

DEPARTMENT OF CIVIL ENGINEERING

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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
<b>COMMON CORE</b>										
1	19BCC4TH01	Complex Variables, Probability & Statistics	BS	40	60	100	3	0	0	3
<b>PROFESSIONAL CORE</b>										
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
<b>OPEN ELECTIVES</b>										
<b>Open Elective – I</b>										
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
<b>LABORATORIES</b>										
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
<b>Non-Credit Mandatory Course</b>										
9	19BCC 4MC01	Community Services (MC)	MC				2	0	0	0
<b>Total</b>										<b>19.5</b>

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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	-	-	-	-
<b>TOTAL</b>			<b>24</b>	<b>3</b>	<b>8</b>	<b>290</b>	<b>460</b>	<b>750</b>	<b>22</b>



  
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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
	<b>Professional Elective-I</b>	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	-	-	-	-	-	-
	<b>TOTAL</b>		<b>23</b>	<b>4</b>	<b>6</b>	<b>290</b>	<b>460</b>	<b>750</b>	<b>22</b>



  
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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	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	<b>Professional Elective-II</b>	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	<b>Professional Elective-III</b>	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	<b>Professional Elective-IV</b>	<b>PE</b>							
	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								
	Design And Drawing Of Hydraulic Structures								
3	<b>Professional Elective-V</b>	<b>PE</b>							
	Finite Element Analysis								
	Reinforced Earth Structures								
	Urban Transport Planning								
	Geographic Information System		3	1	-	40	60	100	3
	Water Resources Engineering								
	Environmental Impact Assessment								
4	Project Work	PRC	-	-	-	80	120	200	10
5	Practical Training/Intern Ship	PRC	-	-	-	40	60	100	03
	<b>TOTAL</b>		<b>10</b>	<b>2</b>	<b>-</b>	<b>240</b>	<b>360</b>	<b>600</b>	<b>22</b>



  
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DEPARTMENT OF CIVIL ENGINEERING

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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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DEPARTMENT OF CIVIL ENGINEERING

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 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	<b>Open Elective - I:</b> 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	-	-	-	-	-	-	-
<b>Total</b>			<b>280</b>	<b>420</b>	<b>700</b>	<b>18</b>	<b>-</b>	<b>6</b>	<b>21</b>



  
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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	<b>Open Elective - I</b>	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	-	-	-	-	-	-
<b>Total</b>			<b>20</b>	<b>3</b>	<b>9</b>	<b>300</b>	<b>500</b>	<b>800</b>	<b>22</b>



  
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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	<b>Professional Elective – I:</b>								
	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	<b>Open Elective - II</b>	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	-	-	-	-	-	-	-
<b>Total</b>			<b>25</b>	<b>2</b>	<b>6</b>	<b>290</b>	<b>460</b>	<b>750</b>	<b>22</b>



  
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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	<b>Professional Elective - II:</b>								
	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								
	<b>Professional Elective - III:</b>								
	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	<b>Open Elective - III</b>	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
<b>Total</b>			<b>23</b>	<b>1</b>	<b>6</b>	<b>290</b>	<b>460</b>	<b>750</b>	<b>22</b>



  
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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	<b>Professional Elective - IV:</b> 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	<b>Professional Elective - V:</b> 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
<b>Total</b>			<b>12</b>	<b>-</b>	<b>-</b>	<b>240</b>	<b>360</b>	<b>600</b>	<b>22</b>



  
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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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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		<b>Open Elective-I</b>	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	-	-	-
		<b>Total</b>		<b>280</b>	<b>420</b>	<b>700</b>	<b>18</b>	<b>-</b>	<b>12</b>	<b>21</b>



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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	<b>Professional Elective - I</b> 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	-	-	-	-
	<b>Total</b>		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	<b>Professional Elective - II</b> 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	<b>Professional Elective - III</b> 1.Modern Control Systems 2.VLSI Design 3.Embedded Systems 4.Power Quality	PE	3	1	-	40	60	100	3
6	<b>Professional Elective - IV</b> 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
	<b>Total</b>		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	<b>Professional Elective – V</b> 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
	<b>Total</b>		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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 Guntur (Dist.), A.P.



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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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	<b>Open Elective-1</b>		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
<b>Total</b>										<b>21</b>



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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	-	-	-	-
<b>TOTAL</b>			<b>23</b>	<b>4</b>	<b>08</b>	<b>290</b>	<b>460</b>	<b>750</b>	<b>22</b>



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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	<b>ELECTIVE-I</b>	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	-	-	-	-	-	-
	<b>TOTAL</b>		<b>24</b>	<b>3</b>	<b>6</b>	<b>290</b>	<b>460</b>	<b>750</b>	<b>22</b>



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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	<b>ELECTIVE-II</b>	PE							
	Power Plant Engineering								
	Tribology and Bearing Design								
	Advanced Tool Design		4	-	-	40	60	100	3
	Facility Layout and Material Handling								
6	<b>ELECTIVE-III</b>	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	-	-	-	-
	<b>TOTAL</b>		<b>22</b>	<b>2</b>	<b>5</b>	<b>290</b>	<b>460</b>	<b>750</b>	<b>22</b>



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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	<b>ELECTIVE-IV</b>	PE							
	Refrigeration & Air Conditioning								
	Condition Monitoring								
	Powder Metallurgy								
	Quality and Reliability Engineering		3	1	-	40	60	100	3
2	<b>ELECTIVE-V</b>	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
	<b>TOTAL</b>		<b>11</b>	<b>1</b>	<b>-</b>	<b>240</b>	<b>360</b>	<b>600</b>	<b>22</b>



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 Guntur (Dist.), A.P.

**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		L	T	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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**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	<b>Open Elective - I</b>		<b>OE</b>	<b>40</b>	<b>60</b>	<b>100</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>
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
<b>TOTAL</b>										<b>19.5</b>

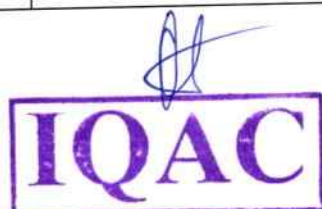




List of open Electives offered by all Departments

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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Guntur (Dist.), A.P.

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	<b>Professional Elective – I</b> 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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 (AUTONOMOUS)  
 NARASARAOPETA - 522 601.  
 Guntur (Dist.), A.P.

**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
	<b>Professional Elective – II:</b>								
	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								
	<b>Open Elective – I:</b> (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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 (AUTONOMOUS)  
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 Guntur (Dist.), A.P.



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	<b>Professional Elective – III:</b>								
	1. Distributed Operating Systems								
	2. Business Intelligence								
	3. Software Testing Methodology	PE	4	-	-	40	60	100	3
4	4. High Speed Networks								
	<b>Professional Elective – IV:</b>								
	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	<b>Open Elective – II (See the List of Open Electives)</b>	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	<b>Professional Elective – V:</b>								
	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	<b>Open Elective – III</b> (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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**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	<b>Open Elective -I</b>		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
<b>TOTAL</b>										<b>19.5</b>



  
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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

