

DEPARTMENT OF CIVIL ENGINEERING

NARASARAOPETA ENGINEERING COLLEGE:: NARASARAOPET

(AUTONOMOUS)

DEPARTMENT OF CIVIL ENGINEERING

R20 COURSE STRUCTURE

B.TECH I YEAR – I SEMESTER

S.No	CODE	SUBJECT NAME	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	L	T	P	C
1	R20CC1103	Engineering Chemistry	30	70	100	3	0	0	3
2	R20CC1102	Matrix Algebra and Calculus	30	70	100	2	1	0	3
3	R20CC1101	Technical and Communicative English-I	30	70	100	3	0	0	3
4	R20CC1107	Engineering Mechanics	30	70	100	2	1	0	3
5	R20CC1105	Problem Solving Using C	30	70	100	3	0	0	3
6	R20CC11L1	Soft skills and Communication Skills Lab-1	15	35	50	0	0	3	1.5
7	R20CC11L5	Engineering Chemistry Lab	15	35	50	0	0	3	1.5
8	R20CC11L2	Problem Solving Using C Lab	15	35	50	0	0	3	1.5
		Total							19.5




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I BTECH II SEMESTER

S.No	CODE	SUBJECT NAME	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	L	T	P	C
1	R20CC1201	Differential Equations and Vector Calculus	30	70	100	2	1	0	3
2	R20CC1203	Engineering Physics	30	70	100	3	0	0	3
3	R20CC1207	Engineering Drawing	30	70	100	1	0	4	3
4	R20CE1212	Elements of Mechanical and Ele. and Engg.	30	70	100	3	0	0	3
5	R20CE1216	Elements of Building Science	30	70	100	3	0	0	3
6	R20CC12L6	Elements of Mechanical and Ele. and Engg Lab	15	35	50	0	0	3	1.5
7	R20CC12L5	Engineering Physics Lab	15	35	50	0	0	3	1.5
8	R20CC12L4	Engineering Workshop	15	35	50	0	0	3	1.5
9	R20CCMC2	Constitution of India(MC)	15	35	50	2	0	0	0
		Total							19.5




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II B. TECH. – I SEMESTER

S. No	Subject Code	Subject	Cat Code	Internal Marks	External Marks	Total Marks	L	T	P	Credits
COMMON CORE										
1	19BCC3TH01	Business Management Concepts for Engineers	HS	40	60	100	3	0	0	3
PROFESSIONAL CORE										
2	19BCE3TH02	Engineering Geology	PC	40	60	100	3	0	0	3
3	19BCE3TH03	Numerical Methods & Transformations	BS	40	60	100	3	0	0	3
4	19BCE3TH04	Building Materials and Building Construction	PC	40	60	100	2	0	0	3
5	19BCE3TH05	Mechanics of Solids	PC	40	60	100	3	0	0	3
6	19BCE3TH06	Surveying	PC	40	60	100	3	0	0	3
LABORATORIES										
7	19BCE3LBO1	Mechanics of Solids Laboratory	PC	20	30	50	0	0	3	1.5
8	19BCE3LBO2	Engineering Geology Laboratory	PC	20	30	50	0	0	3	1.5
9	19BCE3LBO3	Surveying Laboratory	PC	20	30	50	0	0	3	1.5
NON-CREDIT MANDATORY COURSES										
10	19BCC3MC01	Quantitative Aptitude and Reasoning	MC				2	0		0
Total										22.5




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II B. TECH. – II SEMESTER

Sl. No.	Subject Code	Subject	Cat Code	Internal Marks	External Marks	Total Marks	L	T	P	Credits
COMMON CORE										
1	19BCC4TH01	Complex Variables, Probability & Statistics	BS	40	60	100	3	0	0	3
PROFESSIONAL CORE										
2	19BCE4TH02	Structural Analysis-I	PC	40	60	100	3	0	0	3
3	19BCE4TH03	Building Planning, Service Design and Drawing	PC	40	60	100	1	1	2	3
4	19BCE4TH04	Fluid Mechanics and Hydraulic Machinery	PC	40	60	100	3	0	0	3
OPEN ELECTIVES										
Open Elective – I										
5	19BCE4OE11	Geographical Information Systems	OE	40	60	100	3	0	0	3
6	19BCE4OE12	Public Health Engineering	OE	40	60	100	3	0	0	3
LABORATORIES										
6	19BCC4LB01	English Communication Skills Laboratory - II	HS	20	30	50	0	0	3	1.5
7	19BCE4LB02	Fluid Mechanics and Hydraulic Machinery Laboratory	PC	20	30	50	0	0	3	1.5
8	19BCE4LB03	Computer Aided Building Drafting	PC	20	30	50	0	0	3	1.5
Non-Credit Mandatory Course										
9	19BCC 4MC01	Community Services (MC)	MC				2	0	0	0
Total										19.5

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DEPARTMENT OF CIVIL ENGINEERING

III B.TECH - I SEMESTER COURSE STRUCTURE

S.No	Subject Name	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Structural Analysis-II	PC	3	1	-	40	60	100	3
2	Concrete Technology	PC	4	-	-	40	60	100	3
3	Geotechnical Engineering -I	PC	3	1	-	40	60	100	3
4	Design And Drawing Of Concrete Structures	PC	3	1	-	40	60	100	3
5	Transportation Engineering-I	PC	4	-	-	40	60	100	3
6	Open Elective-I (See The List Of Open Electives)	OE	4	-	-	40	60	100	3
7	Geotechnical Engineering Laboratory	PC	-	-	3	25	50	75	2
8	Concrete Technology Laboratory	PC	-	-	3	25	50	75	2
9	Advanced Communication Skills (Mandatory Non Credit Course)	MDC	3	-	-	-	-	-	-
10	Sports And Games (Mandatory Non Credit Course)	MDC	-	-	2	-	-	-	-
TOTAL			24	3	8	290	460	750	22




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III B.TECH - II SEMESTER COURSE STRUCTURE

S.No	Subject Name	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Design And Drawing Of Steel Structures	PC	3	1	-	40	60	100	3
2	Environmental Engineering-I	PC	3	1	-	40	60	100	3
3	Geotechnical Engineering -II	PC	3	1	-	40	60	100	3
4	Transportation Engineering-II	PC	4	-	-	40	60	100	3
	Professional Elective-I	PE							
	Advanced Structural Analysis								
	Alternative Building Materials & Technologies								
5	Ground Improvement Techniques		3	1	-	40	60	100	3
	Ground Water Hydrology								
	Rural Water Supply & Sanitation								
	Traffic Engineering								
6	Open Elective-II (See The List Of Open Electives)	OE	4	-	-	40	60	100	3
7	Transportation Engineering Laboratory	PC	-	-	3	25	50	75	2
8	Computer Applications In Civil Engineering Laboratory	ES	-	-	3	25	50	75	2
9	Quantitative Aptitude And Reasoning-II (Mandatory Non Credit Course)	MDC	3	-	-	-	-	-	-
	TOTAL		23	4	6	290	460	750	22




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DEPARTMENT OF CIVIL ENGINEERING

IV B.TECH- I SEMESTER COURSE STRUCTURE

S.No	Subject Name	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Estimation Costing & Valuation	PC	3	1	-	40	60	100	3
2	Environmental Engineering-II	PC	3	1	-	40	60	100	3
3	Construction Technology & Management	HS	4	-	-	40	60	100	3
4	Open Elective-III (See The List Of Open Electives)	OE	4	-	-	40	60	100	3
5	Professional Elective-II	PE							
	Matrix Methods Of Structural Analysis								
	Advanced Design Of R C Structures								
	Earth And Earth Retaining Structures		3	1	-	40	60	100	3
	Highway Geometric Design								
	Open Channel Hydraulics								
	Advanced Surveying								
6	Professional Elective-III	PE							
	Numerical Methods In Civil Engineering								
	Theory Of Elasticity								
	Pavement Materials And Construction								
	Air Pollution And Control		3	1	-	40	60	100	3
	Photogrammetry And Remote Sensing								
	Advanced Design Of Steel Structures								
	Bridge Engineering								
7	Environmental Engineering Lab	PC	-	-	3	25	50	75	2
8	Mini Project On Planning, Analysis & Design Of G+2building	PRC	-	-	3	25	50	75	2

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DEPARTMENT OF CIVIL ENGINEERING

IV B.TECH- II SEMESTER COURSE STRUCTURE

S.No	Subject Name	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Business Management Concepts For Engineers	PC	4	-	-	40	60	100	3
2	Professional Elective-IV	PE							
	Pre-Stressed Concrete Structures								
	Advanced Foundation Engineering.								
	Pavement Design								
	Earthquake Resistant Design Of Structures		3	1	-	40	60	100	3
	Industrial Waste Water Treatment								
	Pre-Fabricated Structures								
3	Professional Elective-V	PE							
	Finite Element Analysis								
	Reinforced Earth Structures								
	Urban Transport Planning								
	Geographic Information System		3	1	-	40	60	100	3
	Water Resources Engineering								
4	Project Work	PRC	-	-	-	80	120	200	10
	Practical Training/Intern Ship	PRC	-	-	-	40	60	100	03
	TOTAL		10	2	-	240	360	600	22




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LIST OF OPEN ELECTIVES:

Open Elective – I Subject Title	Department Offering the Subject	No.of periods per week		No.of Credits
		L	T	
Elements Of Mechanical Engineering (Other Than ME)	ME	4	-	3
Material Science (Other Than ME)	ME	4	-	3
Basic Electrical And Electronics Engineering (Other Than EEE,ECE & ME)	EEE	4	-	3
Industrial Electronics (Other Than EEE)	EEE	4	-	3
Principles Of Signals, System & Communications (Other Than ECE)	ECE	4	-	3
Automotive Electronics	ECE	4	-	3
Medical Electronics	ECE	4	-	3
Image Processing Algorithms And Analysis (Other Than ECE)	ECE	4	-	3
Database Management Systems (Other Than CSE & ECE)	CSE	4	-	3
Front End Ui & Frame Work Tools (Other Than Cse)	CSE	4	-	3
Principles Of Water Quality Management.	CE	4	-	3
Remote Sensing And GIS (Other Than CE).	CE	4	-	3



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Open Elective – II	Department Offering the Subject	No. of periods per week		No. of Credits
		L	T	
Subject Title				
Nanotechnology	ME	4	-	3
Work Study	ME	4	-	3
Fundamentals Of Electrical Energy(Other Than EEE)	EEE	4	-	3
Linear Control Theory (Other Than EEE & ECE)	EEE	4	-	3
Introduction To Microprocessors And Micro Controllers (Other Than ECE & EEE)	ECE	4	-	3
Consumer Electronics	ECE	4	-	3
Internet Of Things (IOT) (Other Than CSE)	CSE	4	-	3
Web Technologies (Other Than CSE)	CSE	4	-	3
Cloud Computing (Other Than ECE)	CSE	4	-	3
OOPS Through JAVA (Other Than CSE & ECE)	CSE	4	-	3
Disaster Management	CE	4	-	3
Building Services (Other Than CE).	CE	4	-	3




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Open Elective – III	Department Offering the Subject	No. of periods per week		No. of Credits
		L	T	
Subject Title				
Operations Research (Other Than Me)	ME	4	-	3
Robotics	ME	4	-	3
Energy Audit, Conservation & Management (Other Than Eee)	EEE	4	-	3
Non-Conventional Energy Resources (Other Than EEE)	EEE	4	-	3
Introduction To Embedded Systems (Other Than ECE)	ECE	4	-	3
Global Positioning System	ECE	4	-	3
Computer Networks (Other Than CSE & ECE)	CSE	4	-	3
Web Animation And Interactivity Using Flash	CSE	4	-	3
Web Services	CSE	4	-	3
Water Shed Management.	CE	4	-	3
Solid And Hazardous Waste Management (Other Than CE).	CE	4	-	3




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I B.TECH., I SEMESTER

S.No.	SUBJECT	Course code	Cat. Code	L	T	P	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	CREDITS
1	Matrix Algebra and Calculus	R20CC1102	BS	2	1	0	30	70	100	3
2	Engineering Chemistry	R20CC1103	BS	3	0	0	30	70	100	3
3	Technical and Communicative English-I	R20CC1101	HS	3	0	0	30	70	100	3
4	Engineering Graphics	R20EC1110	ES	1	0	4	30	70	100	3
5	Problem solving using C	R20CC1105	ES	3	0	0	30	70	100	3
6	Soft Skills and Communication Skills Lab	R20CC11L1	HS	0	0	3	15	35	50	1.5
7	Engineering Chemistry Lab	R20CC11L5	BS	0	0	3	15	35	50	1.5
8	Problem solving using C Lab	R20CC11L2	ES	0	0	3	15	35	50	1.5
Total				12	1	13	195	455	650	19.5



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I B.TECH., II SEMESTER

S.N o.	SUBJECT	Course Code	Cat. Code	L	T	P	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	CREDITS
1	Differential Equations and Vector Calculus	R20CC1201	BS	2	1	0	30	70	100	3
2	Applied Physics	R20EC1205	BS	3	0	0	30	70	100	3
3	Problem Solving using Python	R20CC1206	ES	3	0	0	30	70	100	3
4	Network Analysis	R20EC1215	ES	3	0	0	30	70	100	3
5	Data Structures	R20EC1219	ES	3	0	0	30	70	100	3
6	Data Structures Lab	R20CC12L8	ES	0	0	3	15	35	50	1.5
7	Applied Physics Lab	R20CC12L10	BS	0	0	3	15	35	50	1.5
8	Problem Solving using Python Lab	R20CC12L1	ES	0	0	3	15	35	50	1.5
9	Constitution of India	R20CCMC2	MC	2	0	0				0
Total				16	1	9	195	455	650	19.5




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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

II B.TECH. – I SEMESTER

S.No.	SUBJECT	Cat. Code	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	L	T	P	CREDITS
1	Numerical Methods & Complex Variables	BS	40	60	100	3	-	-	3
2	Electronic Devices and Circuits	PC	40	60	100	3	-	-	3
3	Signals and Systems	PC	40	60	100	3	-	-	3
4	Internet of Things	ES	40	60	100	3	-	-	3
5	Data Structures	ES	40	60	100	3	-	-	3
6	Electronic Devices and Circuits Lab	PC	20	30	50	-	-	3	1.5
7	Signals and Systems Lab	PC	20	30	50	-	-	3	1.5
8	IOT Lab	ES	20	30	50	-	-	3	1.5
9	Data Structures Lab	ES	20	30	50	-	-	3	1.5
10	Quantitative Aptitude and Reasoning	MC	-	-	-	3	-	-	-
Total			280	420	700	18	-	12	21




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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

II B.TECH. – II SEMESTER

S.N o.	SUBJECT	Cat. Code	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	L	T	P	CREDITS
1	Electronic Circuit Analysis	PC	40	60	100	3	-	-	3
2	Switching Theory and Logic Design	PC	40	60	100	3	-	-	3
3	Random Variables and Stochastic Processes	BS	40	60	100	3	-	-	3
4	Communication Systems	PC	40	60	100	3	-	-	3
5	Electromagnetic Waves and Transmission Lines	PC	40	60	100	3	-	-	3
6	Open Elective - I: i. Principles of Signals, Systems & Communications (Other than ECE) ii. Medical Electronics	OE	40	60	100	3	-	-	3
7	English Communication Skills Lab – II	BS	20	30	50	-	-	3	1.5
8	Communication Systems Lab	PC	20	30	50	-	-	3	1.5
9	Community Services	MC	-	-	-	-	-	-	-
Total			280	420	700	18	-	6	21




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List of open Electives offered by all Departments

Open Elective-I

S.No.	Open Elective-I Subject Title	Department Offering the Subject	Sub Code	No.of periods per week			No.of Credits
				L	T	P	
1	Public Health Engineering	CE	19BCC4OE01	3	0	0	3
2	Geographical Information Systems	CE	19BCC4OE02	3	0	0	3
3	Micro Electro Mechanical System	EEE	19BCC4OE03	3	0	0	3
4	Energy Audit Conservation and Management	EEE	19BCC4OE04	3	0	0	3
5	RPT & 3D Printing (Other than ME)	ME	19BCC4OE05	3	0	0	3
6	Operations Research	ME	19BCC4OE06	3	0	0	3
7	Principles of Signals, Systems & Communications (Other than ECE)	ECE	19BCC4OE07	3	0	0	3
8	Medical Electronics	ECE	19BCC4OE08	3	0	0	3
9	DBMS (Other Than CSE)	CSE	19BCC4OE09	3	0	0	3
10	Web Development Using Mean Stack Tech	CSE	19BCC4OE10	3	0	0	3
11	Front End UI and Frame Work	IT	19BCC4OE11	3	0	0	3
12	Front End Web Technologies	IT	19BCC4OE12	3	0	0	3
13	Financial Institutions, Markets and Services	MBA	19BCC4OE13	3	0	0	3
14	Human Resource Practices	MBA	19BCC4OE14	3	0	0	3




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III B. Tech. - I SEMESTER COURSE STRUCTURE:

S.No.	Subject	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Linear and Digital IC Applications	PC	3	1	-	40	60	100	3
2	Digital Communications	PC	3	1	-	40	60	100	3
3	Antenna and Wave Propagation	PC	3	1	-	40	60	100	3
4	Computer Organization and Microprocessors	PC	4	-	-	40	60	100	3
5	Open Elective - I	OE	4	-	-	40	60	100	3
6	Linear and Digital IC Applications Lab	PC	-	-	3	25	50	75	2
7	Digital Communications Lab	PC	-	-	3	25	50	75	2
8	Microprocessors and Interfacing Lab	PC	-	-	3	25	50	75	2
9	Mini Project	PW	-	-	-	25	50	75	1
10	Quantitative Aptitude and Reasoning – II (Mandatory Non-credit Course)	MC	3	-	-	-	-	-	-
Total			20	3	9	300	500	800	22




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III B.TECH. – II SEMESTER COURSE STRUCTURE:

S.No.	Subject	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	VLSI Design	PC	3	1	-	40	60	100	3
2	Microwave and Optical Communications	PC	4	-	-	40	60	100	3
3	Digital Signal Processing	PC	3	1	-	40	60	100	3
4	Electronic Measurements and Instrumentation	PC	3	1	-	40	60	100	3
5	Professional Elective – I:								
	i. Analog IC Design								
	ii. Electronic Switching Systems								
	iii. Advanced Computer Architecture	PE	4	-	-	40	60	100	3
	iv. Coding Theory and Practice								
	v. Digital Image Processing								
6	Open Elective - II	OE	4	-	-	40	60	100	3
7	Digital Signal Processing Lab	PC	-	-	3	25	50	75	2
8	Microwave & Optical Communications Lab	PC	-	-	3	25	50	75	2
9	Advanced Communication Skills (Mandatory Non-credit Course)	MC	3	-	-	-	-	-	-
10	MOOCS	MC	-	-	-	-	-	-	-
Total			25	2	6	290	460	750	22




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IV B. Tech. - I SEMESTER COURSE STRUCTURE:

S.No.	Subject	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Object Oriented Programming through Java	ES	3	1	-	40	60	100	3
2	Microcontrollers and Embedded Systems	PC	4	-	-	40	60	100	3
3	Computer Networks	PC	4	-	-	40	60	100	3
4	Professional Elective - II:								
	i. Digital IC design								
	ii. Satellite Communications								
	iii. Network Security and Cryptography	PE	4	-	-	40	60	100	3
	iv. Bio Medical Instrumentation								
5	v. Advanced DSP								
	Professional Elective - III:								
	i. Mixed Signal Design								
	ii. Radar Systems								
	iii. Cloud Computing								
iv. Analytical Instrumentation	PE	4	-	-	40	60	100	3	
v. Digital Signal Processors and Architectures									
6	Open Elective - III	OE	4	-	-	40	60	100	3
7	VLSI and Embedded Systems Lab	PC	-	-	3	25	50	75	2
8	Object Oriented Programming through Java Lab	ES	-	-	3	25	50	75	2
Total			23	1	6	290	460	750	22




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IV B.TECH. – II SEMESTER COURSE STRUCTURE:

S.No.	Subject	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Cellular and Mobile Communications	PC	4	-	-	40	60	100	3
2	Professional Elective - IV: i. Low power IC design ii. Wireless Sensor Networks iii. System-On-Chip iv. PC based Instrumentation v. Speech Processing	PE	4	-	-	40	60	100	3
3	Professional Elective - V: i. FPGA Design ii. Software Defined Radio iii. Distributed Computing iv. Data Acquisition and Transmission v. Embedded System Design	PE	4	-	-	40	60	100	3
4	Project Work	PW	-	-	-	80	120	200	10
5	Practical Training / Internship	PW	-	-	-	40	60	100	3
Total			12	-	-	240	360	600	22




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LIST OF OPEN ELECTIVES

Open Elective – I Subject Title	Department Offering the Subject	No. of periods per week		No. of Credits
		L	T	
Elements of Mechanical Engineering (Other than ME)	ME	4	-	3
Material Science (Other than ME)	ME	4	-	3
Basic Electrical and Electronics Engineering (Other than EEE, ME & ECE)	EEE	4	-	3
Industrial Electronics (Other than EEE)	EEE	4	-	3
Principles of Signals, Systems & Communications (Other than ECE)	ECE	4	-	3
Automotive Electronics	ECE	4	-	3
Medical Electronics	ECE	4	-	3
Image Processing Algorithms and Analysis (Other than ECE)	ECE	4	-	3
Database Management Systems (Other than ECE & CSE)	CSE	4	-	3
Front End UI & Frame Work Tools (Other than CSE)	CSE	4	-	3
Principles of Water Quality Management	CE	4	-	3
Remote Sensing and GIS (Other than CE)	CE	4	-	3




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Open Elective – II	Department Offering the Subject	No. of periods per week		No. of Credits
		L	T	
Subject Title				
Nanotechnology	ME	4	-	3
Work Study	ME	4	-	3
Fundamentals of Electrical Energy (Other than EEE)	EEE	4	-	3
Linear Control Theory (Other than EEE & ECE)	EEE	4	-	3
Introduction to Microprocessors and Microcontrollers (Other than EEE & ECE)	ECE	4	-	3
Consumer Electronics	ECE	4	-	3
Internet of Things (IOT) (Other than CSE)	CSE	4	-	3
Web Technologies (Other than CSE)	CSE	4	-	3
Cloud Computing (Other than ECE)	CSE	4	-	3
OOPS through JAVA (Other than ECE & CSE)	CSE	4	-	3
Disaster Management	CE	4	-	3
Building Services (Other than CE)	CE	4	-	3



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Open Elective – III	Department Offering the Subject	No. of periods per week		No. of Credits
		L	T	
Subject Title				
Operations Research (Other than ME)	ME	4	-	3
Robotics	ME	4	-	3
Energy Audit, Conservation & Management (Other than EEE)	EEE	4	-	3
Non-Conventional Energy Resources (Other than EEE)	EEE	4	-	3
Introduction to Embedded Systems (Other than ECE)	ECE	4	-	3
Global Positioning System (GPS)	ECE	4	-	3
Computer Networks (Other than ECE & CSE)	CSE	4	-	3
Web Animation and Interactivity using Flash	CSE	4	-	3
Web Services	CSE	4	-	3
Watershed Management	CE	4	-	3
Solid and Hazardous Waste Management (Other than CE)	CE	4	-	3




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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
R20 COURSE STRUCTURE

I B. Tech. - I SEMESTER

S. No.	Subject Code	Subject	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	R20CC1101	Technical and Communicative English – I	HSMC	3	0	0	30	70	100	3
2	R20CC1102	Matrix Algebra and Calculus	BSC	2	1	0	30	70	100	3
3	R20EE1109	Basics in Mechanical and Civil Engineering	ESC	3	0	0	30	70	100	3
4	R20CC1105	Problem Solving Using C	ESC	3	0	0	30	70	100	3
5	R20EE1112	Engineering Drawing and Design	ESC	1	0	4	30	70	100	3
6	R20CC11L1	Soft Skills and Communication Skills Lab	HSMC	0	0	3	15	35	50	1.5
7	R20EE11L6	Basics in Mechanical and Civil Engineering Lab	ESC	0	0	3	15	35	50	1.5
8	R20CC11L2	Problem Solving Using C Lab	ESC	0	0	3	15	35	50	1.5
		Total		12	1	13	195	455	650	19.5



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I B. Tech. – II SEMESTER

S. No.	Subject Code	Subject	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	R20CC1201	Differential Equations and Vector Calculus	BSC	2	1	0	30	70	100	3
2	R20CC1205	Applied Physics	BSC	3	0	0	30	70	100	3
3	R20EE1209	Electronics Devices and Circuits	ESC	3	0	0	30	70	100	3
4	R20EE1213	Electrical Circuit Analysis-I	PCC	2	1	0	30	70	100	3
5	R20EE1217	Data Structures using C	ESC	3	0	0	30	70	100	3
6	R20CC12L10	Applied Physics Lab	BSC	0	0	3	15	35	50	1.5
7	R20CC12L9	Electronics Devices and Circuits Lab	ESC	0	0	3	15	35	50	1.5
8	R20CC12L11	Data Structures using C Lab	ESC	0	0	3	15	35	50	1.5
9	R20CCMC1	Constitution of India (MC)	MC	2	0	0	-	-	-	-
Total				15	2	9	195	455	650	19.5




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II B.TECH. - I SEMESTER

S.No.	Subject Code	Subject	Cat. Code	Internal Marks	External Marks	Total Marks	L	T	P	Credits
1	19BCC3TH01	Numerical Methods & Transformations	BS	40	60	100	3	-	-	3
2	19BEE3TH02	Electronic Devices and Circuits	ES	40	60	100	3	-	-	3
3	19BEE3TH03	Electrical Circuit Analysis - II	PC	40	60	100	3	-	-	3
4	19BEE3TH04	Electrical Machines-I	PC	40	60	100	3	-	-	3
5	19BEE3TH05	Electro Magnetic Fields	PC	40	60	100	3	-	-	3
6	19BEE3TH06	Analog Electronics	PC	40	60	100	3	-	-	3
7	19BEE3LB01	Electronic Devices and Circuits Lab	ES	20	30	50	-	-	3	1.5
8	19BEE3LB02	Electrical Circuit Analysis Lab	PC	20	30	50	-	-	3	1.5
9	19BCC3MC02	Community Service	MC	-	-	-	-	-	-	-
		Total		280	420	700	18	-	6	21



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II B.TECH. – II SEMESTER

S.No.	Subject Code	Subject	Cat. Code	Internal Marks	External Marks	Total Marks	L	T	P	Credits
1	19BCC4TH01	Complex Variables, Probability & Statistics	BS	40	60	100	3	-	-	3
2	19BEE4TH02	Problem Solving with Python	ES	40	60	100	3	-	-	3
3	19BEE4TH03	Digital logic and circuits	PC	40	60	100	3	-	-	3
4	19BEE4TH04	Electrical Machines-II	PC	40	60	100	3	-	-	3
5		Open Elective-I	OE	40	60	100	3	-	-	3
6	19BCC4LB01	English Communication Skills Lab-II	HS	20	30	50	-	-	3	1.5
7	19BEE4LB02	Python Lab	ES	20	30	50	-	-	3	1.5
8	19BEE4LB03	Electrical Machines Lab-I	PC	20	30	50	-	-	3	1.5
9	19BEE4LB04	Analog and Digital Circuits Lab	PC	20	30	50	-	-	3	1.5
10	19BCC4MC02	Quantitative Aptitude and Reasoning	MC	-	-	-	3	-	-	-
		Total		280	420	700	18	-	12	21



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III B.TECH. - I SEMESTER

S. No.	Subject	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Power System Transmission Lines	PC	3	1	-	40	60	100	3
2	Power Electronics	PC	3	1	-	40	60	100	3
3	Electrical Measurements	PC	3	1	-	40	60	100	3
4	Microprocessor & Microcontrollers	PC	3	1	-	40	60	100	3
5	Signals and Systems	PC	3	1	-	40	60	100	3
6	Professional Elective - I 1. Renewable Energy Sources 2. Electrical Machine Design 3. Micro Electro Mechanical Systems 4. Industrial Instrumentation	PE	3	1	-	40	60	100	3
7	Control Systems and Measurements Laboratory	PC	-	-	3	25	50	75	2
8	Electrical Machines - II Laboratory	PC	-	-	3	25	50	75	2
9	Mini Project - I	PW	-	-	-	25	50	75	1
10	Advanced Communication Skills	MC	2	-	-	-	-	-	-
11	Sports and Games	MC	-	-	3	-	-	-	-
	Total		20	6	9	315	510	825	23



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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

III B.TECH. - II SEMESTER

S. No.	Subject	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Power System Analysis	PC	3	1	-	40	60	100	3
2	Power Semiconductor Drives	PC	3	1	-	40	60	100	3
3	Data Structures	ES	3	1	-	40	60	100	3
4	Professional Elective - II 1. Electrical Distribution Systems 2. Energy Audit Conservation and Management 3. Digital Signal Processing 4. Special Machines	PE	3	1	-	40	60	100	3
5	Open Elective - I	OE	4	-	-	40	60	100	3
6	Power Electronics Lab	PC	-	-	3	25	50	75	2
7	Data Structures Lab	ES	-	-	3	25	50	75	2
8	Microprocessors and Microcontrollers Lab	PC	-	-	3	25	50	75	2
9	Quantitative Aptitude & Reasoning II	MC	3	-	-	-	-	-	-
	Total		19	4	9	275	450	725	21

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IV B.TECH. - I SEMESTER

S. No.	Subject	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Power System Operation and Control	PC	3	1	-	40	60	100	3
2	Switchgear and Protection	PC	3	1	-	40	60	100	3
3	Utilization of Electrical Energy	PC	3	1	-	40	60	100	3
4	Open Elective – II	OE	4	-	-	40	60	100	3
5	Professional Elective - III 1.Modern Control Systems 2.VLSI Design 3.Embedded Systems 4.Power Quality	PE	3	1	-	40	60	100	3
6	Professional Elective - IV 1.HVAC & DC Transmission 2.PLC and Automation 3.High Voltage Engineering 4.Optimization Techniques	PE	3	1	-	40	60	100	3
7	Power Systems and Simulation Lab	PC	-	-	3	25	50	75	2
8	Mini Project – II	PW	-	-	3	25	50	75	2
	Total		19	5	6	290	460	750	22




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IV.TECH. - II SEMESTER

S. No.	Subject	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Soft Computing Techniques to Electrical Engineering	PC	3	1	-	40	60	100	3
2	Professional Elective – V 1. FACTS 2. Power System Deregulation 3. SmartGrid 4. Switched Mode Power Converters	PE	3	1	-	40	60	100	3
3	Open Elective - III	OE	4	-	-	40	60	100	3
4	Practical Training / Internship	PW	-	-	-	40	60	100	3
5	Project Work	PW	-	-	-	80	120	200	10
	Total		10	2	-	240	360	600	22



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LIST OF OPEN ELECTIVES

Open Elective – I	Department Offering the Subject	No. of periods per week		No. of Credits
		L	T	
Subject Title				
Elements of Mechanical Engineering (Other than ME)	ME	4	-	3
Material Science (Other than ME)	ME	4	-	3
Basic Electrical and Electronics Engineering (Other than EEE, ECE & ME)	EEE	4	-	3
Industrial Electronics (Other than EEE)	EEE	4	-	3
Principles of Signals, system & Communications (Other than ECE)	ECE	4	-	3
Automotive Electronics	ECE	4	-	3
Medical Electronics	ECE	4	-	3
Image Processing Algorithms and Analysis (Other than ECE)	ECE	4	-	3
Database Management Systems (Other than CSE & ECE)	CSE	4	-	3
Front End UI & Frame Work Tools (Other than CSE)	CSE	4	-	3
Principles of water quality management.	CE	4	-	3
Remote Sensing and GIS (other than CE).	CE	4	-	3



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Open Elective – II	Department Offering the Subject	No. of periods per week		No. of Credits
		L	T	
Subject Title				
Nanotechnology	ME	4	-	3
Work Study	ME	4	-	3
Fundamentals of Electrical Energy (Other than EEE)	EEE	4	-	3
Linear Control Theory (Other than EEE & ECE)	EEE	4	-	3
Introduction to Microprocessors and Micro Controllers (Other than ECE & EEE)	ECE	4	-	3
Consumer Electronics	ECE	4	-	3
Internet of Things (IOT) (Other than CSE)	CSE	4	-	3
Web Technologies (Other than CSE)	CSE	4	-	3
Cloud Computing (Other than ECE)	CSE	4	-	3
OOPS through JAVA (Other than CSE & ECE)	CSE	4	-	3
Disaster Management	CE	4	-	3
Building Services (Other than CE).	CE	4	-	3





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Open Elective – III	Department Offering the Subject	No. of periods per week		No. of Credits
		L	T	
Subject Title				
Operations Research (Other Than ME)	ME	4	-	3
Robotics	ME	4	-	3
Energy Audit, Conservation & Management (Other than EEE)	EEE	4	-	3
Non-Conventional Energy Resources (Other than EEE)	EEE	4	-	3
Introduction to embedded systems (Other than ECE)	ECE	4	-	3
Global Positioning System	ECE	4	-	3
Computer Networks (Other than CSE & ECE)	CSE	4	-	3
Web Animation and Interactivity Using Flash	CSE	4	-	3
Web Services	CSE	4	-	3
Water shed Management.	CE	4	-	3
Solid and Hazardous waste management (Other than CE).	CE	4	-	3




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DEPARTMENT OF MECHANICAL ENGINEERING

I B.TECH- I SEMESTER

S. No	Subject	Course Code	Cat. Code	Internal Marks	External Marks	Total Marks	L	T	P	Credits
1	Engineering Chemistry	R20CC1103	BS	30	70	100	3	0	0	3
2	Matrix Algebra and Calculus	R20CC1102	BS	30	70	100	2	1	0	3
3	Technical and Communicative English-I	R20CC1101	HS	30	70	100	3	0	0	3
4	Engineering Mechanics	R20CC1107	ES	30	70	100	2	1	0	3
5	Problem Solving using Python	R20ME1106	ES	30	70	100	3	0	0	3
6	Soft skills and Communication Skills Lab-1	R20CC11L1	HS	15	35	50	0	0	3	1.5
7	Engineering Chemistry Lab	R20CC11L5	BS	15	35	50	0	0	3	1.5
8	Problem Solving using Python Lab	R20ME11L3	ES	15	35	50	0	0	3	1.5
Total										19.5




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I B.TECH – II SEMESTER

S. No	Subject	Course Code	Cat. Code	Internal Marks	External Marks	Total Marks	L	T	P	Credits
1	Differential Equations and Vector Calculus	R20CC1201	BS	30	70	100	2	1	0	3
2	Engineering Physics	R20CC1203	BS	30	70	100	3	0	0	3
3	Engineering Drawing	R20CC1207	ES	30	70	100	1	0	4	3
4	Elements of Electrical and Electronics Engg.	R20ME1214	ES	30	70	100	3	0	0	3
5	Material Science and Metallurgy	R20ME1218	ES	30	70	100	3	0	0	3
6	Elements of Electrical and Electronics Engg. Lab	R20CC12L7	ES	15	35	50	0	0	3	1.5
7	Engineering Physics Lab	R20CC12L5	BS	15	35	50	0	0	3	1.5
8	Engineering Workshop	R20CC12L4	ES	15	35	50	0	0	3	1.5
9	Constitution of India (MC)	R20CCMC2	MC	-	-	-	2	0	0	0
Total										19.5




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II B.TECH – I SEMESTER

S.No.	Subject	Sub Code	Cat. Code	Internal Marks	External Marks	Total Marks	L	T	P	Credits
1	Fluid Mechanics & Hydraulic Machinery	19BME3TH02	PC	40	60	100	2	1	-	3
2	Materials Science and Metallurgy	19BME3TH04	PC	40	60	100	3	-	-	3
3	Thermodynamics	19BME3TH05	PC	40	60	100	2	1	-	3
4	Mechanics of Solids	19BME3TH06	PC	40	60	100	2	1	-	3
5	Numerical Methods & Transformations	19BCC3TH01	BS	40	60	100	2	1	-	3
6	Machine Drawing & Basic Design Engg. Soft. Lab.	19BME3TH03	ES	40	60	100	1	-	4	3
7	Fluid Mechanics & Hydraulic Machinery Lab	19BME3LB01	PC	20	30	50	-	-	3	1.5
8	Mechanics of Solids & Metallurgy Lab	19BME3LB02	PC	20	30	50	-	-	3	1.5
9	Quantitative Aptitude & Reasoning	19BCC3MC01	MC	-	-	-	3	-	-	0
10	Community Service	19BCC3MC02	MC	-	-	-	-	-	-	0
Total										21



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II B.TECH- II SEMESTER

S.No.	Subject	Sub Code	Cat. Code	Internal Marks	External Marks	Total Marks	L	T	P	Credits
1	Kinematics of Machinery	19BME4TH01	PC	40	60	100	2	1	-	3
2	Manufacturing Technology	19BME4TH02	PC	40	60	100	3	-	-	3
3	Metrology & Instrumentation	19BME4TH03	PC	40	60	100	3	-	-	3
4	Applied Thermo Dynamics	19BME4TH04	PC	40	60	100	2	1	-	3
5	Open Elective-1		OE	40	60	100	3	-	-	3
6	Applied Thermo Dynamics Lab	19BME4LB01	PC	20	30	50	-	-	3	1.5
7	Metrology & Instrumentation Lab	19BME4LB02	PC	20	30	50	-	-	3	1.5
8	Manufacturing Technology Lab	19BME4LB03	PC	20	30	50	-	-	3	1.5
9	English Communication Skills Lab - II	19BCC4LB01	HS	20	30	50	-	-	3	1.5
Total										21



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LIST OF OPEN ELECTIVES OFFERED BY ALL DEPARTMENTS

Open Elective-I

S.No.	Open Elective-I Subject Title	Department Offering the Subject	Sub Code	No. of periods per week		No. of Credits
				L	T	C
1	MEMS	EEE	19BCC4OE03	3	-	3
2	Energy Audit, Conservation & Management	EEE	19BCC4OE04	3	-	3
3	RPT & 3D Printing (Other than ME)	ME	19BCC4OE05	3	-	3
4	Operations Research	ME	19BCC4OE06	3	-	3
7	DBMS (Other Than CSE)	CSE	19BCC4OE11	3	-	3
8	Web Development Using Mean Stack Tech	CSE	19BCC4OE12	3	-	3
9	Principles of Signals, Systems & Communications (Other than ECE)	ECE	19BCC4OE09	3	-	3
10	Medical Electronics	ECE	19BCC4OE10	3	-	3
11	GIS	CE	19BCC4OE02	3	-	3
12	Public Health Engineering	CE	19BCC4OE01	3	-	3



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III B.Tech - I SEMESTER COURSE STRUCTURE

S.No	Subject Name	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Metal Cutting & Machine Tools	PC	4	-	-	40	60	100	3
2	Heat Power Engineering	PC	3	1	-	40	60	100	3
3	Machine Dynamics & Vibrations	PC	3	1	-	40	60	100	3
4	Principles of Machine Design	PC	3	1	-	40	60	100	3
5	Operations Research	BS	3	1	-	40	60	100	3
6	Open Elective-I (See the List of Open Electives)	OE	4	-	-	40	60	100	3
7	Heat Power Engineering Lab	PC	-	-	3	25	50	75	2
8	Machine Tools & Machine Dynamics Lab	PC	-	-	3	25	50	75	2
9	Advanced Communication Skills (Mandatory Non Credit Course)	MDC	3	-	-	-	-	-	-
10	Sports and Games (Mandatory Non Credit Course)	MDC	-	-	2	-	-	-	-
TOTAL			23	4	08	290	460	750	22



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III B.Tech - II SEMESTER COURSE STRUCTURE

S.No	Subject Name	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Metrology & Instrumentation	PC	4	-	-	40	60	100	3
2	Design of Mechanical Components	PC	3	1	-	40	60	100	3
3	Heat Transfer	PC	3	1	-	40	60	100	3
4	Automobile Engineering	ES	4	-	-	40	60	100	3
5	ELECTIVE-I	PE							
	Gas Turbines and Jet Propulsion								
	Fracture Mechanics								
	Jigs, Fixtures & Press Tool Design		3	1	-	40	60	100	3
	Industrial Engineering and Cost Estimation								
6	Open Elective-II (See the List of Open Electives)	OE	4	-	-	40	60	100	3
7	Heat Transfer Lab	PC	-	-	3	25	50	75	2
8	Metrology & Instrumentation Lab	PC	-	-	3	25	50	75	2
9	Reasoning (Mandatory Non Credit Course)	MDC	3	-	-	-	-	-	-
	TOTAL		24	3	6	290	460	750	22



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IV B.Tech - I SEMESTER COURSE STRUCTURE

S. No	Subject Name	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Finite Element Methods	PC	3	1	-	40	60	100	3
2	CAD/CAM	PC	4	-	-	40	60	100	3
3	Advanced Manufacturing Processes	PC	4	-	-	40	60	100	3
4	Open Elective-III (See the List of Open Electives)	OE	4	-	-	40	60	100	3
5	ELECTIVE-II	PE							
	Power Plant Engineering								
	Tribology and Bearing Design								
	Advanced Tool Design		4	-	-	40	60	100	3
	Facility Layout and Material Handling								
6	ELECTIVE-III	PE							
	Computational Fluid Dynamics		3	1	-	40	60	100	3
	Rapid Prototyping								
	Advanced Mechanics of Solids								
	Production planning & Control								
7	CAD/CAM Lab	PC	-	-	3	25	50	75	2
8	Mini Project-II	PRC	-	-	-	25	50	75	2
9	NSS (Mandatory Non Credit Course)	MDC	-	-	2	-	-	-	-
	TOTAL		22	2	5	290	460	750	22



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IV B.Tech - II SEMESTER COURSE STRUCTURE

S. No	Subject Name	Cat. Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Mechatronics	PC	4	-	-	40	60	100	3
1	ELECTIVE-IV	PE							
	Refrigeration & Air Conditioning								
	Condition Monitoring								
	Powder Metallurgy								
	Quality and Reliability Engineering		3	1	-	40	60	100	3
2	ELECTIVE-V	PE							
	Alternate Sources of Energy								
	Experimental Stress Analysis								
	Geometric Modelling		4	-	-	40	60	100	3
	Operations Planning and Control								
3	Project Work	PRC	-	-	-	80	120	200	10
4	Practical Training/Intern Ship	PRC	-	-	-	40	60	100	03
	TOTAL		11	1	-	240	360	600	22



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 NARASARAOPET - 522 601.
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LIST OF OPEN ELECTIVES

Open Elective – I Subject Title	Department Offering the Subject	No. of periods per week		No. of Credits
		L	T	C
Elements of Mechanical Engineering (Other than ME)	ME	4	-	3
Material Science (Other than ME)	ME	4	-	3
Basic Electrical and Electronics Engineering (Other than EEE,ECE & ME)	EEE	4	-	3
Industrial Electronics (Other than EEE)	EEE	4	-	3
Principles of Signals, system & Communications (Other than ECE)	ECE	4	-	3
Automotive Electronics	ECE	4	-	3
Medical Electronics	ECE	4	-	3
Image Processing Algorithms and Analysis (Other than ECE)	ECE	4	-	3
Database Management Systems (Other than CSE & ECE)	CSE	4	-	3
Front End UI & Frame Work Tools (Other than CSE)	CSE	4	-	3
Principles of water quality management.	CE	4	-	3
Remote Sensing and GIS (other than CE).	CE	4	-	3



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Open Elective – II	Department Offering the Subject	No. of periods per week		No. of Credits
		L	T	
Subject Title				C
Nanotechnology	ME	4	-	3
Work Study	ME	4	-	3
Fundamentals of Electrical Energy(Other than EEE)	EEE	4	-	3
Linear Control Theory (Other than EEE & ECE)	EEE	4	-	3
Introduction to Microprocessors and Micro Controllers (Other than ECE & EEE)	ECE	4	-	3
Consumer Electronics	ECE	4	-	3
Internet of Things (IOT) (Other than CSE)	CSE	4	-	3
Web Technologies (Other than CSE)	CSE	4	-	3
Cloud Computing (Other than ECE)	CSE	4	-	3
OOPS through JAVA (Other than CSE & ECE)	CSE	4	-	3
Disaster Management	CE	4	-	3
Building Services (Other than CE).	CE	4	-	3



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Open Elective – III	Department Offering the Subject	No. of periods per week		No. of Credits
		L	T	
Subject Title				C
Operations Research (Other Than ME)	ME	4	-	3
Robotics	ME	4	-	3
Energy Audit, Conservation & Management (Other than EEE)	EEE	4	-	3
Non-Conventional Energy Resources (Other than EEE)	EEE	4	-	3
Introduction to embedded systems (Other than ECE)	ECE	4	-	3
Global Positioning System	ECE	4	-	3
Computer Networks (Other than CSE & ECE)	CSE	4	-	3
Web Animation and Interactivity Using Flash	CSE	4	-	3
Web Services	CSE	4	-	3
Water shed Management.	CE	4	-	3
Solid and Hazardous waste management (Other than CE).	CE	4	-	3




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R20 COURSE STRUCTURE

I B.TECH - I SEMESTER

S.No	Subject Code	SUBJECT	Cat. Code	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	L	T	P	CREDITS
1	R20CC1101	Technical and Communicative English -I	HS	30	70	100	3	0	0	3
2	R20CC1102	Linear Algebra and Calculus	BS	30	70	100	2	1	0	3
3	R20CC1104	Applied Physics	BS	30	70	100	3	0	0	3
4	R20CC1105	Problem Solving Using C	ES	30	70	100	3	0	0	3
5	R20CS1108	LINUX Programming Lab	BS	30	70	100	0	1	4	3
6	R20CC11L1	Soft Skills and Communication Skills Lab	HS	15	35	50	0	0	3	1.5
7	R20CC11L2	Problem Solving Using C Lab	ES	15	35	50	0	0	3	1.5
8	R20CC11L4	Applied Physics Lab	BS	15	35	50	0	0	3	1.5
TOTAL										19.5




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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

I B.TECH – II SEMESTER

S.No.	Subject Code	SUBJECT	Cat. Code	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	L	T	P	CREDITS
1	R20CC1202	Numerical Methods and Statistics	BS	30	70	100	2	1	0	3
2	R20CC1204	Engineering Chemistry	BS	30	70	100	3	0	0	3
3	R20CC1206	Problem Solving using Python	ES	30	70	100	3	0	0	3
4	R20CC1208	Electronic Devices and Logic Design	ES	30	70	100	3	0	0	3
5	R20CC12L1	Problem Solving using Python Lab	ES	15	35	50	0	0	3	1.5
6	R20CC12L2	Engineering Chemistry Lab	BS	15	35	50	0	0	3	1.5
7	R20CC12L3	R Programming Lab	ES	15	35	50	0	0	3	1.5
8	R20CC12L10	CSE Workshop	ES	30	70	100	0	0	6	3
9	R20CCMC1	Environmental Studies	MC	-	-	-	2	0	0	0
TOTAL										19.5




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II B.TECH. - I SEMESTER

S.No	Subject Code	SUBJECT	Cat. Code	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	L	T	P	CREDITS
1	19BCC3TH01	Business Management Concept for Engineers	HS	40	60	100	3	-	-	3
2	19BCI3TH02	Front End Web Technologies	ES	40	60	100	3	-	-	3
3	19BCI3TH03	OOPs Through Java	PC	40	60	100	2	1	-	3
4	19BCI3TH04	Mathematical Foundations of Computer Science	BS	40	60	100	3	-	-	3
5	19BCI3TH05	Data Structures	PC	40	60	100	3	-	-	3
6	19BCI3TH06	Computer Organization	PC	40	60	100	3	-	-	3
7	19BCI3LB01	Data Structures Lab	PC	20	30	50	-	-	3	1.5
8	19BCI3LB02	Front End Web Technologies Lab	ES	20	30	50	-	-	3	1.5
9	19BCI3LB03	Java Programming Lab	PC	20	30	50	-	-	3	1.5
10	19BCCMC02	Community Service	MC	-	-	-	-	-	-	0
TOTAL										22.5



II B.TECH. – II SEMESTER

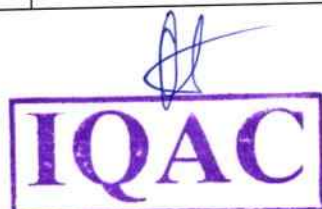
S.No	Subject Code	SUBJECT	Cat. Code	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	L	T	P	CREDITS
1	19BCI4TH01	Database Management Systems	PC	40	60	100	2	1	-	3
2	19BCI4TH02	Formal Languages and Automata Theory	PC	40	60	100	3	-	-	3
3	19BCS4TH03	Design and Analysis of Algorithms	PC	40	60	100	3	-	-	3
4	19BCS4TH04	Software Engineering	PC	40	60	100	3	-	-	3
5	Open Elective - I		OE	40	60	100	3	-	-	3
6	19BCS4LB03	Mobile Applications Development Lab	PC	20	30	50	-	-	3	1.5
7	19BCC4LB01	English Communication Skills Lab - II	HS	20	30	50	-	-	3	1.5
8	19BCI4LB02	Data Base Management Systems Lab	PC	20	30	50	-	-	3	1.5
9	19BCC4MC02	QAR	MC	-	-	-	3	-	-	0
TOTAL										19.5



List of open Electives offered by all Departments

OPEN ELECTIVE-I

S.No.	Open Elective-I Subject Title	Department Offering the Subject	Sub Code	No.of periods per week			No.of Credits
				L	T	P	C
1	Public Health Engineering	CE	19BCC4OE01	3	0	0	3
2	Geographical Information Systems	CE	19BCC4OE02	3	0	0	3
3	Micro Electro Mechanical System	EEE	19BCC4OE03	3	0	0	3
4	Energy Audit Conservation and Management	EEE	19BCC4OE04	3	0	0	3
5	RPT &3D Printing (Other than ME)	ME	19BCC4OE05	3	0	0	3
6	Operations Research	ME	19BCC4OE06	3	0	0	3
7	Principles of Signals, Systems & Communications (Other than ECE)	ECE	19BCC4OE07	3	0	0	3
8	Medical Electronics	ECE	19BCC4OE08	3	0	0	3
9	DBMS (Other Than CSE)	CSE	19BCC4OE09	3	0	0	3
10	Web Development Using Mean Stack Tech	CSE	19BCC4OE10	3	0	0	3
11	Front End UI and Frame Work	IT	19BCC4OE11	3	0	0	3
12	Front End Web Technologies	IT	19BCC4OE12	3	0	0	3
13	Financial Institutions, Markets and Services	MBA	19BCC4OE13	3	0	0	3
14	Human Resource Practices	MBA	19BCC4OE14	3	0	0	3



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III B.Tech – I SEMESTER COURSE STRUCTURE:

S. NO	SUBJECT	Cat. Code	L	T	P	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	CREDITS
1	Design and Analysis of Algorithms	PC	3	1	-	40	60	100	3
2	OOAD through UML	PC	4	-	-	40	60	100	3
3	Compiler Design	PC	4	-	-	40	60	100	3
4	Computer Networks	PC	3	1	-	40	60	100	3
5	Professional Elective – I 1. Microprocessors and Multicore systems 2. Distributed Data Bases 3. Software Requirements & Estimation 4. Network Management Systems	PE	4	-	-	40	60	100	3
6	Operating Systems & Compiler Design Lab	PC	-	-	3	25	50	75	2
7	UML Lab	PC	-	-	3	25	50	75	2
8	Network & Unix Programming Lab	ES	-	-	3	25	50	75	2
9	Mini Project – I	PW	-	-	-	25	50	75	2
10	Quantitative Aptitude and Reasoning - II	MC	3	-	-	-	-	-	-
	Total		21	2	9	300	500	800	23



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III B.Tech – II SEMESTER COURSE STRUCTURE:

S. NO.	SUBJECT	Cat. Code	L	T	P	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	CREDITS
1	Cryptography and Network Security	PC	4	-	-	40	60	100	3
2	Data Warehousing and Data Mining	PC	4	-	-	40	60	100	3
3	Advanced Java and Web Technologies	PC	4	-	-	40	60	100	3
	Professional Elective – II:								
	1. Advanced Computer Architecture								
	2. E-Commerce								
	3. Software Development Methodology								
4	4. Wireless Networks & Mobile Computing	PE	4	-	-	40	60	100	3
	5. Dot Net Technologies								
	Open Elective – I: (See the List of Open Electives)								
5		OE	4	-	-	40	60	100	3
6	Free Open Source Software (FOSS) Python Lab	PC	-	-	3	25	50	75	2
7	Advanced Java and Web Technologies Lab	PC	-	-	3	25	50	75	2
8	Data Mining Lab	PC	-	-	3	25	50	75	2
9	Mini Project- II	PW	-	-	-	25	50	75	2
10	Advanced Communication Skills	MC	3	-	-	-	-	-	-
	Total		22	-	9	300	500	800	23



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IV B.Tech – I SEMESTER COURSE STRUCTURE:

S. NO.	SUBJECT	Cat. Code	L	T	P	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	CREDITS
1	Internet of Things	PC	4	-	-	40	60	100	3
2	Big Data Analytics	PC	4	-	-	40	60	100	3
3	Professional Elective – III:								
	1. Distributed Operating Systems								
	2. Business Intelligence								
	3. Software Testing Methodology	PE	4	-	-	40	60	100	3
4	4. High Speed Networks								
	Professional Elective – IV:								
	1. High Performance Computing								
	2. Machine Learning								
	3. Software Process and Project Management	PE	4	-	-	40	60	100	3
4. Mobile Ad-hoc and Sensor Networks									
5	5. Programming with Ruby								
5	Open Elective – II (See the List of Open Electives)	OE	4	-		40	60	100	3
6	Mobile Application Development Lab	PC	-	-	3	25	50	75	2
7	Professional Skill based Lab CCNA- I / Oracle DBA / SQL DBA	PC	-	-	3	25	50	75	2
8	IOT Lab	PC	-	-	3	25	50	75	2
9	Big Data Analytics Lab	PC	-	-	3	25	50	75	2
10	MOOCS	MC	-	-	-	-	-	-	-
	Total		20	-	12	300	500	800	23



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IV B.Tech – II SEMESTER COURSE STRUCTURE:

S. NO.	SUBJECT	Cat. Code	L	T	P	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	CREDITS
1	Professional Elective – V:								
	1. Service Oriented Architecture								
	2. Pattern Recognition								
	3. Software Quality Assurance & Testing	PE	4	-	-	40	60	100	3
	4. Next Generation Networks								
5. Artificial Intelligence									
2	Open Elective – III (See the List of Open Electives)	OE	4	-	-	40	60	100	3
3	Practical Training / Internship	PW	-	-	-	40	60	100	3
4	Major Project	PW	-	-	-	60	140	200	10
	Total		8	-	-	180	320	500	19



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LIST OF OPEN ELECTIVES

Open Elective – I Subject Title	Department Offering the Subject	No. of periods per week		No. of Credits
		L	T	
Elements of Mechanical Engineering (Other than ME)	ME	4	-	3
Material Science (Other than ME)	ME	4	-	3
Basic Electrical and Electronics Engineering (Other than EEE, ECE & ME)	EEE	4	-	3
Industrial Electronics (Other than EEE)	EEE	4	-	3
Principles of Signals, system & Communications (Other than ECE)	ECE	4	-	3
Automotive Electronics	ECE	4	-	3
Medical Electronics	ECE	4	-	3
Image Processing Algorithms and Analysis (Other than ECE)	ECE	4	-	3
Database Management Systems (Other than CSE & ECE)	CSE	4	-	3
Front End UI & Frame Work Tools (Other than CSE)	CSE	4	-	3
Principles of water quality management.	CE	4	-	3
Remote Sensing and GIS (other than CE).	CE	4	-	3




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Open Elective – II	Department Offering the Subject	No. of periods per week		No. of Credits
		L	T	
Subject Title				
Nanotechnology	ME	4	-	3
Work Study	ME	4	-	3
Fundamentals of Electrical Energy(Other than EEE)	EEE	4	-	3
Linear Control Theory (Other than EEE & ECE)	EEE	4	-	3
Introduction to Microprocessors and Micro Controllers (Other than ECE & EEE)	ECE	4	-	3
Consumer Electronics	ECE	4	-	3
Internet of Things (IOT) (Other than CSE)	CSE	4	-	3
Web Technologies (Other than CSE)	CSE	4	-	3
Cloud Computing (Other than ECE)	CSE	4	-	3
OOPS through JAVA (Other than CSE & ECE)	CSE	4	-	3
Disaster Management	CE	4	-	3
Building Services (Other than CE).	CE	4	-	3



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Open Elective – III	Department Offering the Subject	No. of periods per week		No. of Credits
		L	T	
Subject Title				
Operations Research (Other Than ME)	ME	4	-	3
Robotics	ME	4	-	3
Energy Audit, Conservation & Management (Other than EEE)	EEE	4	-	3
Non-Conventional Energy Resources (Other than EEE)	EEE	4	-	3
Introduction to embedded systems (Other than ECE)	ECE	4	-	3
Global Positioning System	ECE	4	-	3
Computer Networks (Other than CSE & ECE)	CSE	4	-	3
Web Animation and Interactivity Using Flash	CSE	4	-	3
Web Services	CSE	4	-	3
Water shed Management.	CE	4	-	3
Solid and Hazardous waste management (Other than CE).	CE	4	-	3



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R20 COURSE STRUCTURE

I B.TECH - I SEMESTER

S.No	SUBJECT	Cat. Code	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	L	T	P	CREDITS
1	Linear Algebra and Calculus	BS	30	70	100	2	1	0	3
2	Engineering Physics	BS	30	70	100	3	0	0	3
3	Technical and Communicative English -I	PC	30	70	100	3	0	0	3
4	CSE Workshop	ES	30	70	100	1	0	4	3
5	Problem Solving Using C	ES	30	70	100	3	0	0	3
6	Soft Skills and Communication Skills Lab	HS	15	35	50	0	0	3	1.5
7	Engineering Physics Lab	BS	15	35	50	0	0	3	1.5
8	Problem Solving Using C Lab	PC	15	35	50	0	0	3	1.5
Total Credits									19.5

Department of INFORMATION TECHNOLOGY




 Principal
 NARASARAOPETA ENGINEERING COLLEGE
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 NARASARAOPET - 522 601,
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I B.TECH – II SEMESTER

S.No	SUBJECT	Cat. Code	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	L	T	P	CREDITS
1	Numerical Methods and Statistics	BS	30	70	100	2	1		3
2	Engineering Chemistry	BS	30	70	100	3	0	0	3
3	Problem Solving Using Python	ES	30	70	100	3	0	0	3
4	Electronic Devices and Logic Design	ES	30	70	100	3	0	0	3
5	LINUX Programming	ES	30	70	100	1	0	4	3
6	Problem Solving Using Python Lab	ES	15	35	50	0	0	3	1.5
7	Engineering Chemistry Lab	BS	15	35	50	0	0	3	1.5
8	R Programming Lab	PC	15	35	50	0	0	3	1.5
9	Environmental Studies	MC	-	-	-	2	0	0	0
Total									19.5



Department of INFORMATION TECHNOLOGY


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II B.TECH. – I SEMESTER

S.No	Subject Code	SUBJECT	Cat. Code	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	L	T	P	CREDITS
1	19BCC3TH01	Business Management Concept for Engineers	HS	40	60	100	3	-	-	3
2	19BCI3TH02	Front End Web Technologies	ES	40	60	100	3	-	-	3
3	19BCI3TH03	OOPs Through Java	PC	40	60	100	2	1	-	3
4	19BCI3TH04	Mathematical Foundations of Computer Science	BS	40	60	100	3	-	-	3
5	19BCI3TH05	Data Structures	PC	40	60	100	3	-	-	3
6	19BCI3TH06	Computer Organization	PC	40	60	100	3	-	-	3
7	19BCI3LB01	Data Structures Lab	PC	20	30	50	-	-	3	1.5
8	19BCI3LB02	Front End Web Technologies Lab	ES	20	30	50	-	-	3	1.5
9	19BCI3LB03	Java Programming Lab	PC	20	30	50	-	-	3	1.5
10	19BCCMC02	Community Service	MC	-	-	-	-	-	-	0
TOTAL										22.5




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DEPARTMENT OF INFORMATION TECHNOLOGY - (R19)

II B.TECH. - II SEMESTER

S.No	Subject Code	SUBJECT	Cat. Code	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	L	T	P	CREDITS
1	19BCI4TH01	Database Management Systems	PC	40	60	100	2	1	-	3
2	19BCI4TH02	Formal Languages and Automata Theory	PC	40	60	100	3	-	-	3
3	19BIT4TH05	Computer Networks	PC	40	60	100	3	-	-	3
4	19BIT4TH06	Internet of Things	ES	40	60	100	3	-	-	3
5	Open Elective - I		OE	40	60	100	3	-	-	3
6	19BCC4LB01	English Communication Skills Lab - II	HS	20	30	50	-	-	3	1.5
7	19BCI4LB02	Data Base Management Systems Lab	PC	20	30	50	-	-	3	1.5
8	19BIT4LB04	IoT Lab	ES	20	30	50	-	-	3	1.5
9	19BCCMC01	QAR	MC	-	-	-	3	-	-	0
TOTAL										19.5




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List of open Electives offered by all Departments

OPEN ELECTIVE-I

S.No.	Open Elective-I Subject Title	Department Offering the Subject	Sub Code	No. of periods per week			No. of Credits
				L	T	P	C
1	Public Health Engineering	CE	19BCC4OE01	3	0	0	3
2	Geographical Information Systems	CE	19BCC4OE02	3	0	0	3
3	Micro Electro Mechanical System	EEE	19BCC4OE03	3	0	0	3
4	Energy Audit Conservation and Management	EEE	19BCC4OE04	3	0	0	3
5	RPT & 3D Printing (Other than ME)	ME	19BCC4OE05	3	0	0	3
6	Operations Research	ME	19BCC4OE06	3	0	0	3
7	Principles of Signals, Systems & Communications (Other than ECE)	ECE	19BCC4OE07	3	0	0	3
8	Medical Electronics	ECE	19BCC4OE08	3	0	0	3
9	DBMS (Other Than CSE)	CSE	19BCC4OE09	3	0	0	3
10	Web Development Using Mean Stack Tech	CSE	19BCC4OE10	3	0	0	3
11	Front End UI and Frame Work	IT	19BCC4OE11	3	0	0	3
12	Front End Web Technologies	IT	19BCC4OE12	3	0	0	3
13	Financial Institutions, Markets and Services	MBA	19BCC4OE13	3	0	0	3
14	Human Resource Practices	MBA	19BCC4OE14	3	0	0	3



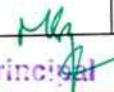
DEPARTMENT OF CSE (ARTIFICIAL INTELLIGENCE)

R20 COURSE STRUCTURE

I B.TECH - I SEMESTER

S.No	Subject Code	SUBJECT	Cat. Code	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	L	T	P	CREDITS
1	R20CC1102	Matrix Algebra and Calculus	BS	30	70	100	2	1	0	3
2	R20EC1205	Applied Physics	BS	30	70	100	3	0	0	3
3	R20CC1101	Technical and Communicative English -I	HS	30	70	100	3	0	0	3
4	R20CC1105	Problem Solving Using C	ES	30	70	100	3	0	0	3
5	R20CC1210	CSE Workshop	ES	30	70	100	0	0	6	3
6	R20CC11L1	Soft Skills and Communication Skills Lab	HS	15	35	50	0	0	3	1.5
7	R20CC12L10	Applied Physics Lab	BS	15	35	50	0	0	3	1.5
8	R20CC11L1	Problem Solving Using C Lab	ES	15	35	50	0	0	3	1.5
TOTAL										19.5


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DEPARTMENT OF CSE (ARTIFICIAL INTELLIGENCE)

I B.TECH – II SEMESTER

S.No.	Subject Code	SUBJECT	Cat. Code	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	L	T	P	CREDITS
1	R20CC1202	Numerical Methods and Statistics	BS	30	70	100	2	1	0	3
2	R20CC1204	Engineering Chemistry	BS	30	70	100	3	0	0	3
3	R20CC1106	Problem Solving Using Python	ES	30	70	100	3	0	0	3
4	R20CC1208	Electronic Devices and Logic Design	ES	30	70	100	3	0	0	3
5	R20CC1108	LINUX Programming Lab	BS	30	70	100	0	0	6	3
6	R20CC11L3	Problem Solving Using Python Lab	ES	15	35	50	0	0	3	1.5
7	R20CC11L5	Engineering Chemistry Lab	BS	15	35	50	0	0	3	1.5
8	R20CC12L3	R Programming Lab	ES	15	35	50	0	0	3	1.5
9	R20CCMC1	Environmental Studies	MC	-	-	-	2	0	0	0
TOTAL										19.5



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DEPARTMENT OF MCA

I SEMESTER

S. No.	Course Code	Course Name	Cat	L	T	P	Credits
1	R20MCA101	C Programming and Data Structures	PC	3	1	0	4
2	R20MCA102	Computer Organization	PC	3	0	0	3
3	R20MCA103	Database Management Systems	PC	3	0	0	3
4	R20MCA104	Operating Systems	PC	3	0	0	3
5	R20MCA105	Mathematical and Statistical Foundations	BS&H	3	0	0	3
6	R20MCA1L1	Data Base Management Systems Lab	PC	0	0	4	2
7	R20MCA1L2	C Programming and Data Structures Lab	PC	0	0	4	2
8	R20MCA1L3	Operating Systems and Linux Lab	PC	0	0	4	2
Total				15	1	12	22




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DEPARTMENT OF MCA

II SEMESTER

S. No.	Course Code	Course Name	Cat	L	T	P	Credits
1	R20MCA201	Computer Networks	PC	3	0	0	3
2	R20MCA202	Object oriented Programming using JAVA	PC	3	0	0	3
3	R20MCA203	Software Engineering	PC	3	0	0	3
4	R20MCA204	Design and Analysis of Algorithm	PC	3	0	0	3
5	Program Elective-1						
	R20MCA205	1. Artificial Intelligence					
	R20MCA206	2. Advanced Unix Programming					
	R20MCA207	3. Data Warehousing and Data mining	PC / PE	3	0	0	3
	R20MCA2MC	4. MOOCs-1 (NPTEL/SWAYAM/COURSERA) Any recommended course					
6	R20MCA2L1	Object Oriented Programming using JAVA Lab	PC	0	0	4	2
7	R20MCA2L2	Statistical Programming with R Lab	PC	0	0	4	2
8	R20MCA2L3	Employability Skills Lab	BS&H	0	0	4	1
		Total		15	0	12	20




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II YEAR III SEMESTER										
S.No	Course Code	Courses	Cat. Code	Int	Ext	Tot	L	T	P	C
1	19MCA3TH01	Software Engineering	PC	40	60	100	4	-	-	4
2	19MCA3TH02	Computer Networks	PC	40	60	100	4	-	-	4
3	19MCA3TH03	Design And Analysis of Algorithms	PC	40	60	100	3	1	-	4
4	19MCA3TH04	Web Development & Digital Marketing	PC	40	60	100	4	-	-	4
5	19MCA3TH05	Linux Programming	PC	40	60	100	4	-	-	4
6	19MCA3MC01	Community Services(CS)	MC	-	-	-	-	-	-	-
7	19MCA3LB01	Web Development & Digital Marketing Lab	PC	40	60	100	-	-	4	2
8	19MCA3LB02	Linux Programming Lab	PC	40	60	100	-	-	4	2
9	19MCA3LB03	Statistical Programming with R Lab	PC	40	60	100	-	-	4	2
TOTAL				320	480	800	19	1	12	26




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II YEAR IV SEMESTER										
S.No	Course Code	Courses	Cat. Code	Int	Ext	Tot	L	T	P	C
1	19MCA4TH01	Object Oriented Analysis & Design	PC	40	60	100	4	-	-	4
2	19MCA4TH02	Network Security & Cryptography	PC	40	60	100	4	-	-	4
3	19MCA4TH03	Data Warehousing and Mining	PC	40	60	100	4	-	-	4
4	19MCA4MC01	MOOCS(Mandatory Course)	MC	-	-	-	-	-	-	-
		Professional Elective – I								
5	19MCA4PE04	Software Design Methodologies	PE	40	60	100	4	-	-	4
	19MCA4PE05	Mobile Computing								
	19MCA4PE06	Blockchain Technology								
		Professional Elective – II								
6	19MCA4PE07	Internet of Things								
	19MCA4PE08	Distributed Operating Systems	PE	40	60	100	4	-	-	4
	19MCA4PE09	Network Programming								
7	19MCA4LB01	Object Oriented Analysis & Design(UML) Lab	PC	40	60	100	-	-	4	2
8	19MCA4LB02	Data Warehousing and Mining Lab	PC	40	60	100	-	-	4	2
9	19MCA4LB03	Android App Development Lab	PC	40	60	100	-	-	4	2
TOTAL				320	480	800	20	-	12	26



R19 MBA
COURSE STRUCTURE

I MBA- I SEMESTER

S.No	Course Code	Subject	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	19MBA1TH01	Management Theory & Organizational Behaviour	4	0	-	40	60	100	4
2	19MBA1TH02	Economics for Managers	4	0	-	40	60	100	4
3	19MBA1TH03	Accounting for Managers	4	0	-	40	60	100	4
4	19MBA1TH04	Managerial Communication & Soft Skills	4	0	-	40	60	100	4
5	19MBA1TH05	Business Environment	4	0	-	40	60	100	4
6	19MBA1TH06	Quantitative Techniques for Managers	4	0	-	40	60	100	4
7	19MBA1LB01	IT for Managers-I	-	-	4	40	60	100	2
TOTAL			24	0	4	280	420	700	26

I MBA- II SEMESTER

S.No	Course Code	Subject	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	19MBA2TH01	Financial Management	4	0	-	40	60	100	4
2	19MBA2TH02	Human Resource Management	4	0	-	40	60	100	4
3	19MBA2TH03	Marketing Management	4	0	-	40	60	100	4
4	19MBA2TH04	Production and Operations Management	4	0	-	40	60	100	4
5	19MBA2TH05	Business Research Methodology	4	0	-	40	60	100	4
6	19MBA2TH06	Business Laws	4	0	-	40	60	100	4
7	19MBA2LB01	IT for Managers-II	-	-	4	40	60	100	2
8	19MBA2MP01	Mini Project	-	-	-	100	-	100	2
TOTAL			24	0	4	380	420	850	28



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Dual Electives:

The Specializations will be offered in the areas of Marketing, Finance, Human Resource Management (HRM) and Systems. The students should choose any **Two** of the specializations in the beginning of the third semester of MBA. The students cannot change specializations which are selected in the first week of third semester and the same combination should continue in the fourth semester. In each specialization the student have to choose two elective papers in third and fourth semesters. The specializations and electives will be offered subjected to a minimum of 20 students.

II MBA- III SEMESTER

S.No	Course Code	Subject	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	19MBA3TH01	Strategic Management	4	0	-	40	60	100	4
2	19MBA3TH02	Business Ethics & Corporate Governance	4	0	-	40	60	100	4
3	19MBA3TH03	Business Analytics	4	0	-	40	60	100	4
4		Elective-I (SPL-I)	4	0	-	40	60	100	4
5		Elective-II (SPL-I)	4	0	-	40	60	100	4
6		Elective-III (SPL-II)	4	0	-	40	60	100	4
7		Elective-IV (SPL-II)	4	0	-	40	60	100	4
8	19MBA3MC01	Community Services (MC)	-	-	-	-	-	-	-
TOTAL			28	0	0	280	420	700	28

II MBA- IV SEMESTER

S.No	Course Code	Subject	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	19MBA4TH01	Logistics and Supply Chain Management	4	0	-	40	60	100	4
2	19MBA4TH02	Entrepreneurship Development	4	0	-	40	60	100	4
3		Elective-V (SPL-I)	4	0	-	40	60	100	4
4		Elective-VI (SPL-I)	4	0	-	40	60	100	4
5		Elective-VII (SPL-II)	4	0	-	40	60	100	4
6		Elective-VIII (SPL-II)	4	0	-	40	60	100	4
7	19MBA4PW01	Major Project/ Comprehensive Viva-Voce	-	-	-	-	-	-	8
TOTAL			24	0	0	240	360	600	32

DEPARTMENT OF MBA

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FINANCE ELECTIVES

Sem	Course Code	Subject	L	T	P	Internal Marks	External Marks	Total Marks	Credits
III	19MBA3THF1	Investment and Portfolio Management	4	0	-	40	60	100	4
III	19MBA3THF2	Corporate Taxation	4	0	-	40	60	100	4
III	19MBA3THF3	Banking & Insurance	4	0	-	40	60	100	4
III	19MBA3THF4	Personal Financial Planning	4	0	-	40	60	100	4
IV	19MBA4THF1	Financial Risk Management & Derivatives	4	0	-	40	60	100	4
IV	19MBA4THF2	Financial Institutions & Services	4	0	-	40	60	100	4
IV	19MBA4THF3	International Financial Management	4	0	-	40	60	100	4
IV	19MBA4THF4	Strategic Investment and Financial Decisions	4	0	-	40	60	100	4

HRM ELECTIVES

Sem	Course Code	Subject	L	T	P	Internal Marks	External Marks	Total Marks	Credits
III	19MBA3THH1	Management of IR	4	0	-	40	60	100	4
III	19MBA3THH2	Compensation and Reward Management	4	0	-	40	60	100	4
III	19MBA3THH3	Performance Management	4	0	-	40	60	100	4
III	19MBA3THH4	Employee Engagement & Retention Management	4	0	-	40	60	100	4
IV	19MBA4THH1	International HRM	4	0	-	40	60	100	4
IV	19MBA4THH2	Leadership	4	0	-	40	60	100	4
IV	19MBA4THH3	Human Resource Development	4	0	-	40	60	100	4
IV	19MBA4THH4	Industrial Jurisprudence & Labour Legislations	4	0	-	40	60	100	4




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MARKETING ELECTIVES

Sem	Course Code	Subject	L	T	P	Internal Marks	External Marks	Total Marks	Credits
III	19MBA3THM1	Customer Relationship Management & CB	4	0	-	40	60	100	4
III	19MBA3THM2	Event Management	4	0	-	40	60	100	4
III	19MBA3THM3	Retail Marketing	4	0	-	40	60	100	4
III	19MBA3THM4	Rural Marketing	4	0	-	40	60	100	4
IV	19MBA4THM1	Service Marketing	4	0	-	40	60	100	4
IV	19MBA4THM2	Digital Marketing	4	0	-	40	60	100	4
IV	19MBA4THM3	Brand Management	4	0	-	40	60	100	4
IV	19MBA4THM4	Advertising Management	4	0	-	40	60	100	4

SYSTEMS ELECTIVES

Sem	Course Code	Subject	L	T	P	Internal Marks	External Marks	Total Marks	Credits
III	19MBA3THS1	Decision Support System	4	0	-	40	60	100	4
III	19MBA3THS2	Data warehousing & Data Mining	4	0	-	40	60	100	4
III	19MBA3THS3	Software Project Management	4	0	-	40	60	100	4
III	19MBA3THS4	E- Business	4	0	-	40	60	100	4
IV	19MBA4THS1	Business Intelligence	4	0	-	40	60	100	4
IV	19MBA4THS2	Enterprise Resource Planning	4	0	-	40	60	100	4
IV	19MBA4THS3	Information Systems Audit	4	0	-	40	60	100	4
IV	19MBA4THS4	Cyber Laws & Security	4	0	-	40	60	100	4




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Department Of Civil Engineering

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M.TECH (STRUCTURAL ENGINEERING)

COURSE STRUCTURE

COURSE: M.TECH I SEMSTER

S.No	SubjectName	Subject Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Advanced engineering mathematics	19MSE1TH01	3	-	-	40	60	100	3
2	Theory of elasticity	19MSE1TH02	3	-	-	40	60	100	3
3	Matrix analysis of structural	19MSE1TH03	3	-	-	40	60	100	3
4	Advanced structural engineering	19MSE1TH04	3	-	-	40	60	100	3
5	Elective-I								
	Design of tall structures	19MSE1PE11							
	Advanced masonry structures	19MSE1PE12							
	Repair and rehabilitation of structures	19MSE1PE13	3	-	-	40	60	100	3
	Advanced pre-stressed concrete	19MSE1PE14							
6	Elective-II								
	Building information modeling	19MSE1PE21	3	-	-	40	60	100	3
	Advanced concrete technology	19MSE1PE22							



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	Soil dynamics and foundation engineering	19MSE1PE23							
	Plastic structural analysis	19MSE1PE24							
7	Advanced structural engineering laboratory	119MSE1LB01	-	-	6	40	60	100	3
	TOTAL		18	-	6	280	420	700	21

COURSE: M.TECH II SEMSTER

S.No	SubjectName	Subject Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Research methodology	19MSE2TH01	3	-	-	40	60	100	3
2	Finite element method	19MSE2TH02	3	-	-	40	60	100	3
3	Seismic resistant design	19MSE2TH03	3	-	-	40	60	100	3
4	Stability of structures	19MSE2TH04	3	-	-	40	60	100	3
5	Elective-III								
6	Design of industrial structures	19MSE2PE31							
	Theory of plates and shells	19MSE2PE32							
	Advanced reinforced concrete design	19MSE2PE33	3	-	-	40	60	100	3
	Experimental stress analysis	19MSE2PE34							
7	Elective-IV		3	-	-	40	60	100	3

Department Of Civil Engineering

Design of offshore structure	19MSE2PE41							
Advanced steel structures	19MSE2PE42							
Mechanics of composite materials	19MSE2PE43							
Alternative building materials	19MSE2PE44							
Advanced computer application in structural engineering-acase	19MSE2LB01	-	-	6	40	60	100	3
TOTAL		18	-	6	280	420	700	21

IIYear - III& IVSEMESTERS

S.NO	NAME OF THE SUBJECT	L	P	C
1	Seminar (19MSE3SM)	-	-	1
2	Comprehensive Viva-Voce (19MSE3CV)	-	-	2
3	Project (19MSE4PW)	-	-	35
	TOTAL	-	-	38




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R19-COURSE STRUCTURE
M.Tech-POWER & INDUSTRIAL DRIVES

I M. TECH. - I SEMESTER

S. No.	Subject	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Electrical Machine Modelling and Analysis	3	-	-	40	60	100	3
2	Distributed generation and its impacts	3	-	-	40	60	100	3
3	Analysis of Power Electronic Converters and Inverters	3	-	-	40	60	100	3
4	Flexible AC Transmission System	3	-	-	40	60	100	3
5	Elective – I							
	a. Power Semiconductor Devices and protection							
	b. Energy Management and Auditing	3	-	-	40	60	100	3
	c. Micro controller and its Applications							
6	Elective – II							
	a. Reactive Power Compensation and Management							
	b. Special Machines and Control	3	-	-	40	60	100	3
	c. Modern Control Theory							
7	Power Electronics System Simulation Lab	-	-	6	40	60	100	3
	Total	18	-	6	280	420	700	21

L: Lecture
T: Tutorial
P: Practical




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I M. TECH. - II SEMESTER

S. No.	Subject	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Control of DC and AC Drives	3	-	-	40	60	100	3
2	Soft Computing Techniques	3	-	-	40	60	100	3
3	Power Electronics in Renewable Energy Systems	3	-	-	40	60	100	3
4	Power System Deregulation	3	-	-	40	60	100	3
5	Elective – III							
	a. Smart Grid	3	-	-	40	60	100	3
	b. Power Quality							
	c. Power System Stability							
6	Elective – IV							
	a. Custom Power Devices	3	-	-	40	60	100	3
	b. Digital Control Systems							
	c. High Voltage DC Transmission							
7	Power Converters Lab	-	-	6	40	60	100	3
	Total	18	-	6	280	420	700	21

II M. TECH. – III & IV SEMESTERS

S. NO.	NAME OF THE SUBJECT	Total Marks	Credits
1	Seminar	100	1
2	Comprehensive Viva-Voce	100	2
3	Project	-	35
	Total	200	38




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**M.TECH (MACHINE DESIGN)
COURSE STRUCTURE**

COURSE: M.TECH I SEMSTER

S.No	Subject Name	Subject Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Computational Methods In Engineering	19MMD1TH01	3	-	-	40	60	100	3
2	Advanced Mechanics Of Solids	19MMD1TH02	3	-	-	40	60	100	3
3	Analysis and Synthesis of Mechanisms	19MMD1TH03	3	-	-	40	60	100	3
4	Mechanical Vibrations	19MMD1TH04	3	-	-	40	60	100	3
5	Elective –I								
	Theory Of Elasticity and Plasticity	19MMD1PE05							
	Tribology	19MMD1PE06							
	Rotor Dynamics	19MMD1PE07	3	-	-	40	60	100	3
	Design For Manufacturing and assembly	19MMD1PE08							
6	Elective –II								
	Gear Engineering	19MMD1PE09							
	Non-Destructive Evaluation	19MMD1PE10	3	-	-	40	60	100	3
	Mechatronics systems Design	19MMD1PE11							
	Material Technology	19MMD1PE12							
7	Machine Dynamics Lab	19MMD1LB01	-	-	6	40	60	100	3
	TOTAL		18	-	6	280	420	700	21




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COURSE: M.TECH II SEMSTER

S.No	Subject Name	Subject Code	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Finite Element Methods & Applications	19MMD2TH01	3	-	-	40	60	100	3
2	Geometrical Modeling	19MMD2TH02	3	-	-	40	60	100	3
3	Experimental Stress Analysis	19MMD2TH03	3	-	-	40	60	100	3
4	Fatigue, Creep and Fracture Mechanics	19MMD2TH04	3	-	-	40	60	100	3
5	Elective -III								
6	Advanced Optimization Techniques	19MMD2PE31							
	Design of Experiments	19MMD2PE32	3	-	-	40	60	100	3
	Condition Monitoring	19MMD2PE33							
	Rapid Tooling & Prototyping	19MMD2PE34							
7	Elective -IV								
	Industrial Robotics	19MMD2PE41							
	Mechanics of Composite Materials	19MMD2PE42	3	-	-	40	60	100	3
	Computer Integrated Manufacturing	19MMD2PE43							
	Research Methodology	19MMD2PE44							
	Advanced Computer Aided Design & Analysis Lab	19MMD2LB01	-	-	6	40	60	100	3
	TOTAL		18	-	6	280	420	700	21

II Year - III & IV SEMESTERS

S.NO	NAME OF THE SUBJECT	L	P	C
1	Seminar (19MMD3SM)	-	-	1
2	Comprehensive Viva-Voce (19MMD3CV)	-	-	2
3	Project (19MMD4PW)	-	-	35
	TOTAL	-	-	38




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COURSE: MTECH I SEMESTER

S. No.	SUBJECT NAME	SUBJECT CODE	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Research Methodology and IPR	19MTE1TH01	3	-	-	40	60	100	3
2	Advanced Thermodynamics	19MTE1TH02	3	-	-	40	60	100	3
3	Advanced Heat & Mass Transfer	19MTE1TH03	3	-	-	40	60	100	3
4	Advanced IC Engines	19MTE1TH04	3	-	-	40	60	100	3
5	Elective -I								
	Gas Dynamics	19MTE1PE05							
	Fuels and Combustion	19MTE1PE06	3	-	-	40	60	100	3
	Measurements in Thermal Engineering	19MTE1PE07							
6	Elective -II								
	Finite Element Methods for Thermal Engineering	19MTE1PE08							
	Hydrogen and Fuel Cell Technologies	19MTE1PE09	3	-	-	40	60	100	3
	Thermal & Nuclear power plants	19MTE1PE10							
7	Advanced thermal engineering lab	19MTE1LB01	-	-	6	40	60	100	3
	TOTAL		18	-	6	280	420	675	21



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COURSE: MTECH II SEMESTER

S. No.	SUBJECT NAME	SUBJECT CODE	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Computational Fluid Dynamics	19MTE2TH01	3	-	-	40	60	100	3
2	Design of Thermal Systems	19MTE2TH02	3	-	-	40	60	100	3
	Advanced Refrigeration & Air Conditioning	19MTE2TH03	3	-	-	40	60	100	3
4	Gas Turbines and Jet Propulsion	19MTE2TH04	3	-	-	40	60	100	3
5	Elective -III								
	Energy Conservation Management	19MTE2PE31							
	Solar Energy Technology	19MTE2PE32	3	-	-	40	60	100	3
	Renewable Energy Technology	19MTE2PE33							
6	Elective -IV								
	Environmental Pollution and Management	19MTE2PE41							
	Engine Emission Control	19MTE2PE42	3	-	-	40	60	100	3
	Alternate fuels and Analysis	19MTE2PE43							
7	Computational methods lab	19MTE2LB01	-	-	6	40	60	100	3
	TOTAL		18	-	6	280	420	700	21

S.NO	NAME OF THE SUBJECT	L	P	C
1	Seminar (19MTE3SM)	-	-	1
2	Comprehensive Viva-Voce (19MTE3CV)	-	-	2
3	Project Work (19MTE4PW)	-	-	35
	TOTAL	-	-	38



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COURSE STRUCTURE & SYLLABUS
FOR

M.Tech-ECE-DIGITAL SYSTEMS AND COMPUTER ELECTRONICS (DSCE)

I M.Tech-I SEMESTER

S.No.	Name of Subject	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Digital System Design	4	-	-	40	60	100	3
2	VLSI Technology and Design	4	-	-	40	60	100	3
3	Wireless Communication and Networks	4	-	-	40	60	100	3
4	Advanced Computer Architecture	4	-	-	40	60	100	3
5	Elective I							
	i. Digital Data Communications							
	ii. Digital Design Using HDL	4	-	-	40	60	100	3
	iii. Analog and Digital IC Design							
	iv. Internet Protocols							
6	Elective II							
	i. System Modelling and Simulation							
	ii. Network Security and Cryptography	4	-	-	40	60	100	3
	iii. Image and Video Processing							
	iv. Mobile Computing Technologies							
7	v. Algorithms for VLSI Design Automation							
	Design and Simulation Laboratory	-	-	6	40	60	100	3
TOTAL		24	-	6	280	420	700	21



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I M.Tech-II SEMESTER

S.No.	Name of Subject	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	CMOS Analog and Digital IC Design	4	-	-	40	60	100	3
2	DSP Processors and Architectures	4	-	-	40	60	100	3
3	Embedded System Design	4	-	-	40	60	100	3
4	Adhoc & Wireless Sensor Networks	4	-	-	40	60	100	3
5	Elective III							
	i. System On Chip Design							
	ii. Soft Computing Techniques							
	iii. Cyber Security	4	-	-	40	60	100	3
	iv. Advanced Digital System Design							
6	Elective IV							
	i. Embedded Real Time Operating System							
	ii. High Speed Networks							
	iii. Data Communication and Networks	4	-	-	40	60	100	3
	iv. Advanced Digital Communication							
7	v. Embedded Networking							
	Embedded Systems Laboratory	-	-	6	40	60	100	3
TOTAL		24	-	6	280	420	700	21

M.Tech-III & IV SEMESTERS

S.No.	Name Of Subject	Total Marks	Credits
1	Seminar	100	1
2	Comprehensive Viva-Voce	100	2
3	Dissertation	-	35
TOTAL		200	38



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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

M.TECH COURSE STRUCTURE

DIGITAL ELECTRONICS AND COMMUNICATION SYSTEMS (DECS)

I M.TECH-I SEMESTER

S.No.	Name of Subject	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Digital System Design	4	-	-	40	60	100	3
2	Embedded Real Time Operating Systems	4	-	-	40	60	100	3
3	VLSI Technology and Design	4	-	-	40	60	100	3
4	Optical Communication Technology	4	-	-	40	60	100	3
Elective I								
5	i. Digital data communications ii. Adhoc Networks iii. System modeling and simulation iv. Design for IoT v. Image and Video Processing	4	-	-	40	60	100	3
Elective II								
6	i. Wireless communication and networks ii. Digital design using HDL iii. Radar Signal Processing iv. Adaptive Signal Processing v. Soft computing techniques	4	-	-	40	60	100	3
7	Laboratory Design and Simulation Laboratory	-	-	6	40	60	100	3
TOTAL		24	-	6	280	420	700	21



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I M.TECH-II SEMESTER

S.No.	Name of Subject	L	T	P	Internal Marks	External Marks	Total Marks	Credits
1	Coding Theory and Applications	4	-	-	40	60	100	3
2	Detection and Estimation Theory	4	-	-	40	60	100	3
3	DSP Processors and Architectures	4	-	-	40	60	100	3
4	Advanced Computer Architecture	4	-	-	40	60	100	3
Elective III								
i. CMOS Analog and Digital IC Design								
5	ii. Advanced Digital Signal Processing	4	-	-	40	60	100	3
iii. RF Circuit Design								
iv. Embedded C								
v. Advanced mobile communication								
Elective IV								
i. VLSI design automation								
6	ii. Nano technology	4	-	-	40	60	100	3
iii. Advanced digital communication								
iv. Antennas for wireless Communication								
v. Advanced Microprocessors and Microcontrollers								
7	Laboratory Advanced Communications Laboratory	-	-	6	40	60	100	3
TOTAL		24	-	6	280	420	700	21

II M.TECH-III & IV SEMESTERS

S.No.	Name of Subject	Total Marks	Credits
1	Seminar	100	1
2	Comprehensive Viva-Voce	100	2
3	Project	-	35
TOTAL		200	38

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

M. Tech (R-19) COURSE STRUCTURE

I M.Tech (R-19)- I SEMESTER

S. NO.	NAME OF THE SUBJECT	L	T	P	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	CREDITS
1	Advanced Data Structures and Algorithm Analysis	3	-	-	40	60	100	3
2	Computer Organization and Operating Systems	3	-	-	40	60	100	3
3	Database Management Systems	3	-	-	40	60	100	3
4	Mathematical Foundations of Computer Science	3	-	-	40	60	100	3
5	Computer Networks	3	-	-	40	60	100	3
6	Advanced Software Engineering	3	-	-	40	60	100	3
7	Data Structures and Database Management Systems Lab	-	-	6	40	60	100	3
	Total	18	0	6	280	420	700	21

L: Lecture

T: Tutorial

P: Practical



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I M.Tech (R-19) - II SEMESTER

S. NO.	NAME OF THE SUBJECT	L	T	P	INTERNAL MARKS	EXTERNAL MARKS	TOTAL MARKS	CREDITS
1	Block Chain Technologies	3	-	-	40	60	100	3
2	Foundations of data Science	3	-	-	40	60	100	3
3	Artificial Intelligence and Machine Learning	3	-	-	40	60	100	3
4	Service Oriented Architecture	3	-	-	40	60	100	3
5	Professional Elective - I Mobile Computing Big Data Analytics Internet of Things High Performance Computing	3	-	-	40	60	100	3
6	Professional Elective - II Cloud Computing Deep Learning Data Mining and Data warehousing Functional Programming	3	-	-	40	60	100	
7	Data Science Lab	-	-	6	40	60	100	3
	Total	18	0	6	280	420	700	21

II M. Tech (R-19) – III & IV SEMESTERS

S. NO.	NAME OF THE SUBJECT	Total Marks	Credits
1	Seminar	100	1
2	Comprehensive Viva-Voce	100	2
3	Project	-	35
	Total	200	38




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