicative English Lab	HS	0-0-3	1.5
9.	20A02101P	Fundamentals of Electrical Circuits Lab	ES	0-0-2	1.5
Total					19.5

Semester - 2 (Theory - 5, Lab - 5)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	20A54201	Differential Equations and Vector Calculus	BS	3-0-0	3
2.	20A51101T	Chemistry	BS	3-0-0	3
3.	20A05201T	C-Programming & Data Structures	ES	3-0-0	3
4.	20A04101T	Electronic Devices & Circuits	ES	3-0-0	3
5.	20A03202	Engineering Workshop	LC	0-0-3	1.5
6.	20A05202	IT Workshop	LC	0-0-3	1.5
7.	20A05201P	C-Programming & Data Structures Lab	ES	0-0-3	1.5
8.	20A51101P	Chemistry Lab	BS	0-0-3	1.5
9.	20A04101P	Electronic Devices & Circuits Lab	ES	0-0-3	1.5
10.	20A99201	Environmental Science	MC	3-0-0	0.0
Total					19.5

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CSE
Course Structure (R20)

Semester - 1 (Theory - 5, Lab - 4)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	20A54101	Linear Algebra and Calculus	BS	3-0-0	3
2.	20A51101T	Chemistry	BS	3-0-0	3
3.	20A05201T	C-Programming & Data Structures	ES	3-0-0	3
4.	20A02101T	Basic Electrical & Electronics Engineering	ES	3-0-0	3
5.	20A03202	Engineering Workshop	LC	0-0-3	1.5
6.	20A05202	IT Workshop	LC	0-0-3	1.5
7.	20A51101P	Chemistry Lab	BS	0-0-3	1.5
8.	20A05201P	C-Programming & Data Structures Lab	ES	0-0-3	1.5
9.	20A02101P	Basic Electrical & Electronics Engineering Lab	ES	0-0-2	1.5
Total					19.5

Semester – 2 (Theory – 5, Lab – 5)					
S.No	Course No	Course Name	Category	L-T-P/D	Credits
1.	20A54202	Probability & Statistics	BS	3-0-0	3
2.	20A56201T	Applied Physics	BS	3-0-0	3
3.	20A52101T	Communicative English	HS	3-0-0	3
4.	20A05101T	Python Programming & Data Science	ES	3-0-0	3
5.	20A03101T	Engineering Drawing	ES	1-0-0/2	2
6.	20A03101P	Engineering Graphics Lab	ES	0-0-2	1
7.	20A52101P	Communicative English Lab	HS	0-0-3	1.5
8.	20A56201P	Applied Physics Lab	BS	0-0-3	1.5
9.	20A05101P	Python Programming & Data Science Lab	ES	0-0-3	1.5
10	20A52201	Universal Human Values	MC	3-0-0	0.0
Total					19.5

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**Artificial Intelligence & Data Science
Course Structure (R20)**

Semester - 1 (Theory - 5, Lab - 4)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	20A54101	Linear Algebra and Calculus	BS	3-0-0	3
2.	20A51101T	Chemistry	BS	3-0-0	3
3.	20A05201T	C-Programming & Data Structures	ES	3-0-0	3
4.	20A02101T	Basic Electrical & Electronics Engineering	ES	3-0-0	3
5.	20A03202	Engineering Workshop	LC	0-0-3	1.5
6.	20A05202	IT Workshop	LC	0-0-3	1.5
7.	20A51101P	Chemistry Lab	BS	0-0-3	1.5
8.	20A05201P	C-Programming & Data Structures Lab	ES	0-0-3	1.5
9.	20A02101P	Basic Electrical & Electronics Engineering Lab	ES	0-0-2	1.5
Total					19.5

Semester – 2 (Theory – 5, Lab – 5)					
S.No	Course No	Course Name	Category	L-T-P/D	Credits
1.	20A54202	Probability & Statistics	BS	3-0-0	3
2.	20A56201T	Applied Physics	BS	3-0-0	3
3.	20A52101T	Communicative English	HS	3-0-0	3
4.	20A05101T	Python Programming & Data Science	ES	3-0-0	3
5.	20A03101T	Engineering Drawing	ES	1-0-0/2	2
6.	20A03101P	Engineering Graphics Lab	ES	0-0-2	1
7.	20A52101P	Communicative English Lab	HS	0-0-3	1.5
8.	20A56201P	Applied Physics Lab	BS	0-0-3	1.5
9.	20A05101P	Python Programming & Data Science Lab	ES	0-0-3	1.5
10	20A52201	Universal Human Values	MC	3-0-0	0.0
Total					19.5

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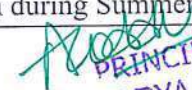
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ANANTHAPURAMU – 515 002 (A.P) INDIA

CIVIL ENGINEERING

II B.TECH.

SEMESTER - III							
S.No.	Course Code	Course Name	Category	Hours per week			Credits
				L	T	P	
1.	20A54301	Probability and Statistics for Civil Engineering	BS	3	0	0	3
2.	20A01301	Advanced Strength of Materials	PC	3	0	0	3
3.	20A01302T	Fluid Mechanics and Hydraulic Machines	PC	3	0	0	3
4.	20A01303T	Surveying	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.	20A01304	Basic Civil Engineering Laboratory	PC	0	0	3	1.5
7.	20A01302P	Fluid Mechanics and Hydraulic Machines Lab	PC	0	0	3	1.5
8.	20A01303P	Surveying 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	-	-	-	2	0
Total							21.5

SEMESTER - IV							
S.No.	Course Code	Course Name	Category	Hours per week			Credits
				L	T	P	
1.	20A54401	Mathematical Modeling & Optimization Techniques	BS	3	0	0	3
2.	20A01401T	Engineering Geology	ES	3	0	0	3
3.	20A01402	Structural Analysis – I	PC	3	0	0	3
4.	20A01403T	Concrete Technology	PC	3	0	0	3
5.	20A01404T	Environmental Engineering - I	PC	3	0	0	3
6.	20A01401P	Engineering Geology Lab	ES	0	0	3	1.5
7.	20A01405	Concrete Materials Lab	PC	0	0	3	1.5
8.	20A01404P	Environmental Engineering Lab	PC	0	0	3	1.5
9.	20A52401	Skill oriented course – II Soft Skills	SC	1	0	2	2
10.	20A99401	Mandatory non-credit course - III Design Thinking for Innovation	MC	2	1	0	0
Total							21.5
Mandatory Community Service Internship for 6 weeks duration during Summer Vacation							


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CIVIL ENGINEERING

Note:

1. Eligible and interested students can register either for Honors or for a Minor in IV Semester as per the guidelines issued by the University
2. Students shall register for NCC/NSS/NSO activities and will be required to participate in an activity for two hours in a week during third semester.
3. Lateral entry students shall undergo a bridge course in Mathematics during third semester

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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	3	0	0	0
	20A99401	Design Thinking for Innovation					
Total							21.5
Community Service Internship (Mandatory) for 6 weeks duration during summer vacation							

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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 20A52302 20A52303	Humanities Elective- I Managerial Economics & Financial Analysis Organizational Behavior Business Environment	HS	3	0	0	3
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							

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

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R 20 Regulations

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 (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 20A52302 20A52303	Humanities Elective– I Managerial Economics & Financial Analysis Organizational Behaviour Business Environment	HS	3	0	0	3
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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JNTUA Curriculum
B. Tech Course Structure


Semester - 0 (Theory - 8, Lab - 7) Common for All Branches of Engineering				
S.No	Course 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


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CIVIL ENGINEERING

Semester - 1 (Theory - 4, Lab - 4)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A54101	Algebra and Calculus	BS	3-1-0	4
2.	19A56102T	Engineering 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.	19A03101	Engineeering Workshop	LC	0-0-2	1
6.	19A56102P	Engineering 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 - 2 (Theory - 4, Lab - 5)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A02201T	Basic Electrical & Electronics Engineering	ES	3-0-0	3
2.	19A54201	Differential Equations and Vector Calculus	BS	3-1-0	4
3.	19A51101T	Engineering Chemistry	BS	3-0-0	3
4.	19A05201T	Data Structures	ES	3-0-0	3
5.	19A01201	Civil Engineering Workshop	LC	0-0-2	1
6.	19A03102	Engineering Graphics Lab	ES	1-0-4	3
7.	19A02201P	Basic Electrical & Electronics Engineering Lab	ES	0-0-3	1.5
8.	19A51101P	Engineering Chemistry Lab	BS	0-0-3	1.5
9.	19A05201P	Data Structures Lab	ES	0-0-3	1.5
Total					21.5



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JNTUA Curriculum
Civil Engineering B. Tech Course Structure

2nd Year to 4th Years Course Structure

Semester – 3 (Theory - 6, Lab - 3)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A54301	Complex Variables, Transforms and Partial Differential Equations	BS	2-0-0	2
2.	19A01301T	Strength of Materials-I	PC	2-1-0	3
3.	19A01302T	Fluid Mechanics	PC	2-1-0	3
4.	19A01303T	Surveying	PC	2-1-0	3
5.	19A01304	Building Materials and Construction	PC	3-0-0	3
6.	19A05304T	Python Programming	ES	2-1-0	3
7.	19A01301P	Strength of Material Lab	PC	0-0-3	1.5
8.	19A01302P	Fluid Mechanics Lab	PC	0-0-3	1.5
9.	19A01303P	Surveying Lab	PC	0-0-3	1.5
10.	19A99301	Environmental Science	MC	3-0-0	0
Total:					21.5

Semester - 4 (Theory - 6, Lab - 2)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A01401	Strength of Materials-II	PC	2-1-0	3
2.	19A01402T	Hydraulics and Hydraulic Machinery	PC	2-1-0	3
3.	19A01403	Structural Analysis-I	PC	2-1-0	3
4.	19A01404T	Concrete Technology	PC	3-0-0	3
5.	19A01405T	Transportation Engineering	PC	3-0-0	3
6.	19A01406	Environmental Engineering	PC	3-0-0	3
7.	19A01402P	Hydraulic Machinery Lab	PC	0-0-3	1.5
8.	19A01405P	Transportation Engineering Lab	PC	0-0-3	1.5
9.	19A99302	Biology For Engineers	MC	3-0-0	0
Total:					21


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JNTUA Curriculum
Civil Engineering B. Tech Course Structure

III & IV Year Course Structure and Syllabus

Semester - 5 (Theory - 6, Lab - 3)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A01501	Design of Reinforced Concrete Structures	PC	2-1-0	3
2.	19A01502	Water Resources Engineering	PC	3-0-0	3
3.	19A01503T	Engineering Geology	PC	2-0-0	2
4.	19A01504	Structural Analysis-II	PC	2-1-0	3
5.	19A01505a 19A01505b 19A01505c 19A01505d 19A01505e	Professional Elective-I Building Construction Practice Subsurface Investigation and Instrumentation Environmental Pollution and Control Advanced Surveying Urban Hydrology	PE	3-0-0	3
6.	19A01506a 19A01506b 19A02506a 19A03506a 19A03506b 19A04506a 19A04506b 19A05506a 19A05506b 19A27506a 19A27506b 19A54506a 19A52506a	Open Elective-I Experimental stress analysis. Building Technology Electrical Engineering Materials 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	OE	3-0-0	3
7.	19A01507	Computer Aided Civil Engineering Drawing	PC	0-0-3	1.5
8.	19A01508	Environmental Engineering Lab	PC	0-0-3	1.5
9.	19A01503P	Engineering Geology Lab	PC	0-0-2	1.0
10.	19A01509	Socially Relevant Project	PR	-----	0.5
11.	19A99501	Mandatory course: Constitution of India	MC	3-0-0	0
Total					21.5

Semester - 6 (Theory - 6, Lab - 2)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A01601T	Geotechnical Engineering -I	PC	2-1-0	3
2.	19A01602	Design of Steel Structures	PC	2-1-0	3
3.	19A52601T	English Language Skills	HS	3-0-0	3
4.		Professional Elective-II	PE	3-0-0	3
	19A01603a	Repair and Rehabilitation of Structures			
	19A01603b	Ground Improvement Techniques			
	19A01603c	Air Pollution Engineering			
	19A01603d	Railway Engineering			
	19A01603e	Hydropower Development			
5.		Open Elective-II	OE	3-0-0	3
	19A01604a	Industrial waste and waste water management.			
	19A01604b	Building Services & Maintenance			
	19A02604a	Industrial Automation			
	19A02604b	System Reliability Concepts			
	19A03604a	Introduction to Mechatronics			
	19A03604b	Optimization techniques through MATLAB			
	19A04604a	Basics of VLSI			
	19A04604b	Principles of Communication Systems			
	19A05604a	Fundamentals of VR/AR/MR			
	19A05604b	Data Science			
	19A27604a	Food Toxicology			
	19A27604b	Food Plant Equipment Design			
	19A54604a	Wavelet Transforms & its applications			
	19A52604a	Soft Skills			
6.		Humanities Elective-I	HE	3-0-0	3
	19A52602a	Entrepreneurship & Incubation			
	19A52602b	Managerial Economics And Financial Analysis			
	19A52602c	Business Ethics And Corporate Governance			
	19A52602d	Enterprise Resource Planning			
	19A52602e	Supply Chain Management			
7.	19A01601P	Geotechnical Engineering lab	PC	0-0-3	1.5
8.	19A52601P	English Language Skills Lab	HS	0-0-3	1.5
9.	19A01605	Socially Relevant Project	PR	-----	0.5
10.	19A99601	Mandatory Course: Research Methodology	MC	3-0-0	0
Total					21.5

Semester – 7 (Theory - 5, Labs -2 & Project – 1)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A01701	Geotechnical Engineering-II	PC	2-1-0	3
2.	19A01702	Estimation & costing	PC	2-1-0	3
3.	19A01703a1 19A01703a2 19A01703b1 19A01703b2 19A01703c1 19A01703c2 19A01703d1 19A01703d2 19A01703e1 19A01703e2	Professional Elective-III Bridge Engineering Prestressed concrete Expansive soils Rock Mechanics Industrial Waste & Waste Water Engineering Remote Sensing and GIS Traffic Engineering Urban Transportation Planning Water Resources System Analysis OR River Basin Management	PE	3-0-0	3
4.	19A01704a 19A01704b 19A02704a 19A02704b 19A03704a 19A03704b 19A04704a 19A04704b 19A05704a 19A05704b 19A27704a 19A27704b 19A54704a	Open Elective-III Air pollution and control. Basics of civil Engineering Renewable Energy Systems Electric Vehicle 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)	OE	3-0-0	3
5.	19A52701a 19A52701b 19A52701c 19A52701d 19A52701e	Humanities Elective-II Organizational Behavior Management Science Business Environment Strategic Management E-Business	HS	3-0-0	3
6.	19A01404P	Concrete technology Lab	PC	0-0-3	1.5
7.	19A01705	Computer Aided Design Lab	PC	0-0-3	1.5
8.	19A01706	Project*	PR	-----	2
9.	19A01707	Industrial Training/Skill Development/Research Project*	PR	-----	1.5
Total					21.5

Semester – 8 (Theory - 2, Project – 1)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A01801a1 19A01801a2 19A01801a3 19A01801b1 19A01801b2 19A01801c1 19A01801c2 19A01801d1 19A01801d2 19A01801e1 19A01801e2 19A01801e3	Professional Elective-IV Finite Element Methods Advanced R.C.C Structural Design Advanced steel structures Advanced Foundation Engineering Soil structure interaction Environmental Impact Assessment Environmental Economics Docks and Harbor Engineering Traffic Analysis Design and Drawing of Irrigation Structures Water Shed Management Sustainable Water Resources Development.	PE	3-0-0	3
2.	19A01802a 19A01802b 19A02802a 19A02802b 19A03802a 19A03802b 19A04802a 19A04802b 19A04802c 19A04802d 19A05802a 19A05802b 19A27802a 19A27802b 19A54802a	Open Elective-IV Disaster Management. Global Warming and climate changes IoT Applications in Electrical Engineering Smart Electric Grid Energy conservation and management Non destructive testing Introduction to Image Processing Principles of Cellular and Mobile Communications Industrial Electronics Electronic Instrumentation Block Chain Technology and Applications MEAN Stack Technology Food Plants Utilities & Services Nutraceuticals & Functional Foods Mathematical Modeling & Simulation	OE	3-0-0	3
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

- c) Road safety Audit
- d) Environmental impact Audit

Areas for Socially Relevant Project in 6th Semester

- a) Structural condition assessment of school buildings
- b) Water resources management -Audit
- c) Survey of waste management systems-Swachh Bharat
- d) Survey of modern building materials & properties
- e) Survey on Implementation of Government welfare schemes

MINOR DEGREE IN CIVIL ENGINEERING

CORE SUBJECTS- 5 X 3 =15

Labs - 2 X 1.5 =3

Projects - 1 X 2 = 2

20

Core courses


- 1) Strength of materials-I
- 2) Building materials and Construction
- 3) Surveying
- 4) Concrete technology
- 5) Estimation and costing
- 6) Surveying Lab
- 7) Concrete Technology lab
- 8) Project.

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ELECTRICAL & ELECTRONICS ENGINEERING

Semester - 1 (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 - 2 (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


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JNTUA Curriculum
Electrical & Electronics Engineering B. Tech Course Structure

2nd Year to 4th Years Course Structure

Semester – 3 (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 - 4 (Theory - 6, Lab – 2, MC-1)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A54401	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.	19A02401P	Electrical Circuit Analysis Lab	PC	0-0-3	1.5
8.	19A04406	Electronic Circuits Lab	PC	0-0-3	1.5
9.	19A99301	Environmental Science	MC	3-0-0	0
Total					21

JNTUA Curriculum
Electrical & Electronics Engineering B. Tech Course Structure


III & IV Year Course Structure and Syllabus

Semester - 5 (Theory - 6, Lab - 3)					
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	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 19A02506a 19A03506a 19A03506b 19A04506a 19A04506b 19A05506a 19A05506b 19A27506a 19A27506b 19A54506a 19A52506a	Open Elective-I Experimental stress analysis. Building Technology Electrical Engineering Materials 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	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 - 6 (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 Electrical Distribution system Automation AC Drives Advanced Control systems Embedded Systems Wind Energy Systems	PEC-II	2-1-0	3
5.	19A01604a 19A01604b 19A02604a 19A02604b 19A03604a 19A03604b 19A04604a 19A04604b 19A05604a 19A05604b 19A27604a 19A27604b 19A54604a 19A52604a	Open Elective-II Industrial waste and waste water management. Building Services & Maintenance Industrial Automation System Reliability Concepts 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	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	HSM C	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
Total					21.5

Semester – 7 (Theory - 5, Labs -2 & Project – 1)					
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	Professional Elective-III	PEC-III	3-0-0	3
	19A02703b	Power System Operation & Control			
	19A02703c	Switched mode Power Converters			
	19A04602T	Instrumentation			
	19A02703d	Digital Signal Processing Applications of Power Electronics to Renewable Energy Sources			
4.	19A01704a	Open Elective-III	OEC-III	3-0-0	3
	19A01704b	Air pollution and control.			
	19A02704a	Basics of civil Engineering			
	19A02704b	Renewable Energy Systems			
	19A03704a	Electric Vehicle Engineering			
	19A03704b	Finite element methods			
	19A04704a	Product Marketing			
	19A04704b	Introduction to Microcontrollers & Applications			
	19A05704a	Principles of Digital Signal Processing			
	19A05704b	Fundamentals of Game Development			
	19A27704a	Cyber Security			
	19A27704b	Corporate Governance in Food Industries			
	19A54704a	Process Technology for Convenience & RTE Foods			
	19A54704a	Numerical Methods for Engineers (ECE , CSE, IT &CE)			
5.	19A52701a	Humanities Elective-II	HSMC	3-0-0	3
	19A52701b	Organizational Behavior			
	19A52701c	Management Science			
	19A52701d	Business Environment			
	19A52701e	Strategic Management E-Business			
6.	19A02705	Power Systems & Simulation Lab	PCC	0-0-3	1.5
7.	19A02706	Measurements Lab	PCC	0-0-3	1.5
8.	19A02707	Project	PR	-----	2
9.	19A02708	Industrial Training/Skill Development/Research Project*	PR	-----	1.5
Total					21.5

Semester – 8 (Theory - 2, Project – 1)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A02801a	Professional Elective-IV	PE	3-0-0	3
	19A02801b	Power Quality			
	19A02801c	FPGA based controller design			
	19A04604b	Intelligent Control Techniques			
	19A02801d	Principles of Communication Systems			
2.	19A02801d	Energy Storage Systems	OE	3-0-0	3
	19A01802a	Open Elective-IV			
	19A01802b	Disaster Management.			
	19A02802a	Global Warming and climate changes			
	19A02802b	IoT Applications in Electrical Engineering			
	19A03802a	Smart Electric Grid			
	19A03802b	Energy conservation and management			
	19A04802a	Non destructive testing			
	19A04802b	Introduction to Image Processing			
	19A04802c	Principles of Cellular and Mobile Communications			
	19A04802d	Industrial Electronics			
	19A05802a	Electronic Instrumentation			
	19A05802b	Block Chain Technology and Applications			
	19A27802a	MEAN Stack Technology			
	19A54802a	Food Plants Utilities & Services			
19A27802b	Nutraceuticals & Functional Foods				
19A54802a	Mathematical Modeling & Simulation				
3.	19A02803	Project	PR	-----	7
				Total	13


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**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

Minor Degree in Electrical Engineering


S.No.	Course No.	Course Name	Category	L-T-P	Credits
1.		Basic Electric Circuit Concepts	PCC	2-1-0	3
2.		Fundamentals of Electrical Machines	PCC	2-1-0	3
3.		Basic Components of Power System	PCC	2-1-0	3
4.		Basic Power Electronic Devices	PCC	2-1-0	3
5.		Basic Electrical Measurements and Control Systems	PCC	2-1-0	3
6.		Circuits & Machine Lab	PCC	0-0-3	1.5
7.		Electrical Measurements and Controls Lab	PCC	0-0-3	1.5
8.		Project	PR	-----	2
Total					20


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MECHANICAL ENGINEERING

Semester - 1 (Theory - 3, Lab - 4)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A54101	Algebra and Calculus	BS	3-1-0	4
2.	19A51101T	Engineering Chemistry	BS	3-0-0	3
3.	19A05101T	Problem Solving & Programming	ES	3-1-0	4
4.	19A03102	Engineering Graphics Lab	ES	1-0-4	3
5.	19A03101	Engineering Workshop	LC	0-0-2	1
6.	19A51101P	Engineering Chemistry Lab	BS	0-0-3	1.5
7.	19A05101P	Problem Solving & Programming Lab	ES	0-0-3	1.5
Total					18

Semester - 2 (Theory - 5, Lab - 5)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A02201T	Basic Electrical & Electronics Engineering	ES	3-0-0	3
2.	19A54201	Differential Equations and Vector Calculus	BS	3-1-0	4
3.	19A56102T	Engineering Physics	BS	3-0-0	3
4.	19A05201T	Data Structures	ES	3-0-0	3
5.	19A52101T	Communicative English 1	HS	2-0-0	2
6.	19A52101P	Communicative English 1 Lab	HS	0-0-2	1
7.	19A03201	Mechanical Engineering Workshop	LC	0-0-2	1
8.	19A02201P	Basic Electrical & Electronics Engineering Lab	ES	0-0-3	1.5
9.	19A56102P	Engineering Physics Lab	BS	0-0-3	1.5
10.	19A05201P	Data Structures Lab	ES	0-0-3	1.5
Total					21.5



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JNTUA Curriculum
Mechanical Engineering B. Tech Course Structure

2nd Year to 4th Years Course Structure

Semester - 3 (Theory - 6, Lab - 4)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A54301	Complex Variables, Transforms and PDE	BS	2-1-0	3
2.	19A05304T	Python Programming	ES	2-1-0	3
3.	19A03301T	Manufacturing Processes	PC	3-0-0	3
4.	19A03302	Engineering Mechanics	PC	3-0-0	3
5.	19A03303T	Material Science and Engineering	PC	3-0-0	3
6.	19A99303T	Design Thinking & Product Innovation	ES	2-0-0	2
7.	19A99303P	Design Thinking & Product Innovation Lab	ES	0-0-3	1.5
8.	19A03301P	Manufacturing Processes Lab	PC	0-0-3	1.5
9.	19A03303P	Material Science and Engineering Lab	PC	0-0-3	1.5
10.	19A99301	Environmental Sciences	MC	3-0-0	0
Total					21.5


Semester - 4 (Theory - 6, Lab - 2)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A54304	Numerical Methods and Probability theory	BS	2-1-0	3
2.	19A03401	Thermodynamics	PC	2-1-0	3
3.	19A03402T	Mechanics of Materials	PC	2-1-0	3
4.	19A01407	Fluid Mechanics and Hydraulic Machinery	PC	2-1-0	3
5.	19A05406T	Internet of Things	ES	2-0-2	3
6.	19A03403	Kinematics of Machinery	PC	2-1-0	3
7.	19A03404	Computer Aided Machine Drawing	PC	0-0-3	1.5
8.	19A03402P	Mechanics of Materials Lab	PC	0-0-3	1.5
9.	19A99302	Biology For Engineers	MC	3-0-0	0
Total					21


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JNTUA Curriculum
Mechanical Engineering B. Tech Course Structure

III & IV Year Course Structure and Syllabus

Semester - 5 (Theory - 7, Lab - 3)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A03501T	Applied Thermodynamics	PC	2-1-0	3
2.	19A03502T	Manufacturing Technology	PC	2-0-0	2
3.	19A03503T	Heat Transfer	PC	2-1-0	3
4.	19A03505	Dynamics of Machinery	PC	2-1-0	3
5.	19A03504a	Professional Elective 1 Automobile Engineering	PE	3-0-0	3
	19A03504b	Manufacturing Methods in Precision Engineering			
	19A03504c	Design of Transmission Systems			
	19A03504d	Power Plant Engineering			
	19A03504e	Ergonomics and Human Factors in Engineering			
6.	19A01506a	Open Elective-I Experimental stress analysis.	PE	3-0-0	3
	19A01506b	Building Technology			
	19A02506a	Electrical Engineering Materials			
	19A03506a	Introduction to Hybrid and Electric Vehicles			
	19A03506b	Rapid Prototyping			
	19A04506a	Analog Electronics			
	19A04506b	Digital Electronics			
	19A05506a	Free and Open Sources Systems			
	19A05506b	Computer Graphics and Multimedia Animation			
	19A27506a	Brewing Technology			
	19A27506b	Computer Applications in Food Technology			
	19A54506a	Optimization Techniques			
	19A52506a	Technical Communication and Presentation Skills			
7.	19A03501P	Applied Thermodynamics Lab	PC	0-0-3	1.5
8.	19A03502P	Manufacturing Technology Lab	PC	0-0-3	1.5
9.	19A03403P	Fluid Mechanics & Hydraulic Machinery Lab	PC	0-0-2	1
10.	19A03507	Socially Relevant Projects (15 Hrs/Sem)	PR	0-0-0.5	0.5
11.	19A99501	Mandatory Course: Constitution Of India	MC	3-0-0	0
Total					21.5


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Semester - 6 (Theory - 7, Lab - 2)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A03601	Design of Machine Elements	PC	2-1-0	3
2.	19A03602T	Introduction to CAD/CAM	PC	3-0-0	3
3.	19A52601T	English Language Skills	BS	3-0-0	3
4.	19A03603a 19A03603b 19A03603c 19A03603d 19A03603e	Professional Elective-II Alternative Fuels and Emission Control Simulation and Modeling of Manufacturing Systems Mechanical Behavior of Materials Refrigeration & Air Conditioning Production and Operations Management	PE	3-0-0	3
5.	19A01604a 19A01604b 19A02604a 19A02604b 19A03604a 19A03604b 19A04604a 19A04604b 19A05604a 19A05604b 19A27604a 19A27604b 19A54604a 19A52604a	Open Elective-II Industrial waste and waste water management. Building Services & Maintenance Industrial Automation System Reliability Concepts 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	OE	3-0-0	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	HS	3-0-0	3
7.	19A03503P	Heat Transfer Lab	PC	0-0-3	1.5
8.	19A52601P	English Language Skills Lab	BS	0-0-3	1.5
9.	19A03605	Socially Relevant Projects (15 Hrs/Sem)	PR	----	0.5
10.	19A99601	Research Methodology	MC	3-0-0	0
Total					21.5


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Semester – 7 (Theory - 5, Labs -2 & Project – 1)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A03701	Operations Research	PC	2-1-0	3
2.	19A03702T	Metrology & Measurements	PC	2-0-0	2
3	19A03703a	Professional Elective-III Automotive Transmission Systems	PE	3-0-0	3
	19A03703b	Additive Manufacturing			
	19A03703c	Mechanics of Composite Materials			
	19A03703d	Solar and Wind Energy			
	19A03703e	Product Marketing			
4.	19A01704a	Open Elective-III Air pollution and control.	PE	3-0-0	3
	19A01704b	Basics of civil Engineering			
	19A02704a	Renewable Energy Systems			
	19A02704b	Electric Vehicle Engineering			
	19A03704a	Finite element methods			
	19A03704b	Product Marketing			
	19A04704a	Introduction to Microcontrollers & Applications			
	19A04704b	Principles of Digital Signal Processing			
	19A05704a	Fundamentals of Game Development			
	19A05704b	Cyber Security			
	19A27704a	Corporate Governance in Food Industries			
	19A27704b	Process Technology for Convenience & RTE Foods			
	19A54704a	Numerical Methods for Engineers (ECE , CSE, IT &CE)			
5	19A52701a	Humanities Elective-II Organizational Behavior	HS	3-0-0	3
	19A52701b	Management Science			
	19A52701c	Business Environment			
	19A52701d	Strategic Management			
	19A52701e	E-Business			
6.	19A03702P	Metrology & Measurements Lab	PC	0-0-3	1.5
7.	19A03602P	CAD / CAM Lab	PC	0-0-3	1.5
8.	19A05406P	IOT Lab		0-0-2	1
9.	19A03705	Project Stage – I	PR	0-0-4	2
10.	19A99701	Industrial Training / Skill Development / Research Project	PR	---	1.5
Total					21.5


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Semester – 8 (Theory - 2, Project – 1)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A03801a	Professional Elective-IV Autotronics	PE	3-0-0	3
	19A03801b	Robotics and Applications in Manufacturing			
	19A03801c	Mechanical Vibrations			
	19A03801d	Computational Fluid Dynamics			
	19A03801e	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			
	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.	19A03803	Project	PR	-----	7
				Total	13


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ELECTRONICS & COMMUNICATION ENGINEERING

Semester - 1 (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.	19A04101	Electronics & Communication 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 - 2 (Theory - 4, Lab - 5)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A04201T	Network Theory	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.	19A04201P	Network Theory 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


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JNTUA Curriculum
Electronics and Communication Engineering B. Tech Course Structure

2nd Year to 4th Years Course Structure

Semester – 3 (Theory - 6, Lab –3)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A54302	Complex Variables and Transforms	BS	3-0-0	3
2.	19A04301	Signals & Systems	PC	3-0-0	3
3.	19A04302T	Electronic Devices and Circuits	PC	3-0-0	3
4.	19A04303	Probability Theory and Stochastic Processes	PC	3-0-0	3
5.	19A04304	Digital Electronics and Logic Design	PC	3-0-0	3
6.	19A02304T	Electrical Technology	ES	3-0-0	3
7.	19A04302P	Electronic Devices and Circuits Lab	PC	0-0-3	1.5
8.	19A04305	Basic Simulation Lab	PC	0-0-2	1
9.	19A02304P	Electrical Technology Lab	ES	0-0-2	1
10.	19A99302	Biology For Engineers	HS	3-0-0	0
Total					21.5

Semester – 4 (Theory - 6, Lab –2)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A04401	Electromagnetic Waves and Transmission lines	PC	3-0-0	3
2.	19A04402T	Electronic Circuits – Analysis and Design	PC	3-0-0	3
3.	19A02404	Control Systems	ES	3-0-0	3
4.	19A04403T	Analog Communications	PC	3-0-0	3
5.	19A05304T	Python Programming	ES	2-1-0	3
6.	19A04404	Computer Architecture and Organization	PC	3-0-0	3
7.	19A04402P	Electronic Circuits – Analysis and Design Lab	PC	0-0-3	1.5
8.	19A04403P	Analog Communications Lab	PC	0-0-3	1.5
9.	19A99301	Environmental Science	BS	3-0-0	0
Total					21


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JNTUA Curriculum
Electronics and Communication Engineering B. Tech Course Structure

III & IV Year Course Structure and Syllabus

Semester - 5 (Theory - 6, Lab - 3)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A04501T	Integrated Circuits and Applications	PC	2-0-0	2
2.	19A04502	Antennas and Wave Propagation	PC	3-0-0	3
3.	19A52601T	English Language Skills	HS	3-0-0	3
4.	19A04503T	Digital Communications	PC	3-0-0	3
5.	19A05403T	Professional Elective-I	PC	3-0-0	3
	19A02403	Operating Systems			
	19A05303T	Power Electronics			
	19A04504a	Object Oriented Programming			
	19A04504b	Data Communications and Networks			
6.	19A04504b	Nano Electronics	OE	3-0-0	3
	19A01506a	Open Elective-I			
	19A01506b	Experimental stress analysis.			
	19A02506a	Building Technology			
	19A03506a	Electrical Engineering Materials			
	19A03506b	Introduction to Hybrid and Electric Vehicles			
	19A04506a	Rapid Prototyping			
	19A04506b	Analog Electronics			
	19A05506a	Digital Electronics			
	19A05506b	Free and Open Sources Systems			
	19A27506a	Computer Graphics and Multimedia Animation			
	19A27506b	Brewing Technology			
	19A54506a	Computer Applications in Food Technology			
19A52506a	Optimization Techniques				
	Technical Communication and Presentation Skills				
7.	19A04501P	Integrated Circuits and Applications Lab	PC	0-0-3	1.5
8.	19A52601P	English Language Skills Lab	HS	0-0-3	1.5
9.	19A04503P	Digital Communications Lab	PC	0-0-2	1
10.	19A04507	Socially Relevant Project		0-0-1	0.5
11.	19A99601	Research Methodology (Mandatory course)		3-0-0	0
Total					21.5

Semester - 6 (Theory - 6, Lab - 2)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A04601T	Microprocessors and Microcontrollers	PC	3-0-0	3
2.	19A04602T	Digital Signal Processing	PC	3-0-0	3
3.	19A04603	Digital System Design through VHDL	PC	3-0-0	3
4.	19A04605a 19A04605b 19A04605c 19A04605d 19A04605e	Professional Elective-II Cellular & Mobile Communications Sensors and Actuators Digital Switching and Multiplexing Electronic Measurements and Instrumentation Radar Systems	PC	3-0-0	3
5.	19A01604a 19A01604b 19A02604a 19A02604b 19A03604a 19A03604b 19A04604a 19A04604b 19A05604a 19A05604b 19A27604a 19A27604b 19A54604a 19A52604a	Open Elective-II Industrial waste and waste water management. Building Services & Maintenance Industrial Automation System Reliability Concepts 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	OE	3-0-0	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	HS	3-0-0	3
7.	19A04602P	Digital Signal Processing Lab	PC	0-0-3	1.5
8.	19A04601P	Microprocessors and Microcontrollers Lab	PC	0-0-3	1.5
9.	19A04606	Socially Relevant Project		0-0-1	0.5
10.	19A99501	Constitution of India (Mandatory Course)		3-0-0	0
11.	19A04607	Industrial Training/Skill Development/Research Project*	PR	-----	-----
Total					21.5

Semester – 7 (Theory - 5, Labs -2 & Project – 1)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A04701T	Microwave Engineering and Optical Communications	PC	3-0-0	3
2.	19A04702T	VLSI Design	PC	3-0-0	3
3.	19A04703a 19A04703b 19A04703c 19A04703d 19A04703e	Professional Elective-III Satellite Communications Digital TV Engineering Embedded Systems Image Processing Advanced Digital Signal Processing	PEC -III	3-0-0	3
4.	19A01704a 19A01704b 19A02704a 19A02704b 19A03704a 19A03704b 19A04704a 19A04704b 19A05704a 19A05704b 19A27704a 19A27704b 19A54704a	Open Elective-III Air pollution and control. Basics of civil Engineering Renewable Energy Systems Electric Vehicle 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)	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	HS MC	3-0-0	3
6.	19A04701P	Microwave and Optical Communications Lab	PC	0-0-3	1.5
7.	19A04702P	VLSI Design Lab	PC	0-0-3	1.5
8.	19A04705	Project	PR	0-0-4	2
9.	19A04706	Industrial Training/Skill Development/Research Project	PR	-----	1.5
Total					21.5

Semester – 8 (Theory - 2, Project – 1)					
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	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			
	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.	19A04803	Project	PR	-----	7
				Total	13

Open Electives (IDE) required for ECE from other disciplines: Suggested by BOS

Civil Engineering

1. Remote Sensing & GIS
2. Disaster Management

Mechanical Engineering

1. Mechatronics
2. Robotics

Electrical & Electronics Engineering

1. Renewable Energy Sources
2. Optimization Techniques

Computer Science Engineering


1. Operating Systems
2. Database Management Systems
3. Software Testing Methodologies
4. Scripting Languages
5. Artificial Intelligence
6. Cyber Security
7. Big data Analytics
8. Cloud Computing
9. Web Design and Management
10. Mobile Application Development

Electives from Humanities required for ECE: Suggested by BOS

1. Managerial Economics & Financial Accounting
2. Management Science
3. Entrepreneurship & Incubation
4. Organizational Behaviour
5. Intellectual Property Rights
6. Effective Business Communications
7. Total Quality Management
8. Personal Management (HR Management)
9. Management Information systems
10. Enterprise resource planning
11. Statistical Analysis (Data analysis)

B.Tech. (Honors)

6 Page


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Additional Courses offered by ECE department for B.Tech. (Honors)

1. 5G Wireless Communications
2. Automotive Electronics
3. Low power VLSI Design.
4. Pattern Recognition
5. Smart Antennas
6. Digital Video Signal Processing (MOOCs)
7. MEMS & Nano Technology

Minor degree courses offered by ECE for Non-Circuit Branches

1. Analog Electronics
2. Digital Electronics
3. Communication Engineering
4. Microprocessors and Microcontrollers
5. Signal Processing
6. Signal Processing and Communication Lab
7. Electronics Lab
8. Mini Project.


Minor degree courses offered by ECE for Circuit Branches

1. Probability Theory and Stochastic Processes
2. Principles of Communications
3. Principles of Antennas
4. Wireless Mobile Communications
5. Radar and Satellite Communication
6. Communication Lab
7. Simulation Lab
8. Mini Project.

COMPUTER SCIENCE & ENGINEERING

Semester - 1 (Theory - 3, Lab - 4)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A54101	Algebra and Calculus	BS	3-1-0	4
2.	19A51102T	Chemistry	BS	3-0-0	3
3.	19A05101T	Problem Solving & Programming	ES	3-1-0	4
4.	19A03102	Engineering Graphics Lab	ES	1-0-4	3
5.	19A03101	Engineering Workshop	LC	0-0-2	1
6.	19A51102P	Chemistry Lab	BS	0-0-3	1.5
7.	19A05101P	Problem Solving & Programming Lab	ES	0-0-3	1.5
Total					18

Semester - 2 (Theory - 5, Lab - 5)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A02201T	Basic Electrical and Electronics Engineering	ES	3-0-0	3
2.	19A54202	Probability and Statistics	BS	3-1-0	4
3.	19A56101T	Applied Physics	BS	3-0-0	3
4.	19A05201T	Data Structures	ES	3-0-0	3
5.	19A52101T	Communicative English - I	HS	2-0-0	2
6.	19A05202	Computer Science and Engineering Workshop	LC	0-0-2	1
7.	19A52101P	Communicative English - I Lab	HS	0-0-2	1
8.	19A02201P	Basic Electrical & Electronics Engineering Lab	ES	0-0-3	1.5
9.	19A56101P	Applied Physics Lab	BS	0-0-3	1.5
10.	19A05201P	Data Structures Lab	ES	0-0-3	1.5
Total					21.5


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JNTUA Curriculum
Computer Science & Engineering B. Tech Course Structure

2nd Year Course Structure

Semester – 3 (Theory - 6, Lab - 3)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A54303	Mathematical Foundations of Computer Science	BS	3-0-0	3
2.	19A05301	Digital Logic Design	PC	3-0-0	3
3.	19A99304	Design Thinking	ES	2-0-0	2
4.	19A05302T	Database Management Systems	PC	3-0-0	3
5.	19A05303T	Object Oriented Programming Through Java	PC	3-0-0	3
6.	19A05304T	Python Programming	PC	2-1-0	3
7.	19A05302P	Database Management Systems Lab	PC	0-0-3	1.5
8.	19A05303P	Object Oriented Programming Through Java Lab	PC	0-0-3	1.5
9.	19A05304P	Python Programming Lab	PC	0-0-3	1.5
10.	19A99301	Environmental Science	MC	3-0-0	0
Total					21.5

Semester - 4 (Theory - 6, Lab - 2)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A54401	Number Theory and Applications	BS	3-0-0	3
2.	19A05401	Computer Organization	PC	3-0-0	3
3.	19A05402T	Design and Analysis of Algorithms	PC	3-0-0	3
4.	19A52401	Entrepreneurship	HS	3-0-0	3
5.	19A05403T	Operating Systems	PC	3-0-0	3
6.	19A05404T	Software Engineering	PC	3-0-0	3
7.	19A05403P	Operating Systems Lab	PC	0-0-3	1.5
8.	19A05404P	Software Engineering Lab	PC	0-0-3	1.5
9.	19A99302	Biology For Engineers	MC	3-0-0	0
Total					21

JNTUA Curriculum
Computer Science & Engineering B. Tech Course Structure

III & IV Year Course Structure and Syllabus

Semester - 5 (Theory - 6, Lab - 3)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A05501	Formal Languages and Automata Theory	PC	3-0-0	3
2.	19A05502T	Artificial Intelligence	PC	3-0-0	3
3.	19A05503T	Object Oriented Analysis Design & Testing	PC	2-0-0	2
4.	19A05504T	Computer Networks	PCC	3-0-0	3
5.		Professional Elective-I	PE	3-0-0	3
	19A05505a	Data warehousing and Data mining			
	19A05505b	Web Technologies			
	19A05505c	Mobile Application Development			
6.		Open Elective-I	OE	3-0-0	3
	19A01506a	Experimental stress analysis.			
	19A01506b	Building Technology			
	19A02506a	Electrical Engineering Materials			
	19A03506a	Introduction to Hybrid and Electric Vehicles			
	19A03506b	Rapid Prototyping			
	19A04506a	Analog Electronics			
	19A04506b	Digital Electronics			
	19A05506a	Free and Open Sources Systems			
	19A05506b	Computer Graphics and Multimedia Animation			
	19A27506a	Brewing Technology			
	19A27506b	Computer Applications in Food Technology			
	19A54506a	Optimization Techniques			
	19A52506a	Technical Communication and Presentation Skills			
7.	19A05502P	Artificial Intelligence Laboratory	PCC	0-0-3	1.5
8.	19A05504P	Computer Networks Laboratory	PCC	0-0-3	1.5
9.	19A05503T	Object Oriented Analysis Design & Testing Lab	PCC	0-0-2	1.0
10.	19A05507	Socially Relevant Project	PR	-----	0.5
11.	19A99501	Mandatory course: Constitution of India	MC	3-0-0	0
Total					21.5


Semester - 6 (Theory - 6, Lab - 2)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A05601	Cryptography & Network Security	PC	2-1-0	3
2.	19A05602T	Big Data Analytics	PCC	3-0-0	3
3.	19A52601T	English Communication	HS	3-0-0	3
4.	19A05603a 19A05603b 19A05603c	Professional Elective-II Systems Software and Compiler Design Machine Learning Design Patterns	PE	3-0-0	3
5.	19A01604a 19A01604b 19A02604a 19A02604b 19A03604a 19A03604b 19A04604a 19A04604b 19A05604a 19A05604b 19A27604a 19A27604b 19A54604a 19A52604a	Open Elective-II Industrial waste and waste water management. Building Services & Maintenance Industrial Automation System Reliability Concepts 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	OE	3-0-0	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	HE	3-0-0	3
7.	19A05602P	Big Data Analytics Laboratory	PCC	0-0-3	1.5
8.	19A52601P	English Communication lab	HS	0-0-3	1.5
9.	19A05605	Socially Relevant Project	PR	-----	0.5
10.	19A99601	Mandatory Course: Research Methodology	MC	3-0-0	0
Total					21.5

Semester – 7 (Theory - 5, Labs -2 & Project – 1)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A05701T	Internet of Things	PC	2-1-0	3
2.	19A05702T	Software Testing	PC	2-1-0	3
3.	19A05703a 19A05703b 19A05703c	Professional Elective-III Cloud Computing Natural Language Processing Agile Methodologies	PE	3-0-0	3
4.	19A01704a 19A01704b 19A02704a 19A02704b 19A03704a 19A03704b 19A04704a 19A04704b 19A05704a 19A05704b 19A27704a 19A27704b 19A54704a	Open Elective-III Air pollution and control. Basics of civil Engineering Renewable Energy Systems Electric Vehicle 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)	OE	3-0-0	3
5.	19A52701a 19A52701b 19A52701c 19A52701d 19A52701e	Humanities Elective-II Organizational Behavior Management Science Business Environment Strategic Management E-Business	HS	3-0-0	3
6.	19A05702P	Software Testing Lab	PC	0-0-3	1.5
7.	19A05701P	Internet of Things Lab	PC	0-0-3	1.5
8.	19A05705	Project*	PR	-----	2
9.	19A05706	Industrial Training/Skill Development/Research Project*	PR	-----	1.5
				Total	21.5

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Semester – 8 (Theory - 2, Project – 1)					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19A05801a 19A05801b 19A05801c	Professional Elective-IV Dev Ops Deep Learning Adhoc & Sensor Networks	PE	3-0-0	3
2.	19A01802a 19A01802b 19A02802a 19A02802b 19A03802a 19A03802b 19A04802a 19A04802b 19A04802c 19A04802d 19A05802a 19A05802b 19A27802a 19A27802b 19A54802a	Open Elective-IV Disaster Management. Global Warming and climate changes IoT Applications in Electrical Engineering Smart Electric Grid Energy conservation and management Non destructive testing Introduction to Image Processing Principles of Cellular and Mobile Communications Industrial Electronics Electronic Instrumentation Block Chain Technology and Applications MEAN Stack Technology Food Plants Utilities & Services Nutraceuticals & Functional Foods Mathematical Modeling & Simulation	OE	3-0-0	
3.	19A05803	Project	PR	-----	7
				Total	13


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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

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

ANANTHAPURAMU – 515 002 (A.P.) INDIA.

Course Structure for B.Tech-R15 Regulations

Civil Engineering

I B.Tech. - I Semester

S.No	Course code	Subject	*L	*T	*P	*Drg	*C
1.	15A52101	Functional English	3	1	-	-	3
2.	15A54101	Mathematics – I	3	1	-	-	3
3.	15A05101	Computer Programming	3	1	-	-	3
4.	15A56101	Engineering Physics	3	1	-	-	3
5.	15A03101	Engineering Drawing	-	-	-	6	3
6.	15A52102	English Language Communication Skills Lab	-	-	4	-	2
7.	15A56102	Engineering Physics Lab	-	-	4	-	2
8.	15A05102	Computer Programming Lab	-	-	4	-	2
Total			12	4	12	6	21

I-II Semester

S.No	Course code	Subject	L	T	P	C
1.	15A52201	English for Professional Communication	3	1	-	3
2.	15A54201	Mathematics – II	3	1	-	3
3.	15A01201	Engineering Mechanics	3	1	-	3
4.	15A51101	Engineering Chemistry	3	1	-	3
5.	15A01101	Environmental Studies	3	1	-	3
6.	15A01202	Applied Mechanics Lab	-	-	4	2
7.	15A51102	Engineering Chemistry Lab	-	-	4	2
8.	15A99201	Engineering & IT Workshop	-	-	4	2
Total			15	5	12	21

- * L - Lecture hours
- *T - Tutorial hours
- *P - Practical hours
- *Drg - Drawing
- *C - Credits

II B. Tech – I Sem

S.No.	Course Code	Subject	L	T	P	C
1	15A54301	Mathematics - III	3	1	-	3
2	15A01301	Electrical and Mechanical Technology	3	1	-	3
3	15A01302	Building Materials and Construction	3	1	-	3
4	15A01303	Strength of Materials – I	3	1	-	3
5	15A01304	Surveying – I	3	1	-	3
6	15A01305	Fluid Mechanics	3	1	-	3
7	15A01306	Surveying Laboratory – I	-	-	4	2
8	15A01307	Strength of Materials Laboratory	-	-	4	2
Total			18	06	08	22

II B. Tech – II Sem

S.No.	Course Code	Subject	L	T	P	C
1	15A54401	Probability and Statistics	3	1	-	3
2	15A52301	Managerial Economics & Financial Analysis	3	1	-	3
3	15A01401	Strength of Materials – II	3	1	-	3
4	15A01402	Surveying – II	3	1	-	3
5	15A01403	Structural Analysis – I	3	1	-	3
6	15A01404	Hydraulics & Hydraulic Machinery	3	1	-	3
7	15A01405	Fluid Mechanics & Hydraulic Machinery Laboratory	-	-	4	2
8	15A01406	Surveying Laboratory – II	-	-	4	2
9	15A01407	Comprehensive Online Examination-I	-	-	-	1
Total			18	06	08	23

Note:- Survey camp for a duration of two weeks to be conducted before the commencement of III B.Tech, I – Sem class work, in the II B.Tech, II – Sem break. This survey camp has to be evaluated for 50 marks by the internal faculty. It has a weightage of 2 credits. The marks and credits will be incorporated in IV – B.Tech, II – Sem marks memo.

B.Tech III-I Semester (C.E)

S. No.	Course Code	Subject	L	T	P	C
1.	15A01501	Design and Drawing of RCC Structures	3	1	-	3
2.	15A01502	Estimation, Costing and Valuation	3	1	-	3
3.	15A01503	Geotechnical Engineering – I	3	1	-	3
4.	15A01504	Engineering Geology	3	1	-	3
5.	15A01505	Structural Analysis – II	3	1	-	3
6.		MOOCS-I*	3	1	-	3
	15A01506	1. Cost Effective Housing Techniques				
	15A01507	2. Water Harvesting and Conservation				
7.	15A01508	Engineering Geology Laboratory	-	-	4	2
8.	15A01509	Geotechnical Engineering Laboratory	-	-	4	2
9.	15A99501	Audit course - Social Values & Ethics	2	0	2	0
Total			20	6	10	22

B.Tech III-II Semester (C.E)

S. No.	Course Code	Subject	L	T	P	C
1.	15A01601	Concrete Technology	3	1	-	3
2.	15A01602	Design and Drawing of Steel Structures	3	1	-	3
3.	15A01603	Geotechnical Engineering – II	3	1	-	3
4.	15A01604	Transportation Engineering - I	3	1	-	3
5.	15A01605	Water Resources Engineering – I	3	1	-	3
6.		CBCC-I	3	1	-	3
	15A01606	1. Remote Sensing & GIS				
	15A01607	2. Disaster Management & Mitigation				
	15A01608	3. Intellectual Property Rights				
7.	15A01609	Concrete Technology Laboratory	-	-	4	2
8.	15A01610	Transportation Engineering Laboratory	-	-	4	2
9.	15A52602	Advanced English Language Communication Skills (AELCS) Laboratory (Audit Course)	-	-	2	0
10.	15A01611	Comprehensive Online Examination-II	-	-	-	1
Total			18	06	12	23

B.Tech IV-I Semester (C.E)

S. No.	Course Code	Subject	L	T	P	C
1.	15A01701	Finite Element Methods	3	1	-	3
2.	15A01702	Transportation Engineering - II	3	1	-	3
3.	15A01703	Environmental Engineering	3	1	-	3
4.	15A01704	Water Resources Engineering – II	3	1	-	3
5.	15A01705 15A01706 15A01707	CBCC-II 1. Design and Drawing of Irrigation Structures 2. Ground Improvement Techniques 3. Air Pollution and Quality Control	3	1	-	3
6.	15A01708 15A01709 15A01710	CBCC-III 1. Bridge Engineering 2. Earth Quake Resistant Design of Structures 3. Rehabilitation and Retrofitting of Structures	3	1	-	3
7.	15A01711	CAD Laboratory	-	-	4	2
8.	15A01712	Environmental Engineering Laboratory	-	-	4	2
Total			18	6	8	22

B.Tech IV-II Semester (C.E)

S. No.	Course Code	Subject	L	T	P	C
1.	15A01801 15A01802	MOOCS – II* 1. Urban Transportation Planning 2. Advanced Structural Engineering	3	1	-	3
2.	15A01803 15A01804	MOOCS – III* 1. Prestressed Concrete 2. Environmental Impact Assessment and Management	3	1	-	3
3.	15A01805	Comprehensive Viva Voce	-	-	4	2
4.	15A01806	Technical Seminar	-	-	4	2
5.	15A01807	Project Work	-	-	24	10
6.	15A01808	Survey Camp**	-	-	-	2
Total			6	2	32	22


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Minor Discipline in Civil Engineering

S. No.	Course Code	Subject	L	T	P	C
1	15A01302	Building Materials and Construction	3	1	-	3
2	15A01502	Estimation, Costing and Valuation	3	1	-	3
3	15A01601	Concrete Technology	3	1	-	3
4	15A01703	Environmental Engineering	3	1	-	3
5	15M01101	Minor Discipline Project	-	-	-	8
		Total	12	4	-	20

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

ANANTHAPURAMU – 515 002 (A.P.) INDIA.

Course Structure for B.Tech-R15 Regulations

ELECTRICAL & ELECTRONICS ENGINEERING

I B.Tech. - I Semester

S.No	Course code	Subject	L	T	P	Drg	C
1.	15A52101	Functional English	3	1	-	-	3
2.	15A54101	Mathematics – I	3	1	-	-	3
3.	15A05101	Computer Programming	3	1	-	-	3
4.	15A56101	Engineering Physics	3	1	-	-	3
5.	15A03101	Engineering Drawing	0	-	-	6	3
6.	15A52102	English Language Communication Skills Lab	-	-	4	-	2
7.	15A56102	Engineering Physics Lab	-	-	4	-	2
8.	15A05102	Computer Programming Lab	-	-	4	-	2
Total			12	4	12	6	21

I-II Semester

S.No	Course code	Subject	L	T	P	C
1.	15A54201	Mathematics – II	3	1	-	3
2.	15A52201	English for Professional Communication	3	1	-	3
3.	15A51101	Engineering Chemistry	3	1	-	3
4.	15A01101	Environmental Studies	3	1	-	3
5.	15A02201	Electrical Circuits – I	3	1	-	3
6.	15A51102	Engineering Chemistry Lab	-	-	4	2
7.	15A02202	Electrical Circuits Lab	-	-	4	2
8.	15A99201	Engineering & IT Workshop	-	-	4	2
Total			15	5	12	21

- * L - Lecture hours
- * T - Tutorial hours
- * P - Practical hours
- * Drg - Drawing
- * C - Credits

II B. Tech (EEE) – I Sem

S. No	Course Code	Subject	L	T	P	C
1	15A54301	Mathematics –III	3	1	-	3
2	15A02301	Electrical Circuits – II	3	1	-	3
3	15A02302	Electrical Machines – I	3	1	-	3
4	15A02303	Control Systems Engineering	3	1	-	3
5	15A04301	Electronic Devices & Circuits	3	1	-	3
6	15A05201	Data Structures	3	1	-	3
7	15A02305	Electric Circuits Simulation Laboratory	-		4	2
8	15A04305	Electronic Devices & Circuits Laboratory	-		4	2
Total			18	6	8	22

II B. Tech (EEE) – II Sem

S. No	Course Code	Subject	L	T	P	C
1	15A54402	Mathematics – IV	3	1	-	3
2	15A52301	Managerial Economics and Financial Analysis	3	1	-	3
3	15A02401	Electrical Machines – II	3	1	-	3
4	15A02402	Electrical Power Generating Systems	3	1	-	3
5	15A02403	Electromagnetic Fields	3	1	-	3
6	15A04409	Analog Electronic Circuits	3	1	-	3
7	15A02404	Electrical Machines Laboratory – I	-	-	4	2
8	15A02405	Control Systems & Simulation Laboratory	-	-	4	2
9	15A02406	Comprehensive Online Examination – I	-	-	-	1
Total			18	6	8	23

B.Tech III-I Semester (EEE)

S. No.	Course Code	Subject	L	T	P	C
1.	15A02501	Electrical Measurements	3	1	-	3
2.	15A04509	Linear & Digital IC Applications	3	1	-	3
3.	15A02502	Electrical Power Transmission Systems	3	1	-	3
4.	15A02503	Power Electronics	3	1	-	3
5.	15A02504	Electrical Machines – III	3	1	-	3
6.		MOOCS -I	3	1	-	3
	15A04510	Digital Circuits and Systems				
	15A02505	Networks Signals and Systems				
7.	15A02506	Electrical Machines Laboratory – II	-	-	4	2
8.	15A02507	Electrical Measurements Laboratory	-	-	4	2
9.	15A99501	Audit course – Social Values & Ethics	2	0	2	0
Total			20	6	10	22

B.Tech III-II Semester (EEE)

S. No.	Course Code	Subject	L	T	P	C
1.	15A52601	Management Science	3	1	-	3
2.	15A02601	Power Semiconductor Drives	3	1	-	3
3.	15A02602	Power System Protection	3	1	-	3
4.	15A04601	Microprocessors & Microcontrollers	3	1	-	3
5.	15A02603	Power System Analysis	3	1	-	3
6.		CBCC -I				
	15A02604	1) Neural Networks & Fuzzy Logic				
	15A02605	2) Programmable Logic Controller & Its Applications	3	1	-	3
	15A02606	3) Optimization Techniques				
	15A01608	4) Intellectual Property Rights				
7.	15A04607	Microprocessors & Microcontrollers Laboratory	-		4	2
8.	15A02607	Power Electronics & Simulation Laboratory	-		4	2
9.		Advanced English Language				
	15A52602	Communication Skills (AELCS) Laboratory (Audit Course)	-		2	-
10.	15A02608	Comprehensive Online Examination - II	-	-	-	1
Total			18	6	12	23

B.Tech IV-I Semester (EEE)


S. No.	Course Code	Subject	L	T	P	C
1.	15A02701	Electrical Distribution Systems	3	1	-	3
2.	15A04603	Digital Signal Processing	3	1	-	3
3.	15A02702	Power System Operation and Control	3	1	-	3
4.	15A02703	Utilization of Electrical Energy	3	1	-	3
5.	15A02704 15A02705 15A02706	CBCC-II a) Modern Control Theory b) Switched Mode Power Converters c) Energy Auditing & Demand Side Management	3	1	-	3
6.	15A02707 15A02708 15A02709	CBCC-III a) Smart Grid b) Flexible AC Transmission Systems c) Power Quality	3	1	-	3
7.	15A04608	Digital Signal Processing Laboratory	-	-	4	2
8.	15A02710	Power Systems & Simulation Laboratory	-	-	4	2
Total			18	6	8	22

B.Tech IV-II Semester (EEE)

S. No.	Course Code	Subject	L	T	P	C
1.	15A02801 15A02802 15A02803	MOOCS – II 1. Instrumentation 2. Power System Dynamics and Control 3. Industrial Automation & Control	3	1	-	3
2.	15A02804 15A04702 15A02805	MOOCS – III 1. HVDC Transmission 2. Embedded Systems 3. Energy Resources & Technology	3	1	-	3
3.	15A02806	Comprehensive Viva Voce	-	-	4	2
4.	15A02807	Technical Seminar	-	-	4	2
5.	15A02808	Project Work	-	-	24	12
Total			6	2	32	22

Minor Discipline in EEE

S. No.	Course Code	Subject	L	T	P	C
1	15A02303	Control Systems Engineering	3	1	-	3
2	15A02402	Electrical Power Generating Systems	3	1	-	3
3	15A02502	Electrical Power Transmission Systems	3	1	-	3
4	15A02603	Power System Analysis	3	1	-	3
5	15M02101	Minor Discipline Project	-	-	-	8
		Total	12	4	-	20


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ANANTHAPURAMU – 515 002 (A.P.) INDIA.

Course Structure for B.Tech-R15 Regulations

Mechanical Engineering

B.Tech I – I Semester (ME)

S.No	Course code	Subject	L	T	P	C
1.	15A52101	Functional English	3	1	-	3
2.	15A54101	Mathematics – I	3	1	-	3
3.	15A05101	Computer Programming	3	1	-	3
4.	15A51101	Engineering Chemistry	3	1	-	3
5.	15A01101	Environmental Studies	3	1	-	3
6.	15A52102	English Language Communication Skills Lab	-	-	4	2
7.	15A51102	Engineering Chemistry Lab	-	-	4	2
8.	15A05102	Computer Programming Lab	-	-	4	2
Total			15	5	12	21

I-II Semester

S.No	Course code	Subject	L	T	P	Drg	C
1.	15A52201	English for Professional Communication	3	1	-	-	3
2.	15A54201	Mathematics – II	3	1	-	-	3
3.	15A03201	Material Science and Engineering	3	1	-	-	3
4.	15A56101	Engineering Physics	3	1	-	-	3
5.	15A03101	Engineering Drawing	-	-	-	6	3
6.	15A03202	Material Science and Engineering Lab	-	-	4	-	2
7.	15A56102	Engineering Physics Lab	-	-	4	-	2
8.	15A99201	Engineering & IT Workshop	-	-	4	-	2
Total			12	4	12	6	21

- * L - Lecture hours
- * T - Tutorial hours
- * P - Practical hours
- * Drg - Drawing
- * C - Credits

II B. Tech – I Sem

S.No.	Course Code	Subject	L	T	P	C
1	15A54301	Mathematics - III	3	1	-	3
2	15A52301	Managerial Economics & Financial Analysis	3	1	-	3
3	15A01308	Mechanics of Solids	3	1	-	3
4	15A03301	Engineering Drawing for Mechanical Engineers	3	1	-	3
5	15A03302	Engineering Mechanics	3	1	-	3
6	15A03303	Thermodynamics	3	1	-	3
7	15A01309	Mechanics of Solids Lab	-	-	4	2
8	15A03304	Computer Aided Drafting Lab	-	-	4	2
Total			18	06	08	22

II B. Tech – II Sem

S.No.	Course Code	Subject	L	T	P	C
1	15A54401	Probability and Statistics	3	1	-	3
2	15A99301	Basic Electrical and Electronics Engineering	3	1	-	3
3	15A03401	Machine Drawing	3	1	-	3
4	15A03402	Kinematics of Machines	3	1	-	3
5	15A03403	Thermal Engineering – 1	3	1	-	3
6	15A03404	Manufacturing Technology	3	1	-	3
7	15A03405	Thermal Engineering Laboratory	-	-	4	2
8	15A03406	Manufacturing Technology Laboratory	-	-	4	2
9	15A03407	Comprehensive Online Examination-I	-	-	-	1
Total			18	06	08	23

B.Tech III-I Semester (ME)

S. No.	Course Code	Subject	L	T	P	C
1.	15A01510	Fluid Mechanics and Hydraulic Machines	3	1	-	3
2.	15A03501	Thermal Engineering - II	3	1	-	3
3.	15A03502	Dynamics of Machinery	3	1	-	3
4.	15A03503	Machine Tools	3	1	-	3
5.	15A03504	Design of Machine Members - I	3	1	-	3
6.		MOOCS -I		1	-	
	15A03505	a. Entrepreneurship	3			3
	15A03506	b. Nano Technology				
	15A03507	c. Micro Electro Mechanical Systems				
7.	15A01511	Fluid Mechanics and Hydraulic Machines Laboratory	-	-	4	2
8.	15A03508	Machine Tools Laboratory	-	-	4	2
9.	15A99501	Audit course – Social Values & Ethics	2	0	2	0
Total			20	6	10	22

B.Tech III-II Semester (ME)

S. No.	Course Code	Subject	L	T	P	C
1.	15A03601	Operations Research	3	1	-	3
2.	15A03602	Design of Machine Members – II	3	1	-	3
3.	15A03603	Heat Transfer	3	1	-	3
4.	15A03604	Finite Element Method	3	1	-	3
5.	15A03605	Metal forming Process	3	1	-	3
6.		CBCC-I		1	-	
	15A03606	a. Non Conventional Source of Energy	3			3
	15A03607	b. Total Quality Management				
	15A03608	c. Mechatronics				
	15A01608	d. Intellectual Property Rights				
7.	15A03609	Heat Transfer Laboratory	-	-	4	2
8.	15A03610	Computer Aided Engineering Laboratory	-	-	4	2
9.	15A52602	Advanced English Language Communication Skills (AELCS) Laboratory (Audit Course)			2	-
10.	15A03611	Comprehensive Online Examination - II	-	-	-	1
Total			18	6	11	23

B.Tech IV-I Semester (ME)

S. No.	Course Code	Subject	L	T	P	C
1.	15A52601	Management Science	3	1	-	3
2.	15A03701	Automobile Engineering	3	1	-	3
3.	15A03702	CAD/CAM	3	1	-	3
4.	15A03703	Metrology and Measurements	3	1	-	3
5.	15A03704 15A03705 15A03706	CBCC-II a. Refrigeration and Air – Conditioning b. Tool Design c. Modern Manufacturing Methods	3	1	-	3
6.	15A03707 15A03708 15A03709	CBCC-III a. Computational Fluid Dynamics b. Automation and Robotics c. Production & Operations Management	3	1	-	3
7.	15A03710	CAD/ CAM Laboratory	-	-	4	2
8.	15A03711	Metrology and Measurements Laboratory	-	-	4	2
Total			18	6	8	22

B.Tech IV-II Semester (ME)

S. No.	Course Code	Subject	L	T	P	C
1.	15A03801 15A03802 15A03803	MOOCS-II a. Industrial Engineering b. Product Design c. Composite Materials	3	1	0	3
2.	15A03804 15A03805 15A03806	MOOCS -III a. Power Plant Engineering b. Gas Turbines and Jet Propulsion c. Energy Management	3	1	0	3
3.	15A03807	Comprehensive Viva Voce	0	0	4	2
4.	15A03808	Technical Seminar	0	0	4	2
5.	15A03809	Project work	0	0	24	12
Total			6	2	32	22

Minor Discipline in ME

S. No.	Course Code	Subject	L	T	P	C
1	15A03303	Thermodynamics	3	1	-	3
2	15A03403	Thermal Engineering-I	3	1	-	3
3	15A03501	Thermal Engineering-II	3	1	-	3
4	15A03603	Heat Transfer	3	1	-	3
5	15A03101	Minor Discipline Project	-	-	-	8
		Total	12	4	-	20

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Course Structure for B.Tech-R15 Regulations

Electronics & Communication Engineering

I B.Tech. - I Semester

S.No	Course code	Subject	L	T	P	C
1.	15A52101	Functional English	3	1	-	3
2.	15A54101	Mathematics – I	3	1	-	3
3.	15A05101	Computer Programming	3	1	-	3
4.	15A51101	Engineering Chemistry	3	1	-	3
5.	15A01101	Environmental Studies	3	1	-	3
6.	15A52102	English Language Communication Skills Lab	-	-	4	2
7.	15A51102	Engineering Chemistry Lab	-	-	4	2
8.	15A05102	Computer Programming Lab	-	-	4	2
Total			15	5	12	21

I-II Semester

S.No	Course code	Subject	L	T	P	Drg	C
1.	15A52201	English for Professional Communication	3	1	-	-	3
2.	15A54201	Mathematics – II	3	1	-	-	3
3.	15A04201	Network Analysis	3	1	-	-	3
4.	15A56101	Engineering Physics	3	1	-	-	3
5.	15A03101	Engineering Drawing	0	-	-	6	3
6.	15A04202	Network Analysis Lab	-	-	4	-	2
7.	15A56102	Engineering Physics Lab	-	-	4	-	2
8.	15A99201	Engineering and IT Workshop	-	-	4	-	2
Total			12	4	12	6	21

- * L - Lecture hours
- * T - Tutorial hours
- * P - Practical hours
- * Drg - Drawing
- * C - Credits

II B. Tech – I sem

S. No	Course Code	Subject	L	T	P	C
1	15A54301	Mathematics-III	3	1	-	3
2	15A04301	Electronic Devices and Circuits	3	1	-	3
3	15A04302	Switching Theory and Logic Design	3	1	-	3
4	15A04303	Signals and Systems	3	1	-	3
5	15A04304	Probability Theory and Stochastic Processes	3	1	-	3
6	15A02306	Electrical Technology	3	1	-	3
7	15A04305	Electronic Devices and Circuits Laboratory	-	-	4	2
8	15A02307	Electrical Technology and Basic Simulation Laboratory	-	-	4	2
Total			18	06	08	22

II B. Tech – II sem

S. No	Course Code	Subject	L	T	P	C
1	15A54402	Mathematics-IV	3	1	-	3
2	15A04401	Electronic Circuit Analysis	3	1	-	3
3	15A04402	Analog Communication Systems	3	1	-	3
4	15A04403	Electromagnetic Theory and Transmission Lines	3	1	-	3
5	15A05201	Data Structures	3	1	-	3
6	15A02303	Control Systems Engineering	3	1	-	3
7	15A04404	Electronic Circuit Analysis Laboratory	-	-	4	2
8	15A04405	Analog Communication Systems Laboratory	-	-	4	2
9	15A04406	Comprehensive Online Examination-I	-	-	-	1
Total			18	06	08	23

B.Tech III-I Semester (ECE)

S. No.	Course Code	Subject	L	T	P	C
1.	15A04511	Computer Organization	3	1	-	3
2.	15A04501	Antennas and Wave Propagation	3	1	-	3
3.	15A04502	Digital Communication Systems	3	1	-	3
4.	15A04503	Linear Integrated Circuits and Applications	3	1	-	3
5.	15A04504	Digital System Design	3	1	-	3
6.		MOOCS-I	3	1	-	3
	15A04505	a. Linux Programming & Scripting				
	15A04506	b. MEMS & Microsystems				
7.	15A04507	IC Applications Laboratory	-	-	4	2
8.	15A04508	Digital Communication Systems Laboratory	-	-	4	2
9.	15A99501	Audit course – Social Values & Ethics	2	0	2	0
Total			20	06	10	22

B.Tech III-II Semester(ECE)

S. No.	Course Code	Subject	L	T	P	C
1.	15A52301	Managerial Economics and Financial Analysis	3	1	-	3
2.	15A04601	Microprocessors & Microcontrollers	3	1	-	3
3.	15A04602	Electronic Measurements and Instrumentation	3	1	-	3
4.	15A04603	Digital Signal Processing	3	1	-	3
5.	15A04604	VLSI Design	3	1	-	3
6.		CBCC-I	3	1	-	3
	15A04605	a. MATLAB Programming				
	15A04606	b. Industrial Electronics				
	15A02605	c. Neural Networks & Fuzzy Logic				
	15A01608	d. Intellectual Property Rights				
7.	15A04607	Microprocessors & Microcontrollers Laboratory	-	-	4	2
8.	15A04608	Digital Signal Processing Laboratory	-	-	4	2
9.	15A52602	Advanced English Language Communication (AELCS) Laboratory (Audit Course)	-	-	2	-
10.	15A04609	Comprehensive Online Examination-II	-	-	-	1
Total			18	06	12	23

B.Tech IV-I Semester(ECE)

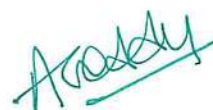
S. No.	Course Code	Subject	L	T	P	C
1.	15A04701	Optical Fiber Communication	3	1	-	3
2.	15A04702	Embedded Systems	3	1	-	3
3.	15A04703	Microwave Engineering	3	1	-	3
4.	15A04704	Data Communications and Networking	3	1	-	3
5.	15A04705 15A04706 15A04707	CBCC-II a. Radar Systems b. Adaptive Signal Processing c. FPGA Design	3	1	-	3
6.	15A04708 15A04709 15A04710	CBCC-III a. Digital Image Processing b. Cellular & Mobile Communication c. Real Time Systems	3	1	-	3
7.	15A04711	Microwave and Optical Communication Laboratory	-	-	4	2
8.	15A04712	VLSI & Embedded Systems Laboratory	-	-	4	2
Total			18	06	08	22

B.Tech IV-II Semester(ECE)

S. No.	Course Code	Subject	L	T	P	C
1.	15A04801 15A04802	MOOCS-II* a. Advanced Digital Signal Processing- Multirate & Wavlet b. Low Power VLSI Circuits & Systems	3	1	-	3
2.	15A04803 15A04804	MOOCS-III * a. Pattern Recognition & Applications b. RF Integrated Circuits	3	1	-	3
3.	15A04805	Comprehensive Viva Voce	-	-	4	2
4.	15A04806	Technical Seminar	-	-	4	2
5.	15A04807	Project Work	-	-	24	12
Total			6	02	32	22

Minor Discipline in ECE

S. No.	Course Code	Subject	L	T	P	C
1	15A04303	Signals & Systems	3	1	-	3
2	15A04304	Probability Theory & Stochastic Processes	3	1	-	3
3	15A04402	Analog Communication Systems	3	1	-	3
4	15A04502	Digital Communication Systems	3	1	-	3
5	15M04101	Minor Discipline Project	-	-	-	8
		Total	12	4	-	20



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Course Structure for B.Tech-R15 Regulations

COMPUTER SCIENCE AND ENGINEERING

I B.Tech. - I Semester

S.No	Course code	Subject	L	T	P	Drg	C
1.	15A52101	Functional English	3	1	-	-	3
2.	15A54101	Mathematics – I	3	1	-	-	3
3.	15A05101	Computer Programming	3	1	-	-	3
4.	15A56101	Engineering Physics	3	1	-	-	3
5.	15A03101	Engineering Drawing	-	-	-	6	3
6.	15A52102	English Language Communication Skills Lab	-	-	4	-	2
7.	15A56102	Engineering Physics Lab	-	-	4	-	2
8.	15A05102	Computer Programming Lab	-	-	4	-	2
Total			12	4	12	6	21

I-II Semester

S.No	Course code	Subject	L	T	P	C
1.	15A52201	English for Professional Communication	3	1	-	3
2.	15A54201	Mathematics – II	3	1	-	3
3.	15A05201	Data Structures	3	1	-	3
4.	15A51101	Engineering Chemistry	3	1	-	3
5.	15A01101	Environmental Studies	3	1	-	3
6.	15A05202	Data Structures Lab	-	-	4	2
7.	15A51102	Engineering Chemistry Lab	-	-	4	2
8.	15A99201	Engineering & IT Workshop	-	-	4	2
Total			15	5	12	21

- * L - Lecture hours
- * T - Tutorial hours
- * P - Practical hours
- * Drg - Drawing
- * C - Credits

II B. Tech – I Sem

S. No	Course Code	Subject	L	T	P	C
1	15A54301	Mathematics III	3	1	-	3
2	15A05301	Database Management Systems	3	1	-	3
3	15A05302	Discrete Mathematics	3	1	-	3
4	15A99301	Basic Electrical and Electronics Engineering	3	1	-	3
5	15A04306	Digital Logic Design	3	1	-	3
6	15A52301	Managerial Economics and Financial Analysis	3	1	-	3
7	15A05303	Database Management Systems Laboratory	-	-	4	2
8	15A99302	Basic Electrical and Electronics Laboratory	-	-	4	2
		Total	18	06	08	22

II B. Tech – II Sem

S. No	Course Code	Subject	L	T	P	C
1	15A54401	Probability and Statistics	3	1	-	3
2	15A05401	Software Engineering	3	1	-	3
3	15A05402	Computer Organization	3	1	-	3
4	15A04407	Microprocessors & Interfacing	3	1	-	3
5	15A05403	Object Oriented Programming using Java	3	1	-	3
6	15A05404	Formal Languages and Automata Theory	3	1	-	3
7	15A04408	Microprocessors & Interfacing Laboratory	-	-	4	2
8	15A05405	Java Programming Laboratory	-	-	4	2
9	15A05406	Comprehensive Online Examination-I	-	-	-	1
		Total	18	06	08	23

B.Tech III-I Semester (CSE)

S. No.	Course Code	Subject	L	T	P	C
1.	15A05501	Operating Systems	3	1	-	3
2.	15A05502	Computer Networks	3	1	-	3
3.	15A05503	Object Oriented Analysis and Design	3	1	-	3
4.	15A05504	Principles of Programming Languages	3	1	-	3
5.	15A05505	Software Testing	3	1	-	3
6.		MOOCS-I	3	1	-	3
	15A05506	a. Introduction to Big Data				
	15A05507	b. R Programming				
	15A05508	c. Introduction to Operations Management				
7.	15A05509	Object Oriented Analysis and Design & Software Testing Laboratory	-	-	4	2
8.	15A05510	Operating Systems Laboratory	-	-	4	2
9.	15A99501	Social Values & Ethics (Audit Course)	2	-	2	-
Total			20	06	10	22

B.Tech III-II Semester (CSE)

S. No.	Course Code	Subject	L	T	P	C
1.	15A05601	Compiler Design	3	1	-	3
2.	15A05602	Data Warehousing & Mining	3	1	-	3
3.	15A05603	Design Patterns	3	1	-	3
4.	15A05604	Design and Analysis of Algorithms	3	1	-	3
5.	15A05605	Web and Internet Technologies	3	1	-	3
6.		CBCC-I	3	1	-	3
	15A05606	a. Artificial Intelligence				
	15A05607	b. Linux Environment System				
	15A05608	c. System Applications & Product (SAP)				
	15A01608	d. Intellectual Property Rights				
7.	15A05609	Web and Internet Technologies Laboratory	-	-	4	2
8.	15A05610	Data Warehousing & Mining Laboratory.	-	-	4	2
9.	15A52602	Advanced English Language Communication Skills(AELCS) Laboratory (Audit Course)	-	-	2	-
10.	15A05611	Comprehensive Online Examination-II	-	-	-	1
Total			18	06	10	23

B.Tech IV-I Semester (CSE)


S. No.	Course Code	Subject	L	T	P	C
1.	15A52601	Management Science	3	1	-	3
2.	15A05701	Grid & Cloud Computing	3	1	-	3
3.	15A05702	Information Security	3	1	-	3
4.	15A05703	Mobile Application Development	3	1	-	3
5.	15A05704 15A05705 15A05706	CBCC-II a. Software Architecture b. Computer Graphics c. Machine Learning	3	1	-	3
6.	15A05707 15A05708 15A05709	CBCC-III a. Software Project Management b. Distributed Systems c. Real Time Systems	3	1	-	3
7.	15A05710	Grid & Cloud Computing Laboratory	-	-	4	2
8.	15A05711	Mobile Application Development Laboratory	-	-	4	2
Total			18	06	08	22

B.Tech IV-II Semester (CSE)

S. No.	Course Code	Subject	L	T	P	C
1.	15A05801 15A05802 15A05803	MOOCS-II a. Data Analytics b. Mobile Computing c. Innovations and IT Management	3	1	-	3
2.	15A05804 15A05805 15A05806	MOOCS-III a. Building Large Scale Software Systems b. Enabling Technologies for Data Science Analytics : IoT c. Cyber Security	3	1	-	3
3.	15A05807	Comprehensive Viva-Voce	-	-	4	2
4.	15A05808	Technical Seminar	-	-	4	2
5.	15A05809	Project Work	-	-	24	12
Total			6	2	32	22

Minor Discipline in CSE

S. No.	Course Code	Subject	L	T	P	C
1	15A05201	Data Structures	3	1	-	3
2	15A05301	Database Management Systems	3	1	-	3
3	15A05401	Software Engineering	3	1	-	3
4	15A05501	Operating Systems	3	1	-	3
5	15M05101	Minor Discipline Project	-	-	-	8
Total			12	4	-	20


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OPEN ELECTIVES

Academy
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List of Open Electives offered:

Department of Civil Engineering

S. No.	Course Code	Subject
1.	13A01709	Finite Element Methods in Engineering
2.	13A01710	Disaster management and Mitigation
3.	13A01711	Architecture and Town Planning
4.	13A01712	Intellectual Property Rights

Department of EEE

S. No.	Course Code	Subject
1.	13A02710	Optimization Techniques
2.	13A02711	Reliability and Safety Engineering
3.	13A02712	PLC & Its Applications.

Department of Mechanical Engineering

S. No.	Course Code	Subject
1.	13A03711	Energy Systems
2.	13A03712	Total Quality Management
3.	13A03713	Enterpreneurship
4.	13A03714	Reliability and Maintenance Engineering

Department of ECE

S. No.	Course Code	Subject
1.	13A04709	Concepts of Communication Systems
2.	13A04710	Neural Networks & Fuzzy Logic
3.	13A04711	Industrial Electronics

Department of EIE

S. No.	Course Code	Subject
1.	13A10707	Industrial safety & Management
2.	13A10708	MEMS & Applications
3.	13A10709	Nano Technology

Department of CSE

S. No.	Course Code	Subject
1.	13A05711	Soft Computing
2.	13A05712	Pattern Recognition
3.	13A05713	Intellectual Property Rights & Cyber Laws
4.	13A05714	Simulation & Modeling

Department of IT

S. No.	Course Code	Subject
1.	13A12706	E-Commerce
2.	13A05801	Cloud Computing
3.	13A05802	Software Project Management
4.	13A12707	Artificial Intelligence & Robotics

Department of Chemical Engineering

S. No.	Course Code	Subject
1.	13A08711	Basics of Nanotechnology
2.	13A08712	Industrial Safety & Hazard Management
3.	13A08713	Nuclear Engineering
4.	13A08714	Solid Waste Management


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ANANTHAPURAMU – 515 002 (A.P) INDIA

Course Structure & Syllabus for B.Tech. (Regular)
R13 Regulations
CIVIL ENGINEERING

B.Tech. I YEAR

S.No	Course code	Subject	Th	Tu/Drg/Lab.	Credits
1.	13A52101	Communicative English	2	- - -	3
2.	13A56101	Engineering Physics	2	- - -	3
3.	13A51101	Engineering Chemistry	2	- - -	3
4.	13A54101	Mathematics - I	3	1 - -	5
5.	13A12101	Programming in C & Data Structures	3	1 - -	5
6.	13A01101	Engineering Mechanics	3	1 - -	5
7.	13A03101	Engineering Drawing *	1	- 5 -	5
8.	13A12102	Programming in C & Data Structures Lab	-	- - 3	4
9.	13A99102	Engineering Physics & Engineering Chemistry Lab **	-	- - 3	4
10.	13A99103	Engineering & IT Workshop #	-	- - 3	4
11.	13A52102	English Language Comm. Skills Lab	-	- - 3	4
Total Credits					45

Th = Theory; Tu = Tutorial, Drg= Drawing & Lab = Laboratory:

* Engineering Drawing will have University External Exam.

** The students shall attend the Physics lab and Chemistry lab in alternate weeks. The end exam shall be conducted separately and average of the two exams shall be recorded by the University exam section.

The students shall attend Engineering workshop and IT work shop as a single lab every week and the end exam is conducted as a single lab. Sharing the Maximum marks and time for one task each from Engineering workshop and IT workshop. The sum of the marks awarded shall be recorded

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B.Tech. II - I Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A54301	Mathematics – II	3	1 -	3
2.	13A99301	Electrical & Mechanical Technology	3	1 -	3
3.	13A01301	Strength of Materials – I	3	1 -	3
4.	13A01302	Surveying – I	3	1 -	3
5.	13A01303	Fluid Mechanics	3	1 -	3
6.	13A01304	Building Materials & Construction	3	1 -	3
7.	13A01305	Surveying Lab – I	-	- 3	2
8.	13A01306	Strength of Materials Lab	-	- 3	2
Total Credits					22

B.Tech. II - II Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A54303	Probability & Statistics	3	1 -	3
2.	13A01401	Strength of Materials – II	3	1 -	3
3.	13A01402	Hydraulics & Hydraulic Machinery	3	1 -	3
4.	13A01403	Environmental Science	3	1 -	3
5.	13A01404	Structural Analysis – I	3	1 -	3
6.	13A01405	Surveying – II	3	1 -	3
7.	13A01406	Fluid Mechanics & Hydraulic Machinery Lab	-	- 3	2
8.	13A01407	Surveying Lab – II	-	- 3	2
Total Credits					22

Note: Survey Camp for a duration of two weeks to be conducted before the commencement of III B.Tech. – I Sem classwork, in the II B.Tech. – II Sem break. This survey camp has to be evaluated for 50 marks by the internal faculty. It has a weightage of 2 credits. The marks and credits will be incorporated in IV B.Tech. – II Sem marks memo.



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B.Tech. III - I Semester

S.No	Course code	Subject	Theory	Tu/ Drg / Lab	Credits
1.	13A01501	Building Planning & Drawing	2	- 2 -	3
2.	13A01502	Design & Drawing of Reinforced Concrete Structures	2	- 2 -	3
3.	13A01503	Concrete Technology	3	1 - -	3
4.	13A01504	Water Resources Engineering – I	3	1 - -	3
5.	13A01505	Structural Analysis – II	3	1 - -	3
6.	13A01506	Engineering Geology	3	1 - -	3
7.	13A01507	Engineering Geology Lab	-	- - 3	2
8.	13A01508	Concrete Technology Lab	-	- - 3	2
9.	13A52502	Advanced English Language Communication Skills Lab (Audit)	-	- - 3	-
Total Credits					22

B.Tech. III - II Semester

S.No	Course code	Subject	Theory	Tu/ Drg / Lab	Credits
1.	13A01601	Design & Drawing of Steel Structures	2	- 2 -	3
2.	13A01602	Geotechnical Engineering – I	3	1 - -	3
3.	13A01603	Environmental Engineering	3	1 - -	3
4.	13A01604	Water Resources Engineering – II	3	1 - -	3
5.	13A01605	Estimating, Costing and Valuation	3	1 - -	3
6.	13A01606	Transportation Engineering –I	3	1 - -	3
7.	13A01607	Geotechnical Engineering Lab	-	- - 3	2
8.	13A01608	Environmental Engineering Lab	-	- - 3	2
9.	13A52301	Human Values & Professional Ethics (Audit)	2	- - -	-
Total Credits					22



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B.Tech. IV - I Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A52501	Managerial Economics & Financial Analysis (MEFA)	3	1 -	3
2.	13A01701	Bridge Engineering	3	1 -	3
3.	13A01702	Geotechnical Engineering – II	3	1 -	3
4.	13A01703	Transportation Engineering – II	3	1 -	3
5.		Elective – I (Open Elective)	3	1 -	3
6.	13A01704 13A01705 13A01706	Elective – II Ground Improvement Techniques Air Pollution and Quality Control Construction Technology and Project Management	3	1 -	3
7.	13A01707	CAD Lab	-	- 3	2
8.	13A01708	Highway Materials Lab	-	- 3	2
Total Credits					22

B.Tech. IV - II Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A01801	Advanced Structural Engineering	3	1 -	3
2.	13A01802	Design and Drawing of Irrigation Structures	3	1 -	3
3.	13A01803 13A01804 13A01805 13A01806	Elective – III Advanced Foundation Engineering Water Shed Management Remote Sensing & GIS Rehabilitation and Retrofitting of Structures	3	1 -	3
4.	13A01807 13A01808 13A01809 13A01810	Elective – IV Experimental Stress Analysis Prestressed concrete Earth Quake Resistant design of Structures Environmental Impact Assessment and Management	3	1 -	3
5.	13A01811	Seminar & Comprehensive Viva-Voce	-	-	3
6.	13A01812	Project	-	-	8
7.	13A01813	Survey Camp (Conducted before III B.Tech. – I Sem)	-	-	2
Total Credits					25


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Course Structure & Syllabus for B.Tech. (Regular)
R13 Regulations

ELECTRICAL AND ELECTRONICS ENGINEERING

B.Tech. I Year

Sl.No	Course code	Subject	Th	Tu/	Lab	Credits
1.	13A52101	Communicative English	2	-	-	3
2.	13A56101	Engineering Physics	2	-	-	3
3.	13A51101	Engineering Chemistry	2	-	-	3
4.	13A54101	Mathematics – I	3	1	-	5
5.	13A12101	Programming in C & Data Structures	3	1	-	5
6.	13A54102	Mathematics - II	3	1	-	5
7.	13A02101	Electrical Circuits	3	1	-	5
8.	13A12102	Programming in C & Data Structures Lab		-	3	4
9.	13A99102	Engineering Physics and Engineering Chemistry Lab *		-	3	4
10.	13A99103	Engineering & I.T. Workshop #		-	3	4
11.	13A52102	English Language Communication Skills Lab		-	3	4
Total Credits						45

Th = Theory; Tu = Tutorial & Lab = Laboratory

* The students shall attend the Physics lab and Chemistry lab in alternate weeks. The end exam shall be conducted separately and average of the two exams shall be recorded by the University exam section.

The students shall attend Engineering and IT work shop as a single lab every week and the end exam is conducted as a single lab. Sharing the Maximum marks and time for one task each from Engineering workshop and IT workshop. The sum of the marks awarded shall be recorded.

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B.Tech. II - I Semester

S.No	Course code	Subject	Theory	Tu / Drg / Lab	Credits
1.	13A54302	Mathematics - III	3	1 - -	3
2.	13A01403	Environmental Science	3	1 - -	3
3.	13A01307	Fluid Mechanics and Hydraulic Machinery	3	1 - -	3
4.	13A04301	Electronic Devices and circuits	3	1 - -	3
5.	13A03304	Engineering Graphics	1	- 3 -	3
6.	13A02301	Electrical Machines –I	3	1 - -	3
7.	13A01406	Fluid Mechanics and Hydraulic Machinery lab	-	- - 3	2
8.	13A02302	Electric circuits and Simulation lab	-	- - 3	2
Total Credits					22

B.Tech. II - II Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A02401	Electromagnetic Fields	3	1 -	3
2.	13A02402	Control Systems Engineering	3	1 -	3
3.	13A04407	Analog Electronic Circuits	3	1 -	3
4.	13A04303	Switching Theory and logic design	3	1 -	3
5.	13A02403	Electrical Power Generating Systems	3	1 -	3
6.	13A02404	Electrical Machines –II	3	1 -	3
7.	13A02405	Electrical Machines Lab -I	-	- 3	2
8.	13A04305	Electronic Devices & Circuits lab	-	- 3	2
Total Credits					22

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B.Tech. III - I Semester

S.No.	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A52501	Managerial Economics and Financial Analysis	3	1 -	3
2.	13A02501	Electrical & Electronic Measuring Instruments	3	1 -	3
3.	13A04508	Linear & Digital IC Applications	3	1 -	3
4.	13A02502	Electrical Power Transmission Systems	3	1 -	3
5.	13A02503	Power Electronics	3	1 -	3
6.	13A02504	Electrical Machines – III	3	1 -	3
7.	13A02505	Electrical Machines Lab – II	-	- 3	2
8.	13A02506	Control Systems and Simulation Lab	-	- 3	2
9.	13A52301	Human Values & Professional Ethics (Audit course)	2	- -	-
Total Credits					22

B.Tech. III - II Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A52601	Management Science	3	1 -	3
2.	13A02601	Power Semiconductor Drives	3	1 -	3
3.	13A02602	Power System Protection	3	1 -	3
4.	13A04601	Microprocessors and Microcontrollers	3	1 -	3
5.	13A02603	Power System Operation and Control	3	1 -	3
6.	13A02604	Power System Analysis	3	1 -	3
7.	13A02605	Power Systems and Simulation Lab	-	- 3	2
8.	13A02606	Electrical Measurements Lab	-	- 3	2
9.	13A52502	Advanced English Language Communication Skills Lab (Audit course)	-	- 3	-
Total Credits					22


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B.Tech. IV - I Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A02701	Electrical Distribution Systems	3	1 -	3
2.	13A02702	Digital Signal Processing	3	1 -	3
3.	13A02703	HVDC Transmission	3	1 -	3
4.	13A02704	Flexible AC Transmission Systems	3	1 -	3
5.		Elective – I (Open Elective)	3	1 -	3
6.	13A02705	Elective – II Instrumentation	3	1 -	3
	13A02706	Design of Electrical Systems			
	13A04712	Communication Systems			
	13A02707	AI Applications to Electrical Systems			
7.	13A04605	Microprocessors and microcontrollers lab	-	- 3	2
8.	13A02708	Power Electronics and Simulation Lab	-	- 3	2
Total Credits					22

B.Tech. IV - II Semester

S.No.	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A02801	Power Quality	3	1 -	3
2.	13A02802	Utilization Of Electrical Energy	3	1 -	3
3.		ELECTIVE – III	3	1 -	3
	13A02803	Modern Control Theory			
	13A02804	Special Electro Mechanical Systems			
	13A02805	Power System Deregulation			
4.	13A02806	Switch Mode Power Converters	3	1 -	3
		ELECTIVE – IV			
	13A02807	Reliability Engineering & Applications to Power Systems			
	13A02808	High Voltage Engineering			
	13A02809	Smart Grid			
13A02810	Energy Auditing & Demand Side Management				
5.	13A02811	Seminar & Comprehensive viva voce	-	- -	3
6.	13A02812	Project	-	- -	10
Total Credits					25


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Course Structure & Syllabus for B.Tech. (Regular)
R13 Regulations
MECHANICAL ENGINEERING

B.Tech. I Year

S.No.	Course code	Subject	Th	Tu/Drg/Lab.	Credits
1.	13A52101	Communicative English	2	- - -	3
2.	13A56101	Engineering Physics	2	- - -	3
3.	13A51101	Engineering Chemistry	2	- - -	3
4.	13A54101	Mathematics - I	3	1 - -	5
5.	13A12101	Programming in C & Data Structures	3	1 - -	5
6.	13A01101	Engineering Mechanics	3	1 - -	5
7.	13A03101	Engineering Drawing *	1	- 5 -	5
8.	13A12102	Programming in C & Data Structures Lab	-	- - 3	4
9.	13A99102	Engineering Physics & Engineering Chemistry Lab **	-	- - 3	4
10.	13A99103	Engineering & IT Workshop #	-	- - 3	4
11.	13A52102	English Language Comm. Skills Lab	-	- - 3	4
Total Credits					45

Th = Theory; Tu = Tutorial, Drg= Drawing & Lab = Laboratory:

* Engineering Drawing will have University External Exam.

** The students shall attend the Physics lab and Chemistry lab in alternate weeks. The end exam shall be conducted separately and average of the two exams shall be recorded by the University exam section.

The students shall attend Engineering workshop and IT work shop as a single lab every week and the end exam is conducted as a single lab. Sharing the Maximum marks and time for one task each from Engineering workshop and IT workshop. The sum of the marks awarded shall be recorded


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B.Tech. II - I Semester


S.No	Course code	Subject	Theory	Tu/Drg/Lab	Credits
1.	13A54301	Mathematics – II	3	1 - -	3
2.	13A01308	Mechanics of Solids	3	1 - -	3
3.	13A99302	Electrical & Electronics Engineering	3	1 - -	3
4.	13A03301	Material Science and Engineering	3	1 - -	3
5.	13A03302	Thermodynamics	3	1 - -	3
6.	13A03303	Machine Drawing		6	3
7.	13A99303	Material Science Lab & Mechanics of Solids Lab		- - 3	2
8.	13A99304	Electrical & Electronics Engineering Lab	-	- - 3	2
9.	13A52301	Human Values and Professional Ethics(Audit Course)	2	- - -	-
Total Credits					22

B.Tech. II - II Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A01403	Environmental Science	3	1 -	3
2.	13A54303	Probability and Statistics	3	1 -	3
3.	13A03401	Kinematics of Machinery	3	1 -	3
4.	13A03402	Thermal Engineering – I	3	1 -	3
5.	13A01408	Mechanics of Fluids	3	1 -	3
6.	13A03403	Manufacturing Technology	3	1 -	3
7.	13A03404	Thermal Engineering Lab	-	- 3	2
8.	13A03405	Manufacturing Technology Lab	-	- 3	2
Total Credits					22

NOTE: For Machine Drawing:

- The End exam will be for 4 hrs in the following format
- All answers should be on the drawing sheet only. Answers on the drawing sheet only will be valued.
- First Angle Projections
 - Q1 Questions set on section I of the syllabus 2 out of 3 or 2 out of 4 to be answered with a weightage of 4 marks each-08 marks.
 - Q2 Questions set on section II of the syllabus 2 out of 3 to be answered with a weightage of 10 marks each-20 mrks.
 - Q3 Drawing of assembled views of section III items of syllabus with a weightage of 42 marks


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B.Tech. III - I Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A03501	Hydraulic Machinery	3	1 -	3
2.	13A03502	Thermal Engineering - II	3	1 -	3
3.	13A03503	Dynamics of Machinery	3	1 -	3
4.	13A03504	Metal Forming Processes	3	1 -	3
5.	13A03505	Design of Machine Members - I	3	1 -	3
6.	13A03506	Heat Transfer	3	1 -	3
7.	13A03507	Heat Transfer Lab	-	- 3	2
8.	13A01509	Fluid Mechanics & Hydraulic Machinery Lab	-	- 3	2
Total Credits					22

B.Tech. III - II Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A52501	Managerial Economics & Financial Analysis	3	1 -	3
2.	13A03601	CAD/CAM	3	1 -	3
3.	13A03602	Machine Tools	3	1 -	3
4.	13A03603	Refrigeration & Air Conditioning	3	1 -	3
5.	13A03604	Design of Machine Members - II	3	1 -	3
6.	13A03605	Automobile Engineering	3	1 -	3
7.	13A03606	CAD Lab	-	- 3	2
8.	13A03607	Machine Tools Lab	-	- 3	2
9.	13A52502	Advanced English language Comm. skills Lab(Audit course)	2	- -	-
Total Credits					22


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B.Tech. IV - I Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A03701	Operations Research	3	1 -	3
2.	13A03702	Automation & Robotics	3	1 -	3
3.	13A03703	Finite Element Methods	3	1 -	3
4.	13A03704	Metrology & Measurements	3	1 -	3
5.		ELECTIVE – I (Open Elective)	3	1 -	3
6.	13A03705 13A03706 13A03707 13A03708	ELECTIVE – II Computational Fluid Dynamics Mechatronics Concurrent Engineering Production & Operations Management	3	1 -	3
7.	13A03709	Metrology & Measurements Lab	-	- 3	2
8.	13A03710	Computer Aided Engineering Lab	-	- 3	2
Total Credits					22

B.Tech. IV - II Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A03801	Industrial Engineering & Management	3	1 -	3
2.	13A03802	Power Plant Engineering	3	1 -	3
3.	13A03803 13A03804 13A03805 13A03806	ELECTIVE – III Gas Turbines & Jet Propulsion Tool Design Tribology Composite Materials	3	1 -	3
4.	13A03807 13A03808 13A03809 13A03810	ELECTIVE – IV Modern Manufacturing Methods Design of Heat Transfer Equipment Mechanical Vibrations Product Design	3	1 -	3
5.	13A03811	Seminar & Comprehensive Viva-Voce	-	- -	3
6.	13A03812	Project	-	- -	10
Total Credits					25


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Course Structure & Syllabi for B.Tech. (Regular)
R13 Regulations

ELECTRONICS AND COMMUNICATION ENGINEERING

B.Tech. I Year

S.No	Course code	Subject	Theory	Tu/	Lab.	Credits
1.	13A52101	Communicative English	2	-	-	3
2.	13A56101	Engineering Physics	2	-	-	3
3.	13A51101	Engineering Chemistry	2	-	-	3
4.	13A54101	Mathematics - I	3	1	-	5
5.	13A12101	Programming in C & Data Structures	3	1	-	5
6.	13A54102	Mathematics - II	3	1	-	5
7.	13A04101	Network Analysis	3	1	-	5
8.	13A12102	Programming in C & Data Structures Lab	-	-	3	4
9.	13A99102	Engineering Physics & Engineering Chemistry Lab *	-	-	3	4
10.	13A99103	Engineering & IT Workshop #	-	-	3	4
11.	13A52102	English Language Comm. Skills Lab	-	-	3	4
Total Credits						45

Th = Theory; Tu = Tutorial & Lab = Laboratory:

* The students shall attend the Physics lab and Chemistry lab in alternate weeks. The end exam shall be conducted separately and average of the two exams shall be recorded by the University exam section.

The students shall attend Engineering and IT work shop as a single lab every week and the end exam is conducted as a single lab. Sharing the Maximum marks and time for one task each from Engineering workshop and IT workshop. The sum of the marks awarded shall be recorded.


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B.Tech. II - I Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A54302	Mathematics - III	3	1 -	3
2.	13A04301	Electronic Devices & Circuits	3	1 -	3
3.	13A04302	Signals & Systems	3	1 -	3
4.	13A04303	Switching Theory & Logic Design	3	1 -	3
5.	13A04304	Probability Theory & Stochastic Processes	3	1 -	3
6.	13A02303	Electrical Technology	3	1 -	3
7.	13A02304	Electrical Engineering Lab	-	- 3	2
8.	13A04305	Electronic Devices & Circuits Lab	-	- 3	2
9.	13A52301	Human Values and Professional Ethics(Audit Course)	2	- -	-
Total Credits					22

B.Tech. II - II Semester

S.No	Course code	Subject	Theory	Tu / Drg / Lab	Credits
1.	13A01403	Environmental Science	3	1 - -	3
2.	13A04401	Pulse & Digital Circuits	3	1 - -	3
3.	13A04402	Electronic Circuits Analysis & Design	3	1 - -	3
4.	13A04403	Electromagnetic Theory & Transmission Lines	3	1 - -	3
5.	13A03304	Engineering Graphics	1	- 3 -	3
6.	13A04404	Analog Communication Systems	3	1 - -	3
7.	13A04405	Electronic Circuits Analysis & Design Lab	-	- - 3	2
8.	13A04406	Pulse & Digital Circuits Lab	-	- - 3	2
Total Credits					22


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B.Tech. III - I Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A02402	Control Systems Engineering	3	1 -	3
2.	13A05401	Computer Organization & Architecture	3	1 -	3
3.	13A04501	Antennas & Wave Propagation	3	1 -	3
4.	13A04502	Digital Communication Systems	3	1 -	3
5.	13A04503	Linear IC Applications	3	1 -	3
6.	13A04504	Digital IC Applications	3	1 -	3
7.	13A04505	IC Applications Lab	-	- 3	2
8.	13A04506	Analog Communication Systems Lab	-	- 3	2
Total Credits					22

B.Tech. III - II Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A52501	Managerial Economics & Financial Analysis	3	1 -	3
2.	13A04601	Microprocessors & Microcontrollers	3	1 -	3
3.	13A04602	Digital Signal Processing	3	1 -	3
4.	13A04603	Microwave Engineering	4	1 -	4
5.	13A04604	Electronic Measurements & Instrumentation	3	1 -	3
6.	13A04605	Microprocessors & Microcontrollers Lab	3	1 -	2
7.	13A04606	Digital Signal Processing Lab	-	- 3	2
8.	13A04607	Digital Communication Systems Lab	-	- 3	2
9.	13A52502	Advanced English Language Comm. skills Lab(Audit course)	-	- 3	-
Total Credits					22


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B.Tech. IV - I Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A52601	Management Science	3	1 -	3
2.	13A04701	VLSI Design	3	1 -	3
3.	13A04702	Optical Fibre Communication	3	1 -	3
4.	13A04703	Embedded Systems	3	1 -	3
5.		Elective – I (Open Elective)	3	1 -	3
6.	13A04704 13A04705 13A04706	Elective-II Digital Image Processing RADAR & Navigational Aids T.V Engineering	3	1 -	3
7.	13A04707	VLSI & Embedded Systems Lab	-	- 3	2
8.	13A04708	Microwave & Optical Communications Lab	-	- 3	2
Total Credits					22

B.Tech. IV - II Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A04801	Mobile Communication	3	1 -	3
2.	13A04802	Computer Networks	3	1 -	3
3.	13A04803 13A04804 13A04805	Elective-III Satellite Communication Spread Spectrum Communication Multimedia Communication	3	1 -	3
4.	13A04806 13A04807 13A04808	Elective-IV Bio-Medical Instrumentation Speech Processing DSP Processors & Architectures	3	1 -	3
5.	13A04809	Seminar & Comprehensive Viva-voce	-	- -	3
6.	13A04810	Project work	-	- -	10
Total Credits					25


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

Course Structure & Syllabus for B.Tech. (Regular)
R13 Regulations

COMPUTER SCIENCE & ENGINEERING

B.Tech. I Year

S.No	Course code	Subject	Th	Tu/	Lab.	Credits
1.	13A52101	Communicative English	2	-	-	3
2.	13A56101	Engineering Physics	2	-	-	3
3.	13A51101	Engineering Chemistry	2	-	-	3
4.	13A54101	Mathematics - I	3	1	-	5
5.	13A05101	Problem Solving & Computer Programming	3	1	-	5
6.	13A54102	Mathematics - II	3	1	-	5
7.	13A99101	Basic Electrical & Electronics Engineering	3	1	-	5
8.	13A05102	Computer Programming Lab	-	-	3	4
9.	13A99102	Engineering Physics & Engineering Chemistry Lab *	-	-	3	4
10.	13A99103	Engineering & IT Workshop #	-	-	3	4
11.	13A52102	English Language Comm. Skills Lab	-	-	3	4
Total Credits						45

Th = Theory; Tu = Tutorial & Lab = Laboratory:

* The students shall attend the Physics lab and Chemistry lab in alternate weeks. The end exam shall be conducted separately and average of the two exams shall be recorded by the University exam section.

The students shall attend Engineering and IT work shop as a single lab every week and the end exam is conducted as a single lab. Sharing the Maximum marks and time for one task each from Engineering workshop and IT workshop. The sum of the marks awarded shall be recorded.


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B.Tech. II - I Semester

S.No	Course code	Subject	Th	Tu /Drg /Lab	Credits
1.	13A03304	Engineering Graphics	1	- 3 -	3
2.	13A54303	Probability and Statistics	3	1 - -	3
3.	13A01403	Environmental Science		1 - -	3
4.	13A05301	Data Structures	3	1 - -	3
5.	13A04306	Digital Logic Design	3	1 - -	3
6.	13A05302	Discrete Mathematics	3	1 - -	3
7.	13A99304	Electrical & Electronics Engineering Lab	-	- - 3	2
8.	13A05303	Data Structures Lab	-	- - 3	2
Total Credits					22

B.Tech. II - II Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A05401	Computer Organization & Architecture	3	1 -	3
2.	13A05402	Database Management Systems	3	1 -	3
3.	13A05403	Java Programming	3	1 -	3
4.	13A05404	Formal Languages & Automata Theory	3	1 -	3
5.	13A05405	Principles of Programming Languages	3	1 -	3
6.	13A05406	Design And Analysis of Algorithms	3	1 -	3
7.	13A05407	Database Management Systems Lab	-	- 3	2
8.	13A05408	Java Programming Lab	-	- 3	2
9.	13A52301	Human Values & Professional Ethics (Audit Course)	2	- -	-
Total Credits					22


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B.Tech. III - I Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A05501	Operating Systems	3	1 -	3
2.	13A05502	Compiler Design	3	1 -	3
3.	13A05503	Unix and Shell Programming	3	1 -	3
4.	13A05504	Software Engineering	3	1 -	3
5.	13A04507	Micro Processors & Interfacing	3	1 -	3
6.	13A52501	Managerial Economics and Financial Analysis	3	1 -	3
7.	13A05505	Operating Systems Lab	-	- 3	2
8.	13A05506	Compiler Design and Assembly Language Programming Lab	-	- 3	2
9.	13A52502	Advanced English language Comm. Skills Lab (Audit Course)	-	- 3	
Total Credits					22

B.Tech. III - II Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A05601	Computer Networks	3	1 -	3
2.	13A05602	Object Oriented Analysis, Design & Modeling	3	1 -	3
3.	13A05603	Data Mining	3	1 -	3
4.	13A05604	Web Programming	3	1 -	3
5.	13A05605	Software Testing Methodologies	3	1 -	3
6.	13A05606	Advanced Computer Architecture	3	1 -	3
7.	13A05607	Unified Modeling Language and Data Mining Lab	-	- 3	2
8.	13A05608	Web Programming Lab	-	- 3	2
Total Credits					22

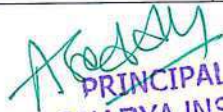
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B.Tech. IV - I Semester

S.No	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A05701	Computer Graphics & Multimedia	3	1 -	3
2.	13A05702	Cryptography & Network Security	3	1 -	3
3.	13A05703	Service Oriented Architecture	3	1 -	3
4.	13A05704	Mobile Application Development	3	1 -	3
5.		Elective – I (Open Elective)	3	1 -	3
6.	13A05705 13A05706 13A05707 13A05708	Elective –II Information Retrieval Systems Human Computer Interaction Computer Forensics Digital Image Processing	3	1 -	3
7.	13A05709	Computer Networks and Network Security Lab	-	- 3	2
8.	13A05710	Mobile Application Development and Computer Graphics Lab	-	- 3	2
Total Credits					22

B.Tech. IV - II Semester

S.No.	Course code	Subject	Theory	Tu / Lab	Credits
1.	13A52601	Management Science	3	1 -	3
2.	13A05801	Cloud Computing	3	1 -	3
3.	13A05802 13A05803 13A05804 13A05805	Elective-III Software Project Management Software Architecture & Design Patterns Storage Area Networks Artificial Intelligence	3	1 -	3
4.	13A05806 13A05807 13A05808 13A05809	Elective-IV Parallel and Randomized Algorithms Embedded Systems Game Theory Adhoc and Sensor Networks	3	1 -	3
5.	13A05810	Seminar & Comprehensive Viva-Voce	-	- -	3
6.	13A05811	Project	-	- -	10
Total Credits					25


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2012-13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

Course Structure and syllabi for
M.Tech- Structural Engineering
Offered by Department of Civil Engineering
for affiliated Engineering Colleges 2012-13

I YEAR I Semester

S. No	Course code	Subject	Theory	Lab.	Credits
1.	12D20101	Higher Engineering Mathematics	4		4
2.	12D20102	Advanced Structural Analysis	4		4
3.	12D20103	Theory of Elasticity and Plasticity	4		4
4.	12D20104	Theory and Analysis of Plates	4		4
5.		Elective - I	4		4
	12D20105a	1. Experimental Stress Analysis			
	12D20105b	2. Advanced Structural Design			
	12D20105c	3. Low cost Housing Techniques			
6.		Elective - II	4		4
	12D20106a	1. Prestressed concrete			
	12D20106b	2. Maintenance and Rehabilitation of Structures			
	12D20106c	3. Advanced Foundation Engineering			
7.	12D20107	Concrete Laboratory - I		3	2
		contact periods/week	24	3	
			Total	27	26


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I YEAR II Semester

S. No	Course code	Subject	Theory	Lab.	Credits
1.	12D20201	Structural Dynamics	4		4
2.	12D20202	Finite Element Method	4		4
3.	12D20203	Stability of Structures	4		4
4.	12D20204	Analysis of shells and folded plates	4		4
5.		Elective - III	4		4
	12D20205a	1. Design of Bridges			
	12D20205b	2. Concrete Technology			
	12D20205c	3. Earthquake Resistant Structures			
6.		Elective - IV	4		4
	12D20206a	1. Advanced steel structures			
	12D20206b	2. Building Construction Management			
	12D20206c	3. Fracture Mechanics			
7.	12D20207	Concrete Laboratory - II		3	2
		contact periods/week	24	3	
			Total	27	26

II YEAR (III & IV Semesters)

S. No	Course code	Subject	credits
1	12D75401	Seminar	2
2	12D75402	Project work	16

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2012-13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

Course Structure and syllabi for

M.Tech. Electrical Power Systems (EPS)
Electrical Power Engineering(EPE)
and Power Systems (PS)
Offered by Department of EEE

for affiliated Engineering Colleges 2012-13

I YEAR I SEMESTER

S. No	Course code	Subject	Theory	Lab.	Credits
1.	9D49101	Modern Control Theory	4		4
2.	9D49102	Microprocessors and Microcontrollers	4		4
3.	9D49103	Power System control & Stability	4		4
4.	9D49104	EHVAC Transmission	4		4
5.	9D49105	Reactive Power Compensation and Management	4		4
6.		Elective-I	4		4
	9D49106a	a. Advanced Digital Signal Processing			
	9D49106b	b. Neural Networks and Fuzzy Systems			
7.	9D49107	Electrical Machines & Power Systems Lab		3	2
		contact	24	3	
		periods/week	Total 27		26

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I YEAR II SEMESTER

S. No	Course Code	Subject	Theory	Lab.	Credits
1.	9D49201	FACTS	4		4
2.	9D49202	HVDC Transmission	4		4
3.	9D49203	Operation and Control of Power System	4		4
4.	9D49204	Advanced Power System Protection	4		4
5.	9D49205	Energy Conversion Systems	4		4
6.	9D49206a 9D49206b	Elective – II a. Programmable Logic Controllers b. Energy Auditing, Conservation and Management	4		4
7.	9D49207	Simulation Lab		3	2
		contact periods/week	24	3	
			Total 27		26

II YEAR (III & IV Semesters)

S. No	Course code	Subject		credits
1	9D49401	Seminar		2
2	9D49402	Project work		16


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2012-13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

Course Structure and syllabi for
M.Tech- Thermal Engineering

Offered by Department of Mechanical Engineering
for affiliated Engineering Colleges 2012-13

I YEAR I Semester

S. No	Course code	Subject	Theory	Lab.	Credits
1.	12D88101	Advanced Thermodynamics	4		4
2.	12D88102	Advanced Heat & Mass Transfer	4		4
3.	12D88103	Turbo Machines	4		4
4.	12D88104	Fuels, Combustion & Environment	4		4
5.	12D88105	FEA in Thermal Engineering	4		4
6.		Elective-I	4		4
	12D88106a	a. Refrigeration & Air Conditioning			
	12D88106b	b. Equipment design for Thermal Systems			
	12D88106c	c. Optimization Techniques & its Applications			
7.	12D88107	Advanced Thermal Engineering Lab		3	2
		contact periods/week	24	3	
			Total	27	26

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I YEAR II Semester

S. No	Course code	Subject	Theory	Lab.	Credits
1.	12D88201	Energy Management	4		4
2.	12D88202	Advanced I.C. Engines	4		4
3.	12D88203	Computational Fluid Dynamics	4		4
4.	12D88204	Thermal Measurements and Process Controls	4		4
5.	12D88205	Alternative Energy Sources	4		4
6.		Elective-II	4		4
	12D88206	a. Cryogenics Engineering			
	12D88207	b. Thermal & Nuclear Power Plants			
	12D88208	c. Jet Propulsion & Rocketry			
7.	12D88209	Computational Fluid Dynamics Lab		3	2
		contact periods/week	24	3	
			Total	27	26

II YEAR (III & IV Semesters)

S. No	Course code	Subject		credits
1	12D88401	Seminar		2
2	12D88402	Project work		16

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, ANANTAPUR

Course Structure and Syllabi for M.Tech.

VLSI SYSTEM DESIGN VLSI SYSTEMS AND VLSI

for affiliated Engineering Colleges 2009-10

I YEAR I SEMESTER

S. No	Course code	Subject	Theory	Lab.	Credits
1.	9D57101	VLSI Technology	4		4
2.	9D57102	Analog IC Design	4		4
3.	9D57103	Digital IC Design	4		4
4.	9D57104	Hardware Description Languages	4		4
5.	9D57105	Hardware Software Co-design	4		4
6.		ELECTIVE I	4		4
	9D57106a	a. Embedded system Concepts			
	9D57106b	b. System Modeling & Simulation			
	9D57106c	c. ASIC Design			
7.	9D57107	Digital IC Design Lab		3	2
		contact periods/week	24	3	
			Total 27		26

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I YEAR II SEMESTER

S. No	Course code	Subject	Theory	Lab.	Credits
1.	9D55201	Testing & Testability	4		4
2.	9D57202	Low Power VLSI Design	4		4
3.	9D57203	Algorithms for VLSI Design Automation	4		4
4.	9D55204	FPGA Architectures & Applications	4		4
5.	9D57205	Scripting Language for VLSI Design Automation	4		4
6.	9D57206a 9D57206b 9D57206c	ELECTIVE II a. Nano Electronics b. Cryptography & Network Security c. Real Time Operating Systems	4		4
7.	9D57207	Mixed Signal Lab		3	2
		contact periods/week	24	3	
			Total 27		26

II YEAR (III & IV Semesters)

S. No	Course code	Subject	credits
1	9D57401	Seminar	2
2	9D57402	Project work	16

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

Course Structure and Syllabi for M.Tech.

COMPUTER SCIENCE AND ENGINEERING (CSE)

AND COMPUTER SCIENCE (CS)

for affiliated Engineering Colleges 2009-10

I YEAR I SEMESTER

S. No	Course code	Subject	Theory	Lab.	Credits
1.	9D58101	Advanced Data Structures and Algorithms	4		4
2.	9D58102	Discrete Structures	4		4
3.	9D58103	Computer System Design	4		4
4.	9D58104	Java and Web Technologies	4		4
5.	9D58105	Software Engineering	4		4
6.		Elective-I	4		4
	9D58106a	a. Advances in Databases			
	9D58106b	b. Distributed Databases			
	9D58106c	c. Computer Vision			
7.	9D58107	Software Lab- 1 (Covering the experiments: Data structures & Algorithms and Web Technologies)		3	2
		contact periods/week	24	3	
			Total 27		26

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2009-10

I YEAR

II SEMESTER

S. No	Course code	Subject	Theory	Lab.	Credits
1.	9D58201	Software Quality Assurance and Testing	4		4
2.	9D58202	Object Oriented Analysis and Design	4		4
3.	9D58203	Advanced Computer Networks	4		4
4.	9D58204	Distributed Systems	4		4
5.	9D58205	Data Warehousing and Mining	4		4
6.		Elective-II	4		4
	9D58206a	a. Software Architecture			
	9D58206b	b. Software Design			
	9D58206c	c. Design Patterns			
7.	9D58207	Software Lab- 2 (Covering the experiments: OOAD & Data Warehousing and Mining		3	2
		contact periods/week	24	3	
			Total	27	26

II YEAR

(III & IV Semesters)

S. No	Course code	Subject		credits
1.	9D58401	Seminar		2
2.	9D58402	Project work		16

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
Course Structure and syllabi for
M.Tech- Structural Engineering
for affiliated Engineering Colleges 2017-18

I YEAR I Semester

S. No	Course Code	Subject	L	T	P	C
1.	17D20101	Advanced Mathematical Methods	4	---	---	4
2.	17D20102	Advanced Structural Analysis	4	---	---	4
3.	17D20103	Theory Of Elasticity And Plasticity	4	---	---	4
4.	17D20104	Theory And Analysis Of Plates	4	---	---	4
5.		Elective – I	4	---	---	4
	17D20105	1. Experimental Stress Analysis				
	17D20106	2. Advanced Concrete Technology				
	17D20107	3. Low Cost Housing Techniques				
6.		Elective – II	4	---	---	4
	17D20108	1. Prestressed Concrete				
	17D20109	2. Maintenance And Rehabilitation Of Structures				
	17D20110	3. Advanced Foundation Engineering				
7.	17D20111	Advanced Concrete Laboratory	--	---	4	2
Total			24		4	26

I YEAR II Semester

S. No	Course Code	Subject	L	T	P	C
1.	17D20201	Structural Dynamics	4	---	---	4
2.	17D20202	Finite Element Methods	4	---	---	4
3.	17D20203	Stability Of Structures	4	---	---	4
4.	17D20204	Analysis Of Shells And Folded Plates	4	---	---	4
5.		Elective – III	4	---	---	4
	17D20205	1. Design Of Bridges				
	17D20206	2. Advanced Structural Design				
	17D20207	3. Earthquake Resistant Structures				
6.		Elective – IV	4	---	---	4
	17D20208	1. Advanced Steel Structures				
	17D20209	2. Building Construction And Management				
	17D20210	3. Fracture Mechanics				
7.	17D20211	Structural Design Studio	--	---	4	2
Total			24		4	26

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M.Tech. II YEAR (III Semester)


S. No	Course Code	Subject	L	T	P	C
1.	17D20301 17D20302 17D20303	Elective – V (Open Elective) 1. Research Methodology 2. Human Values & Professional Ethics 3. Intellectual Property Rights	4	---	---	4
2.	17D20304	ELECTIVE – VI (MOOCs)	--	---	---	--
3.	17D20305	Comprehensive Viva Voce	--	---	---	2
4.	17D20306	Seminar	--	---	---	2
5.	17D20307	Teaching Assignment	--	---	---	2
6.	17D20308	Project Work Phase I	--	---	---	4
Total			4			14

M.Tech. II YEAR (IV Semester)

S. No	Course Code	Subject	L	T	P	C
1.	17D20401	Project Work Phase II	--	---	---	12
Total						12

Project Viva Voce Grades:

- A: Satisfactory
- B: Not Satisfactory


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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
ANANTHAPURAMU (A.P.)
COURSE STRUCTURE AND SYLLABUS
(For Affiliated Engineering Colleges w.e.f. 2017-18 Admitted Batch)
M.TECH - ELECTRICAL POWER ENGINEERING,
ELECTRICAL POWER SYSTEMS and POWER SYSTEM

M.Tech I Semester

S.No	Subject Code	Subject	L	T	P	C
1.	17D49101	Advanced Power System Protection	4	-	-	4
2.	17D49102	Machine Modeling and Analysis	4	-	-	4
3.	17D49103	Optimization & Heuristic Search Techniques	4	-	-	4
4.	17D49104	Restructured Power Systems	4	-		4
5.	17D49105 17D49106 17D49107	Elective-I 1. Modern Control Engineering & Principles of Optimal Control 2. FACTS Controllers 3. Solar Energy Conversion Systems	4	-	-	4
6.	17D49108 17D49109 17D49110	Elective-II 1. Power System Wide Area Monitoring & Control 2. Energy Auditing and Management 3. State Estimation Techniques	4	-	-	4
7.	17D49111	Machines & Power Systems Lab	-	-	4	2
TOTAL			22	-	04	26

M.Tech II Semester

S.No	Subject Code	Subject	L	T	P	C
1.	17D49201	Reliability Engineering and Application to Power Systems	4	-	-	4
2.	17D49202	Power Quality	4	-	-	4
3.	17D49203	Smart Grid Technologies	4	-	-	4
4.	17D49204	Power System Stability & Control	4	-		4
5.	17D49205 17D49206 17D49207	Elective-III 1. Reactive Power Compensation & Management 2. Power System Optimization 3. HVDC & EHVAC Transmission Systems	4	-	-	4
6.	17D49208 17D49209 17D49210	Elective-IV 1. Distributed Generation & Micro grid Control 2. Wind Energy Conversion Systems 3. Intelligent Control Techniques	4	-	-	4
7.	17D49211	Power System Simulation Lab	-	-	4	2
TOTAL			22	-	04	26

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M.Tech III Semester

S.No	Subject Code	Subject	L	T	P	C
1.	17D20301 17D20302 17D20303	Elective – V 1. Research Methodology 2. Human Values and Professional Ethics 3. Intellectual Property Rights	4	-	-	4
2.	17D49301	Elective - VI (MOOCS)	-	-	-	-
3.	17D49302	Comprehensive Viva-Voce	-	-	-	2
4.	17D49303	Seminar	-	-	-	2
5.	17D49304	Teaching Assignment	-	-	-	2
6.	17D49305	Project Work Part – I	-	-	-	4
TOTAL			04	-	-	14


M.Tech IV Semester

S.No	Subject Code	Subject	L	T	P	C
1.	17D49401	Project Work Part - II	-	-	-	12

Project Viva Voce Grades:

A: Satisfactory

B: Not Satisfactory


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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

**Course Structure and syllabi for
M.Tech-ME-Thermal Engineering
for affiliated Engineering Colleges 2017-18**

I YEAR - I Semester

S. No	Course Code	Subjects	L	T	P	C
1	17D11102	Advanced Thermodynamics	4	-	-	4
2	17D11201	Advanced Heat & Mass Transfer	4	-	-	4
3	17D88101	Turbo Machines	4	-	-	4
4	17D88102	Fuels, Combustion & Environment	4	-	-	4
5		Elective-I	4	-	-	4
	17D88103	a. Refrigeration & Air Conditioning				
	17D88104	b. Equipment design for Thermal Systems				
	17D11206	c. Optimization Techniques & its Applications				
6		Elective – II	-	-	-	4
	17D88105	FEA in Thermal Engineering				
	17D88106	Design of heat exchangers				
	17D88107	Energy resources				
7	17D88108	Advanced Thermal Engineering Laboratory	-	-	3	2
			24	-	3	26

I YEAR II Semester

S. No	Course Code	Subject	L	T	P	C
1	17D11209	Advanced I.C. Engines	4	-	-	4
2	17D11204	Computational Fluid Dynamics	4	-	-	4
3	17D11108	Instrumentation for thermal Engineering	4	-	-	4
4	17D88201	Design of thermal systems	4	-	-	4
5		Elective-III	4	-	-	4
	17D17107	a. Cryogenics Engineering				
	17D88202	b. Thermal & Nuclear Power Plants				
	17D88203	c. Jet Propulsion & Rocketry				
6		Elective IV	4	-	-	4
	17D88204	a) Environmental Engineering Pollution Control				
	17D88205	b) Alternative energy sources				
	17D88206	c) Air craft and space Propulsion				
7	17D88207	Computational Fluid Dynamics Laboratory	-	-	3	2
			24	-	3	26

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III SEMESTER

S.No	Subject Code	Subject	L	T	P	C
1.	17D20301 17D20302 17D20303	Elective V a) Research Methodology b) Human Values and Professional Ethics c) Intellectual Property Rights	4	-	-	4
2.	17D88301	Elective VI (MOOCS)	-	-	-	-
3.	17D88302	Comprehensive Viva – Voice	-	-	-	2
4.	17D88303	Seminar	-	-	-	2
5.	17D88304	Teaching Assignment	-	-	-	2
6.	17D88305	Project work phase – I	-	-	-	4

IV SEMESTER

S.No	Subject Code	Subject	L	T	P	C
1.	17D88401	Project work Phase – II	-	-	-	12

Project Viva Voce Grades:

A: Satisfactory

B: Not Satisfactory

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ANANTHAPURAMU (A.P.)
COURSE STRUCTURE AND SYLLABUS
(For Affiliated Engineering Colleges w.e.f. 2017-18 Admitted Batch)

M.Tech-ECE-VLSI, VLSI SYSTEMS, VLSI SYSTEM DESIGN (VLSI, VLSIS, VLSISD)

M.Tech I Semester

S.No	Subject Code	Subject	L	T	P	C
1.	17D06101	Structural Digital System Design	4	-	-	4
2.	17D57101	Advanced MOSFET Modeling	4	-	-	4
3.	17D57102	CMOS Analog IC Design	4	-	-	4
4.	17D57103	CMOS Digital IC Design	4	-	-	4
5.		Elective-I	3	-	-	3
	17D57104	a. VLSI Signal Processing				
	17D06103	b. Advanced Computer Architecture				
	17D57105	c. CAD for VLSI				
6.		Elective-II	3	-	-	3
	17D06202	a. CPLD and FPGA Architectures and Applications				
	17D55206	b. ASIC Design				
	17D57106	c. Optimization Techniques in VLSI Design				
7.	17D38107	Structural Digital System Design Lab	-	-	3	2
8.	17D57107	VLSI System Design Lab - I	-	-	3	2
Total			22	-	06	26

M.Tech II Semester

S.No	Subject Code	Subject	L	T	P	C
1.	17D57201	Low Power VLSI Design	4	-	-	4
2.	17D57202	CMOS Mixed signal Design	4	-	-	4
3.	17D06201	Embedded System Design	4	-	-	4
4.	17D06109	Test and Testability	4	-	-	4
5.		Elective-III	3	-	-	3
	17D55201	a. System On Chip Architecture				
	17D57203	b. Semiconductor Memory Design and Testing				
	17D57204	c. RF IC Design				
6.		Elective-IV	3	-	-	3
	17D38202	a. Internet of Things				
	17D55204	b. Hardware and Software Co-design of Embedded System				
	17D57205	c. Physical Design Automation				
7.	17D38208	Embedded System Design Lab	-	-	3	2
8.	17D57206	VLSI System Design Lab - II	-	-	3	2
Total			22	-	06	26

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M.Tech. II YEAR (III Semester)

S. No	Course Code	Subject	L	T	P	C
1.	17D20301 17D20302 17D20303	Elective – V (Open Elective) 1. Research Methodology 2. Human Values & Professional Ethics 3. Intellectual Property Rights	4	---	---	4
2.	17D57301	ELECTIVE – VI (MOOCs)	--	---	---	--
3.	17D57302	Comprehensive Viva Voce	--	---	---	2
4.	17D57303	Seminar	--	---	---	2
5.	17D57304	Teaching Assignment	--	---	---	2
6.	17D57305	Project Work Phase I	--	---	---	4
		Total	4			14


M.Tech. II YEAR (IV Semester)

S. No	Course Code	Subject	L	T	P	C
1.	17D57401	Project Work Phase II	--	---	---	12
		Total				12

Project Viva Voce Grades:

A: Satisfactory

B: Not Satisfactory


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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
COURSE STRUCTURE AND SYLLBI FOR
M.Tech-Computer Science & Engineering and M. Tech - Computer Science
w.e.f. 2017-18 Admitted Batch onwards

M.Tech I Semester

S.No	Subject Code	Subject	L	T	P	C
1.	17D58101	Advanced Data Structures and Algorithms	4	-	-	4
2.	17D58102	Fundamentals of Data Science	4	-	-	4
3.	17D58103	Software Patterns	4	-	-	4
4.		Elective-I	4	-	-	4
	17D25205	a. Software Project Management				
	17D58104	b. Information Security				
	17D58105	c. Distributed Databases				
	17D58106	d. Neural Networks				
5.		Elective-II	4	-	-	4
	17D25106	a. Professional Aspects In Software Engineering				
	17D58107	b. Artificial Intelligence				
	17D58108	c. Internals of Operating Systems				
	17D58109	d. Multicore Architecture & Programming				
6.	17D58110	Advanced Data Structures and Algorithms Lab	-		4	2
7.	17D58111	R & Analytics Lab	-		4	2
8.	17D58112	Software Patterns Lab	-		4	2
Total			20		12	26

M.Tech II Semester

S.No	Subject Code	Subject	L	T	P	C
1.	17D25201	Advances in Software Testing	4	-	-	4
2.	17D58201	Big Data Analytics	4	-	-	4
3.	17D58202	Mobile Application Development	4	-	-	4
4.		Elective-III	4	-	-	4
	17D58203	a. Internet of Things				
	17D58204	b. Distributed Computing				
	17D08102	c. Network Security & Cryptography				
	17D58205	d. NOSQL Databases				
5.		Elective-IV	4	-	-	4
	17D58206	a. Machine Learning				
	17D58207	b. Cloud Computing				
	17D25207	c. Software Configuration Management				
	17D58208	d. Natural Language Processing				
6.	17D25209	Advances in Software Testing Lab	-	-	4	2
7.	17D58209	Map Reduce Programming Lab	-	-	4	2
8.	17D58210	Mobile Application Development Lab	-	-	4	2
Total			20		12	26

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M.Tech III Semester

S.No	Subject Code	Subject	L	T	P	C
1.	17D20301 17D20302 17D20303	Elective-V (Open Elective) 1. Research Methodology 2. Human Values & Professional Ethics 3. Intellectual Property Rights	4	-	-	4
2.	17D58301	Elective-VI (MOOCs)	-	-	-	-
3.	17D58302	Comprehensive Viva-Voice	-	-	-	2
4.	17D58303	Seminar	-	-	-	2
5.	17D58304	Teaching Assignment	-	-	-	2
6.	17D58305	Project work Phase-I	-	-	-	4
Total			04	-	-	14


M.Tech IV Semester

S.No.	Subject Code	Subject	L	T	P	C
1.	17D58401	Project work Phase - II	-	-	-	12
Total			-	-	-	12

Project Viva Voce Grades:

A: Satisfactory

B: Not Satisfactory


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