



**sasi** INSTITUTE OF  
TECHNOLOGY &  
ENGINEERING

Department of Civil Engineering

Accredited by **NAAC** with "**A**" Grade  
Recognised by **UGC** under section 2(f) & 12(B)  
Approved by **AICTE** - NEW Delhi  
Permanently Affiliated to **JNTUK, SBTET**  
Ranked as "**A**" Grade by Govt. of A.P.

**Course structure for the Academic Year 2021-22**

**B. Tech. (Civil Engineering)  
Semester I (First Year)  
Approved Course structure**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21CMMAT1010	Engineering Mathematics - I	3	1	0	3
2	21CEPHT1020	Engineering Physics	3	0	0	3
3	21CMCHT1030	Engineering Chemistry	3	0	0	3
4	21CMCST1040	Programming for Problem solving	3	0	0	3
5	21CEMEL1050	Engineering Graphics	2	0	2	3
6	21CEPHL1060	Engineering Physics Lab	0	0	3	1.5
7	21CMCHL1070	Engineering Chemistry Lab	0	0	3	1.5
8	21CMCSL1080	Programming for Problem Solving Lab	0	0	3	1.5
9	21CMMSN1090	Constitution of India, Professional ethics and Human values	2	0	0	0
<b>Total Credits</b>						19.5

**B.Tech. (Civil Engineering)  
Semester II (First year)  
Approved Course structure**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21CMEGT2010	Technical English	3	0	0	3
2	21CMMAT2020	Engineering Mathematics - II	3	1	0	3
3	21CMEET2030	Basic Electrical Engineering	3	0	0	3
4	21CMCST2040	Python Programming	2	0	2	3
5	21ETETT2050	Engineering Mechanics	3	0	0	3
6	21CMEGL2060	English Communication Skills Lab	0	0	3	1.5
7	21CMEEL2070	Basic Electrical Engineering Lab	0	0	3	1.5
8	21CEMEL2080	Engineering Workshop Lab	0	0	3	1.5
9	21CMCHN2090	Environmental Science	2	0	0	0
<b>Total Credits</b>						19.5

**B.Tech. (Civil Engineering)  
Semester III (Second year)  
Approved Course structure**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21CEMAT3010	Engineering Mathematics - III	3	0	0	3
2	21CECET3020	Mechanics of Solids	3	0	0	3
3	21CECET3030	Fluid Mechanics	3	0	0	3
4	21CECET3040	Building Materials, Construction & Concrete Technology	3	0	0	3
5	21CECET3050	Surveying and Geomatics	3	0	0	3
6	21CECEL3060	Concrete Technology Lab	0	0	3	1.5
7	21CECEL3070	Surveying Field Work	0	0	3	1.5
8	21CECEL3080	Strength of Materials Lab	0	0	3	1.5
9	21CECES3090	Computer Aided Civil Engineering Drawing (SOC)	1	0	2	2
10	21CECEN3100	Essence of Indian Traditional Knowledge Mandatory course (AICTE suggested)	2	0	0	0
<b>Total Credits</b>						21.5

**B.Tech. (Civil Engineering)  
Semester IV (Second year)  
Approved Course structure**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21CEMAT4010	Engineering Mathematics - IV	3	0	0	3
2	21CECET4020	Structural Analysis	3	0	0	3
3	21CECET4030	Engineering Geology	3	0	0	3
4	21CECET4040	Hydraulic & Hydraulics Machinery	3	0	0	3
5	21CMMST4050	Engineering Economics & Financial Management	3	0	0	3
6	21CECEL4060	Engineering Geology Lab	0	0	3	1.5
7	21CECEL4070	Fluid Mechanics and Hydraulic Machinery Lab	0	0	3	1.5
8	21CECEL4080	Building Planning & Drawing	1	0	2	1.5
9	21CECES4090	Advanced Surveying (SOC)	1	0	2	2
<b>Total Credits</b>						21.5
		Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)	4	0	0	4

**B.Tech. (Civil Engineering)  
Semester V (Third year)**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21CECET5010	Soil Mechanics	3	0	0	3
2	21CECET5020	Transportation Engineering	3	0	0	3
3	21CECET5030	Design and Drawing of Reinforced Concrete Structures	3	0	0	3
4	21CECEP504x	Professional Elective - I	3	0	0	3
5	21CExxO505x	Open Elective course - I	2	0	2	3
6	21CECEL5060	Soil Mechanics Lab	0	0	3	1.5
7	21CECEL5070	Transportation Engineering Lab	0	0	3	1.5
8	21CMAHS5080	Soft Skills & Aptitude Builder - I	1	0	2	2
9	21CECEN5090	Disaster Management	2	0	0	0
		Mandatory course (AICTE suggested)				
10	21CECER5100	Summer Internship 2 Months (Mandatory) after second year (to be evaluated during V semester)	0	0	3	1.5
<b>Total Credits</b>						<b>21.5</b>
Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)			4	0	0	4

S.No	Professional Electives	Subject Code	Name of the subject	L	T	P	Cr
1	PEI	21CECEP504a	Advanced Concrete Technology	3	0	0	3
2		21CECEP504b	Open Channel flow	3	0	0	3
3		21CECEP504c	Advanced Structural Analysis	3	0	0	3
4		21CECEP504d	Remote Sensing and GIS	3	0	0	3

**Open Electives:**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21xxCEOxxxx	Geo-Spatial Technologies	3	0	0	3
2	21xxCEOxxxx	Industrial Waste Water Treatment	3	0	0	3
3	21xxCEOxxxx	Smart Cities	3	0	0	3
4	21xxCEOxxxx	Building Materials	3	0	0	3
5	21xxCEOxxxx	Elements of Civil Engineering	3	0	0	3
6	21xxCEOxxxx	Watershed Management	3	0	0	3
7	21xxCEOxxxx	Air, Noise Pollution and Control	3	0	0	3
8	21xxCEOxxxx	Civil - Engineering societal global impact	3	0	0	3
9	21xxCEOxxxx	Environmental Pollution & Control	3	0	0	3
10	21xxCEOxxxx	Green Buildings	3	0	0	3

**B.Tech. (Civil Engineering)  
Semester VI (Third year)**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21CECET6010	Hydrology and Water Resources Engineering	3	0	0	3
2	21CECET6020	Design and Drawing of Steel Structures	3	0	0	3
3	21CECET6030	Environmental Engineering	3	0	0	3
4	21CECEP604x	Professional Elective - II	3	0	0	3
5	21CExxO605x	Open Elective course - II	2	0	2	3
6	21CECEL6060	Environmental Engineering Lab	0	0	3	1.5
7	21CECEL6070	RS & GIS LAB	0	0	3	1.5
8	21CECEL6080	Irrigation Design and Drawing Lab	0	0	3	1.5
9	21CMAHS6090	Soft Skills & Aptitude Builder - 2	1	0	2	2
10	21CMBIN6100	Biology for Engineers	2	0	0	0
Total Credits						21.5
Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)			4	0	0	4
Industrial/Research Internship (Mandatory) 2 months during summer vacation						

S.No	Professional Electives	Subject Code	Name of the subject	L	T	P	Cr
1	PE2	21CECEP604a	Foundation Engineering	3	0	0	3
2		21CECEP604b	Offshore Structures	3	0	0	3
3		21CECEP604c	Pavement Design	3	0	0	3
4		21CECEP604d	Urban Hydrology	3	0	0	3

**Open Electives:**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21xxCEOxxxx	Geo-Spatial Technologies	3	0	0	3
2	21xxCEOxxxx	Industrial Waste Water Treatment	3	0	0	3
3	21xxCEOxxxx	Smart Cities	3	0	0	3
4	21xxCEOxxxx	Building Materials	3	0	0	3
5	21xxCEOxxxx	Elements of Civil Engineering	3	0	0	3
6	21xxCEOxxxx	Watershed Management	3	0	0	3
7	21xxCEOxxxx	Air, Noise Pollution and Control	3	0	0	3
8	21xxCEOxxxx	Civil - Engineering societal global impact	3	0	0	3
9	21xxCEOxxxx	Environmental Pollution & Control	3	0	0	3
10	21xxCEOxxxx	Green Buildings	3	0	0	3

**B.Tech. (Civil Engineering)  
Semester VII (Fourth year)**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21CECEP701x	Professional Elective - III	3	0	0	3
2	21CECEP702x	Professional Elective - IV	3	0	0	3
3	21CECEP703x	Professional Elective - V	3	0	0	3
4	21CExxO704x	Open Elective courses - III	2	0	2	3
5	21CExxO705x	Open Elective courses - IV	2	0	2	3
6	21CMMST7060	Management Science	3	0	0	3
7	21CECES7070	Software Applications in Civil Engineering Lab (SOC)	1	0	2	2
Industrial/Research Internship 2 Months (Mandatory) after third year (to be evaluated during VII semester)			0	0	6	3
<b>Total Credits</b>						23
Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)			4	0	0	4

S.No	Professional Electives	Subject Code	Name of the subject	L	T	P	Cr
1	PE3	21CECEP701a	Prestressed Concrete	3	0	0	3
2		21CECEP703b	Ground Water Development & Management	3	0	0	3
3		21CECEP703c	Soil Dynamics and Machine Foundation	3	0	0	3
4		21CECEP703d	Air and Noise Pollution and Control	3	0	0	3
1	PE4	21CECEP702a	Solid Waste & Hazardous Waste Management	3	0	0	3
2		21CECEP702b	Ground Improvement Techniques	3	0	0	3
3		21CECEP702c	Hydraulic Structures	3	0	0	3
4		21CECEP702d	Bridge Engineering	3	0	0	3
1	PE5	21CECEP703a	Construction, Specifications and Project Management	3	0	0	3
2		21CECEP703b	Railway, Airport Docks and Harbors	3	0	0	3
3		21CECEP703c	Repair and rehabilitation of structures	3	0	0	3
4		21CECEP703d	Earth and rock fill dams	3	0	0	3

**Open Electives:**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21xxCEOxxxx	Geo-Spatial Technologies	3	0	0	3
2	21xxCEOxxxx	Industrial Waste Water Treatment	3	0	0	3
3	21xxCEOxxxx	Smart Cities	3	0	0	3
4	21xxCEOxxxx	Building Materials	3	0	0	3
5	21xxCEOxxxx	Elements of Civil Engineering	3	0	0	3
6	21xxCEOxxxx	Watershed Management	3	0	0	3
7	21xxCEOxxxx	Air, Noise Pollution and Control	3	0	0	3
8	21xxCEOxxxx	Civil - Engineering societal global impact	3	0	0	3
9	21xxCEOxxxx	Environmental Pollution & Control	3	0	0	3
10	21xxCEOxxxx	Green Buildings	3	0	0	3

**B.Tech. (Civil Engineering)  
Semester VIII (Fourth year)**

<b>S.No</b>	<b>Subject Code</b>	<b>Name of the subject</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
1	21CECER8010	Project work, seminar and internship in industry	0	0	24	12
Total Credits						12

**Humanities and Social Sciences courses:**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21CMEGT2010	Technical English	3	0	0	3
2	21CMMST4050	Engineering Economics & Financial Management	3	0	0	3
3	21CEHMS7060	Management Science	3	0	0	3
4	21CMEGL2060	English Communication Skills Lab	3	0	0	1.5
Total						10.5

**Basic Sciences courses and Labs**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21CMMAT1010	Engineering Mathematics - I	3	0	0	3
2	21CEPHT1020	Engineering Physics	3	0	0	3
3	21CMCHT1030	Engineering Chemistry	3	0	0	3
4	21CMMAT2020	Engineering Mathematics - II	3	0	0	3
5	21CEMAT3010	Engineering Mathematics - III	3	0	0	3
6	21CEMAT4020	Engineering Mathematics - IV	3	0	0	3
7	21CEPHL1060	Engineering Physics Lab	0	0	3	1.5
8	21CMCHL1070	Engineering Chemistry Lab	0	0	3	1.5
Total						21

**Engineering Sciences courses and Labs**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21CMCST1040	Programming for Problem solving	3	0	0	3
2	21CEMEL1050	Engineering Graphics	3	0	0	3
3	21CMEET2030	Basic Electrical Engineering	3	0	0	3
4	21CMCST2040	Python Programming	3	0	0	3
5	21ETETT2050	Engineering Mechanics	3	0	0	3
6	21CECET4030	Engineering Geology	3	0	0	3
7	21CMCSL1080	Programming for Problem Solving Lab	0	0	3	1.5
8	21CMEEL2070	Basic Electrical Engineering Lab	0	0	3	1.5
9	21CEMEL2080	Engineering Workshop Lab	0	0	3	1.5
10	21CECEL4060	Engineering Geology Lab	0	0	3	1.5
Total						24

**Professional Core courses and Labs**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21CECET3020	Mechanics of Solids	3	0	0	3
2	21CECET3030	Fluid Mechanics	3	0	0	3
3	21CECET3040	Building Materials & Concrete Technology	3	0	0	3
4	21CECET3050	Surveying and Geomatics	3	0	0	3
5	21CECET4020	Structural Analysis	3	0	0	3
6	21CECET4040	Hydraulic & Hydraulics Machinery	3	0	0	3
7	21CECET5010	Geotechnical Engineering	3	0	0	3
8	21CECET5020	Transportation Engineering	3	0	0	3

9	21CECET5030	Design and Drawing of Reinforced Concrete Structures	3	0	0	3
10	21CECET6010	Hydrology and Water Resources Engineering	3	0	0	3
11	21CECET6020	Design and Drawing of Steel Structures	3	0	0	3
12	21CECET6030	Environmental Engineering	3	0	0	3
13	21CECEL3060	Concrete Technology Lab	0	0	3	1.5
14	21CECEL3070	Surveying Field Work	0	0	3	1.5
15	21CECEL3080	Strength of Materials Lab	0	0	3	1.5
16	21CECEL4070	Fluid Mechanics and Hydraulic Machinery Lab	0	0	3	1.5
17	21CECEL4080	Building Planning & Drawing	0	0	3	1.5
18	21CECEL5060	Geotechnical Engineering Lab	0	0	3	1.5
19	21CECEL5070	Transportation Engineering LAB	0	0	3	1.5
20	21CECEL6060	Environmental Engineering Lab	0	0	3	1.5
21	21CECEL6070	RS & GIS LAB	0	0	3	1.5
22	21CECEL6080	Irrigation Engineering Drawing Lab				1.5
<b>Total Credits</b>						<b>51</b>

### Professional Electives

S.No	Professional Electives	Subject Code	Name of the subject	L	T	P	Cr
1	PE1	21CECEP504a	Advanced Concrete Technology	3	0	0	3
2		21CECEP504b	Open Channel flow	3	0	0	3
3		21CECEP504c	Advanced Structural Analysis	3	0	0	3
4		21CECEP504d	Remote Sensing and GIS	3	0	0	3
1	PE2	21CECEP604a	Advanced Foundation Engineering	3	0	0	3
2		21CECEP604b	Offshore Structures	3	0	0	3
3		21CECEP604c	Advanced Transportation Engineering	3	0	0	3
4		21CECEP604d	Construction, Specifications and Project Management	3	0	0	3
1	PE3	21CECEP701a	Prestressed Concrete	3	0	0	3
2		21CECEP703b	Ground Water Development	3	0	0	3
3		21CECEP703c	Ground Improvement Techniques	3	0	0	3
4		21CECEP703d	Air and Noise Pollution and Control	3	0	0	3
1	PE4	21CECEP702a	Solid Waste & Hazardous Waste Management	3	0	0	3
2		21CECEP702b	Soil dynamics and machine foundation	3	0	0	3
3		21CECEP702c	Hydraulic Structures	3	0	0	3
4		21CECEP702d	Bridge Engineering	3	0	0	3
1	PE5	21CECEP703a	Urban Hydrology	3	0	0	3
2		21CECEP703b	Railway, Airport Docks and Harbors	3	0	0	3
3		21CECEP703c	Repair and rehabilitation of structures	3	0	0	3
4		21CECEP703d	Earth and rock fill dams	3	0	0	3
<b>Total Credits</b>							<b>15</b>

### Honors

S.No	Honors	Subject Code	Name of the subject	L	T	P	Cr
1	POOL I		Finite Element Methods	4	0	0	4
2			Earthquake Resistant Design of Structures	4	0	0	4
3			Advanced Structural Design	4	0	0	4
4			Bridge engineering	4	0	0	4
1	POOL 2		Rock Mechanics	4	0	0	4
2			Foundation Engineering	4	0	0	4
3			Advanced Foundation Engineering	4	0	0	4
4			Earth and Rock Fill Dams	4	0	0	4
1	POOL 3		Highway Engineering	4	0	0	4
2			Pavement Analysis design	4	0	0	4
3			Intelligent transport systems	4	0	0	4
4			Traffic Engineering and Management	4	0	0	4
1	POOL 4		Environmental Laws and Policy	4	0	0	4
2			Environmental Change and sustainable development	4	0	0	4
3			Physico-Chemical Processes for Water and Wastewater Treatment	4	0	0	4
4			Environmental Impact Assessment and Management	4	0	0	4

### Open Electives:

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21xxCEOxxxx	Geo-Spatial Technologies	3	0	0	3
2	21xxCEOxxxx	Industrial Waste Water Treatment	3	0	0	3
3	21xxCEOxxxx	Smart Cities	3	0	0	3
4	21xxCEOxxxx	Building Materials	3	0	0	3
5	21xxCEOxxxx	Elements of Civil Engineering	3	0	0	3
6	21xxCEOxxxx	Watershed Management	3	0	0	3
7	21xxCEOxxxx	Air, Noise Pollution And Control	3	0	0	3
8	21xxCEOxxxx	Civil - Engineering societal global impact	3	0	0	3
9	21xxCEOxxxx	Environmental Pollution & Control	3	0	0	3
10	21xxCEOxxxx	Green Buildings	3	0	0	3
Total credits						12

**Skill oriented course:**

S.No	Subject Code	Title of the certificate course	L	T	P	Cr
1	21CECES3090	Computer Aided Civil Engineering Drawing	1	0	2	2
2	21CECES4090	Advanced Surveying (SOC)	1	0	2	2
3	21CMAHS5080	Soft Skills & Aptitude Builder - 1	1	0	2	2
4	21CMAHS6090	Soft Skills & Aptitude Builder - 2	1	0	2	2
5	21CECES7070	Software Applications in Civil Engineering Lab (SOC)	1	0	2	2
Total credits						10

**MOOC courses**

S.No	Name of the subject	<a href="https://onlinecourses.swayam2.ac.in/nou20_cs11/preview">https://onlinecourses.swayam2.ac.in/nou20_cs11/preview</a>	L	T	P	Cr
1	Building Cost Estimation Simplified	<a href="https://nptel.ac.in/courses/105103207">https://nptel.ac.in/courses/105103207</a>	2	0	0	2
2	Advanced soil Mechanics	<a href="https://onlinecourses.nptel.ac.in/noc21_ce08/preview">https://onlinecourses.nptel.ac.in/noc21_ce08/preview</a>	2	0	0	2
3	Digital Land Surveying and Mapping (DLS&M)	<a href="https://nptel.ac.in/courses/105107181">https://nptel.ac.in/courses/105107181</a>	2	0	0	2
4	Environmental Remediation of Contaminated Sites	<a href="https://onlinecourses.nptel.ac.in/noc22_ce26/preview">https://onlinecourses.nptel.ac.in/noc22_ce26/preview</a>	2	0	0	2
5	Geographic Information Systems	<a href="https://nptel.ac.in/courses/105106052">https://nptel.ac.in/courses/105106052</a>	2	0	0	2
6	Geosynthetics and Reinforced Soil Structures	<a href="https://onlinecourses.nptel.ac.in/noc22_ce45/preview">https://onlinecourses.nptel.ac.in/noc22_ce45/preview</a>	2	0	0	2
7	Rural water resources management	<a href="https://archive.nptel.ac.in/courses/105/106/105106202/">https://archive.nptel.ac.in/courses/105/106/105106202/</a>	2	0	0	2
8	Maintenance and repair of concrete structures	<a href="https://nptel.ac.in/courses/105106053">https://nptel.ac.in/courses/105106053</a>	2	0	0	2
9	Modern construction materials	<a href="https://onlinecourses.nptel.ac.in/noc22_ce31/preview">https://onlinecourses.nptel.ac.in/noc22_ce31/preview</a>	2	0	0	2
10	Probability methods in civil engineering	<a href="https://onlinecourses.swayam2.ac.in/nou20_cs11/preview">https://onlinecourses.swayam2.ac.in/nou20_cs11/preview</a>	2	0	0	2

**Mandatory courses**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21CMCHN1090	Constitution of India, Professional ethics and Human rights	2	0	0	0
2	21CMCHN2090	Environmental Science	2	0	0	0
3	21CMCHN3090	Essence of Indian Traditional Knowledge	2	0	0	0
4	21CECEN5090	Disaster Management	2	0	0	0
5	21CMBIN6100	Biology for Engineers	2	0	0	0

## SUGGESTED COURSES FOR MINOR PROGRAM IN CE

The following are the Offline and MOOC courses offered by CE Department for the Minors program

Starting from IV semester.

S.No	Subject Code	Name of the subject	Offered Semester	L	T	P	Cr
1		Building materials	IV Semester	3/4	0	0/2	4
2		Solid Waste & Hazardous Waste Management	V Semester	3/4	0	0/2	4
3		Traffic engineering	VI Semester	3/4	0	0/2	4
4		Ground Improvement Techniques	VII Semester	3/4	0	0/2	4

### MOOC/NPTEL Courses for Minor program:

S.No	Name of the subject	Link	L	T	P	Cr
1	Digital Land Surveying and Mapping (DLS&M)	<a href="https://nptel.ac.in/courses/105107181">https://nptel.ac.in/courses/105107181</a>	2	0	0	2
2	Environmental Remediation of Contaminated Sites	<a href="https://onlinecourses.nptel.ac.in/noc22_ce26/preview">https://onlinecourses.nptel.ac.in/noc22_ce26/preview</a>	2	0	0	2
3	Geographic Information Systems	<a href="https://nptel.ac.in/courses/105106052">https://nptel.ac.in/courses/105106052</a>	2	0	0	2

S.No	Name of the subject	Link	L	T	P	Cr
1	Rural water resources management	<a href="https://archive.nptel.ac.in/courses/105/106/105106202/">https://archive.nptel.ac.in/courses/105/106/105106202/</a>	2	0	0	2
2	Modern construction materials	<a href="https://onlinecourses.nptel.ac.in/noc22_ce31/preview">https://onlinecourses.nptel.ac.in/noc22_ce31/preview</a>	2	0	0	2
3	Probability methods in civil engineering	<a href="https://onlinecourses.swyam2.ac.in/nou20_cs11/preview">https://onlinecourses.swyam2.ac.in/nou20_cs11/preview</a>	2	0	0	2

### Note:

1. Students has to study all four regular/offline minor courses starting from **IV semester** and complete by **VII semester** by taking **one course per semester**.
2. Additionally, TWO MOOC courses of minimum EIGHT-week duration a total covering of 4 credits (offered by CE Department only).
3. Students can register for any two MOOC courses and one from each pool out of three courses listed in the each pool in the above table via the NPTEL online platform from IV semester to VII semester by prior information to concerned department.

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W.G. Dist., A.P.

**B. Tech. (Civil Engineering)  
Semester I (First Year)**

S. No	Course Category	Course Code	Subjects	Hours Per Week			Credits
				L	T	P	
1	HSMC	18CMEGT1010	Technical English	3	0	0	3
2	BSC	18CMMAT1020	Engineering Mathematics-I	3	1	0	4
3	BSC	18CMCHT1030	Engineering Chemistry	3	1	0	4
4	ESC	18CMEET1040	Basic Electrical Engineering	3	1	0	4
5	HSMC	18CMEGL1050	English Communication skills lab	0	0	2	1
6	BSC	18CMCHL1060	Engineering Chemistry Lab	0	0	3	1.5
7	ESC	18CMEEL1070	Basic Electrical Engineering Lab	0	0	3	1.5
8	MC	18CMMSN1080	Constitution of India, Professional Ethics & Human Rights	3	0	0	0
<b>Total Credits</b>							<b>19</b>

**B.Tech. (Civil Engineering)  
Semester II (First Year)**

Sl. No.	Course Category	Course Code	Course Title	L	T	P	C
1.	BSC	18CMMAT2010	Engineering Mathematics-II	3	1	0	4
2.	BSC	18MEPHT2020	Engineering Physics	3	1	0	4
3.	ESC	18CMCST2030	Programming for Problem Solving	3	0	0	3
4.	ESC	18CMMEL2040	Engineering Graphics	1	0	4	3
5.	BSC	18MEPHL2050	Engineering Physics Lab	0	0	3	1.5
6.	ESC	18CMCSL2060	Programming for Problem Solving lab	0	0	4	2
7.	ESC	18CMMEL2070	Work Shop/Manufacturing Practice	0	0	3	1.5
8.	MC	18CMCHN2080	Environmental Science	3	0	0	0
<b>Total Credits</b>							<b>19</b>

**B.Tech. (Civil Engineering)  
Semester III (Second Year)**

Sl. No	Course Category	Course Code	Course Title	L	T	P	C
1.	BSC	18CEMAT3010	Engineering Mathematics - III	3	1	0	4
2.	ESC	18CMCET3020	Engineering Mechanics	3	1	0	4
3.	PCC	18CECET3030	Engineering Geology	2	0	0	2
4.	PCC	18CECET3040	Surveying & Geomatics	3	0	0	3
5.	PCC	18CECET3050	Building materials & Concrete Technology	3	0	0	3
6.	PCC	18CECEL3060	Engineering Geology Lab	0	0	3	1.5
7.	PCC	18CECEL3070	Surveying field work Lab	0	0	3	1.5
8.	PCC	18CECEL3080	Computer- aided civil Engineering Drawing Lab	0	0	3	1.5
9.	MC	18CEECN3090	Basic Electronics	3	-	-	-
<b>Total Credits</b>							<b>20.5</b>

**B.Tech. (Civil Engineering)  
Semester IV (Second Year)**

Sl. No	Course Category	Course Category	Course Title	L	T	P	C
1.	PCC	18CECET4010	Fluid Mechanics	3	0	0	3
2.	PCC	18CECET4020	Strength of Materials	3	0	0	3
3.	PCC	18CECET4030	Environmental Engineering	3	0	0	3
4.	PCC	18CECET4040	Transportation Engineering	3	0	0	3
5.	HSMC	18CMMST4050	Engineering Economics and Financial Management	3	0	0	3
6.	PCC	18CECEL4060	Strength of Materials Lab	0	0	3	1.5
7.	PCC	18CECEL4070	Environmental Engineering Lab	0	0	3	1.5
8.	PCC	18CECEL4080	Material Testing Lab	0	0	3	1.5
<b>Total Credits</b>							<b>19.5</b>

**B.Tech. (Civil Engineering)  
Semester V (Third Year)**

S.No	Course Category	Course Code	Subjects	Hours Per Week			Credits
				L	T	P	
1.	PCC	18CECET5010	Geo Technical Engineering	3	0	0	3
2.	PCC	18CECET5020	Theory of Structures -I	3	0	0	3
3.	PCC	18CECET5030	Hydraulic & Hydraulics Machinery	3	0	0	3
4.	PCC	18CECET5040	Reinforced Concrete Structures	3	0	0	3
5.	OE	18CExxO505x	Open Elective- I	3	0	0	3
6.	PE	18CECEP506x	Professional Elective -I	3	0	0	3
7.	PCC	18CECEL5070	Geo Technical Engineering Lab	0	0	3	1.5
8.	PCC	18CECEL5080	Fluid mechanics & Hydraulics Machinery Lab				1.5
9.	SOC	18CEAHS5090	Soft Skills & Aptitude Builder - 1	2	0	0	2
10	MC	18CMBIT5100	Biology for Engineers	2	0	0	0
<b>Total Credits</b>							<b>23</b>

**B.Tech. (Civil Engineering)  
Semester VI (Third Year)**

S.No	Course Category	Course Code	Subjects	Hours Per Week			Credits
				L	T	P	
1	PCC	18CECET6010	Theory of Structures -II	3	0	0	3
2	PCC	18CECET6020	Design of Steel Structures	3	0	0	3
3	OE	18CExxO603x	Open Elective- II	3	0	0	3
4	PE	18CECEP604x	Professional Elective -II	3	0	0	3
5	PE	18CECEP605x	Professional Elective- III	3	0	0	3
6	PCC	18CECEL6060	Structural Design and Drawing Lab	0	0	3	1.5
7	PCC	18CECEL6070	Software Applications in civil Engineering Lab	0	0	3	1.5
8	PCC	18CECEL6080	Surveying Field Camp	1	0	2	2
9	SOC	18CEAHS6090	Soft Skills & Aptitude Builder - 2	2	0	0	2
<b>Total Credits</b>							<b>22</b>

**B.Tech. (Civil Engineering)  
Semester VII (Fourth Year)**

S.No	Course Category	Course Code	Subjects	Hours Per Week			Credits
				L	T	P	
1	PCC	18CECET7010	Contracts, Specifications & Project Management	3	0	0	3
2	PCC	18CECET7020	Hydrology and Water Resource Engineering	3	0	0	3
3	OE	18CExxO703x	Open Elective III	3	0	0	3
4	OE	18CExxO704x	Open Elective IV	3	0	0	3
5	PE	18CECEP705x	Professional Elective IV	3	0	0	3
6	PE	18CECEP706x	Professional Elective V	3	0	0	3
7	PCC	18CECEL7070	Irrigation Engineering & Drawing Lab	0	0	4	2
8		18CECEL7080	Internship with Seminar	0	0	3	3
9	SOC	18CECES7090	STAAD.Pro	1	0	2	2
<b>Total Credits</b>							<b>25</b>

**Semester VIII (Fourth Year)**

S.No	Course Category	Course Code	Subjects	Hours Per Week			Credits
				L	T	P	
1.			Project	0	0	0	12

**Professional Elective Courses:**

Elective -I	18CECEP506a	Solid and Hazardous Waste management
	18CECEP506b	Architecture & Town Planning
	18CECEP506c	Advanced Transportation Engineering
	18CECEP506d	Sustainable construction methods for buildings
Elective -II	18CECEP605a	Transportation Economics
	18CECEP605b	Advanced Concrete Technology
	18CECEP605c	Remote Sensing & GIS Applications
	18CECEP605d	Foundation Engineering
Elective -III	18CECEP606a	Ground Improvement Techniques
	18CECEP606b	Surface water Hydrology
	18CECEP606c	Offshore Engineering
	18CECEP606d	Rural Water Supply and Onsite Sanitation Systems
Elective -IV	18CECEP705a	Advanced Structural Analysis
	18CECEP705b	Environmental Impact Assessment and Environment Management Planning
	18CECEP705c	Engineering with Geo-synthetics
	18CECEP705d	Urban Hydrology
Elective -V	18CECEP706a	Pre-Stressed Concrete
	18CECEP706b	Repairs and Rehabilitation of Structures
	18CECEP706c	Ground Water Development & Management
	18CECEP706d	Air and Noise Pollution and Control

**Open Elective Courses offered by Dept. of CE to Other Depts.**

1	18xxCEOxxxx	Civil Engineering Societal & Global Impact
2	18xxCEOxxxx	Introduction to Civil Engineering
3	18xxCEOxxxx	Disaster Management
4	18xxCEOxxxx	Environmental Pollution and Control
5	18xxCEOxxxx	Building Materials
6	18xxCEOxxxx	Green Buildings and Sustainability

*M-Rama Rao.*

**HoD**

Head of the Dept - Civil  
Sasi Institute of Technology & Engineering  
TADEPALLIGUDEM - 534 101  
W.G.Dist.,A.P.



22-23

**sasi** INSTITUTE OF  
TECHNOLOGY &  
autonomous ENGINEERING

Accredited by **NAAC** with **"A"** Grade  
Recognised by **UGC** under section 2(f) & 12(B)  
Approved by **AICTE** - NEW Delhi  
Permanently Affiliated to **JNTUK, 8BTET**  
Ranked as **"A"** Grade by Govt. of A.P.

Department of Electrical & Electronics Engineering

Course Structure for I B. Tech I Semester Under the Regulations of SITE-21							
Common for (CE, EEE, ME, ECT, CST, AI & ML) SEM -I							
S. No	Course Category	Course code	Course Title	L	T	P	C
1	BS	21CMMAT1010	Engineering Mathematics – I(Calculus and Differential Equations)	3	0	0	3
2	BS	21EEPHT1020	Engineering Physics	3	0	0	3
3	BS	21CMCHT1030	Engineering Chemistry	3	0	0	3
4	ES	21CMCST1040	Programming for Problem Solving	3	0	0	3
5	ES	21CMMEL1050	Engineering Graphics	2	0	2	3
6	BS LAB	21EEPHL1060	Engineering Physics Lab	0	0	3	1.5
7	BS LAB	21CMCHL1070	Engineering Chemistry Lab	0	0	3	1.5
8	ES LAB	21CMCSL1080	Programming for Problem Solving Lab	0	0	3	1.5
9	MC	21CMMSN1090	Constitution of India, Professional Ethics & Human Rights	2	0	0	0
<b>TOTAL</b>				<b>16</b>	<b>0</b>	<b>11</b>	<b>19.5</b>

Course Structure for I B. Tech II Semester Under the Regulations of SITE-21							
Common for (CE, EEE, ME, ECT, CST, AI & ML) SEM -II							
S. No	Course Category	Course code	Course Title	L	T	P	C
1	HS	21CMEGT2010	Technical English	3	0	0	3
2	BS	21CMMAT2020	Engineering Mathematics – II(Linear algebra, Laplace Transforms and Numerical Methods)	3	0	0	3
3	ES	21CMEET2030	Basic Electrical Engineering	3	0	0	3
4	ES	21CMCST2040	Python Programming	1	0	4	3
5	ES	21EEMET2050	Engineering Mechanics	3	0	0	3
6	HS LAB	21CMEGL2060	English Communication Skills Lab	0	0	3	1.5
7	ES LAB	21CMEEL2070	Basic Electrical Engineering Lab	0	0	3	1.5
8	ES LAB	21CMMEL2080	Engineering Workshop Lab	0	0	3	1.5
9	MC	21CMCHN2090	Environmental Science	2	0	0	0
<b>TOTAL</b>				<b>15</b>	<b>0</b>	<b>13</b>	<b>19.5</b>

Course Structure for II B. Tech I Semester Under the Regulations of SITE-21							
III SEMESTER							
S. No	Course Category	Course Code	Course Title	L	T	P	C
1	BS	21CMMAT3010	Engineering Mathematics-III(Vector Calculus and Complex Analysis)	3	0	0	3
2	PC	21EEEEET3020	Electrical Circuits Analysis	3	0	0	3
3	PC	21EEEEET3030	Analog Electronics	3	0	0	3
4	PC	21EEEEET3040	Electrical Measurements & Instrumentation	3	0	0	3
5	PC	21EEEEET3050	DC Machines & Transformers	3	0	0	3
6	PC LAB	21EEEEEL3060	Analog Electronics Lab	0	0	3	1.5
7	PC LAB	21EEEEEL3070	Electrical Circuit Analysis Lab	0	0	3	1.5
8	PC LAB	21EEEEEL3080	DC Machines & Transformers Lab	0	0	3	1.5
9	SOC	21EEEEES3090	Electrical Wiring & Installation	1	0	2	2
10	MC	21EEEEEN3100	Electromagnetic Fields	2	0	0	0
<b>TOTAL</b>				<b>18</b>	<b>0</b>	<b>11</b>	<b>21.5</b>

Course Structure for II B. Tech II Semester Under the Regulations of SITE-21							
IV SEMESTER							
S. No	Course Category	Course Code	Course Title	L	T	P	C
1	ES	21EEEEET4010	Signals & Systems	3	0	0	3
2	PC	21EEEEET4020	Digital Electronics	3	0	0	3
3	BS	21CMMAT4030	Engineering Mathematics-IV (Probability & Statistics)	3	0	0	3
4	PC	21EEEEET4040	Induction & Synchronous Machines	3	0	0	3
5	HSS	21CMMST4050	Engineering Economics And Financial Management	3	0	0	3
6	PC LAB	21EEEEEL4060	Digital Electronics Lab	0	0	3	1.5
7	PC LAB	21EEEEEL4070	Electrical Measurements & Instrumentation Lab	0	0	3	1.5
8	PC LAB	21EEEEEL4080	Induction & Synchronous Machines Lab	0	0	3	1.5
9	SOC	21EEEEES4090	Design of Electrical Circuits using Engineering software tools	1	0	2	2
<b>TOTAL</b>				<b>16</b>	<b>0</b>	<b>11</b>	<b>21.5</b>
10	H/M		Honor/Minor courses(The hours distribution can be 3-0-2 or 3-1-0)	4	0	0	4

Course Structure for III B. Tech I Semester Under the Regulations of SITE-21							
V SEMESTER							
S. No	Course Category	Course Code	Course Title	L	T	P	C
1	PC	21EEEEET5010	Power Generation, Transmission & Distribution	3	0	0	3
2	PC	21EEEEET5020	Power Electronics	3	0	0	3
3	PC	21EEEEET5030	Control Systems	3	0	0	3
4	OE	21EEXXO504X	Open Elective-I	2	0	2	3
5	PE	21EEEEEP505X	Professional Elective-I	3	0	0	3
6	PC LAB	21EEEEEL5060	Power Systems Lab	0	0	3	1.5
7	PC LAB	21EEEEEL5070	Power Electronics Lab	0	0	3	1.5
8	SAC/SC	21CMAHSx0x	Soft Skills & Aptitude Builder - 1	1	0	2	2
9	MC	21EEEEEN5090	Energy studies	2	0	0	0
10	SI	21EEEEEI5010	Summer Internship (1-2 months) after second year to evaluate in V semester	0	0	0	1.5
<b>TOTAL</b>				<b>17</b>	<b>0</b>	<b>10</b>	<b>21.5</b>
11	H/M		Honor/Minor courses(The hours distribution can be 3-0-2 or 3-1-0)	4	0	0	4

#### Professional Elective – I

S. No	Course Code	Course Title	L	T	P	C
1	21EEEEEP505A	Special Electrical Machines.	3	0	0	3
2	21EEEEEP505B	Electrical Energy conservation & Auditing.	3	0	0	3
3	21EEEEEP505C	Digital signal Processing	3	0	0	3

Course Structure for III B. Tech II Semester Under the Regulations of SITE-21							
VI SEMESR							
S. No	Course Category	Course Code	Course Title	L	T	P	C
1	PC	21EEEEET6010	Power System Analysis, Operation & Control	3	0	0	3
2	PC	21EEEEET6020	Microprocessors & Microcontrollers	3	0	0	3
3	PC	21EEEEET6030	Power Semiconductor Drives	3	0	0	3
4	PE	21EEEEEP604X	Professional Elective-II	3	0	0	3
5	OE	21EEXXO605X	Open Elective -II	2	0	2	3
6	PC	21EEEEEL6040	Microprocessors & Microcontrollers Laboratory	0	0	3	1.5
7	PC LAB	21EEEEEL6050	Control Systems Lab	0	0	3	1.5
8	PC LAB	21EEEEEL6060	Power Systems Analysis Lab	0	0	3	1.5
9	SAC/SC	21CMAHSx0x	Soft Skills & Aptitude Builder - 2	0	0	0	2
<b>TOTAL</b>				<b>14</b>	<b>0</b>	<b>11</b>	<b>21.5</b>
10	H/M		Honor/Minor courses(The hours distribution can be 3-0-2 or 3-1-0)	4	0	0	4

#### Professional Elective-II

S. No	Course Code	Course Title	L	T	P	C
1	21EEEEEP604A	Electrical Machine Modeling & Analysis	3	0	0	3
2	21EEEEEP604B	Power system Protection.	3	0	0	3
3	21EEEEEP604C	Control system design.	3	0	0	3

Course Structure for IV B. Tech I Semester Under the Regulations of SITE-21							
VII SEMESTER							
S. No	Course Category	Course Code	Course Title	L	T	P	C
1	PE	21EEEEEP701X	Professional Elective-III	3	0	0	3
2	PE	21EEEEEP702X	Professional Elective -IV	3	0	0	3
3	PE	21EEEEEP703X	Professional Elective -V	3	0	0	3
4	OE	21EEXXO704X	Open Elective -III	2	0	2	3
5	OE	21EEXXO805X	Open Elective -IV	2	0	2	3
6	H&SS	21EEEEEOX0XX	Elective	3	0	0	3
7	SAC/SC	21EEEEES7010	Design of Photovoltaic Systems	1	0	2	2
8	SI	21EEEEEI7020	Industrial/Research Internship (1-2 Months) after third year to be evaluated in VII semester	0	0	0	3
<b>TOTAL</b>				<b>17</b>	<b>0</b>	<b>6</b>	<b>23</b>
9	H/M		Honor/Minor courses(The hours distribution can be 3-0-2 or 3-1-0)	4	0	0	4

#### Professional Elective-III

S.No.	Course Code	Course Title	L	T	P	C
1	21EEEEEP701A	Switched Mode Power Converters	3	0	0	3
2	21EEEEEP701B	Electrical & Hybrid Vehicles	3	0	0	3
3	21EEEEEP701C	Artificial Intelligence Techniques	3	0	0	3

#### Professional Elective-IV

S.No.	Course Code	Course Title	L	T	P	C
1	21EEEEEP702A	Wind & Solar Energy Systems	3	0	0	3
2	21EEEEEP702B	Power Quality	3	0	0	3
3	21EEEEEP702C	Digital Control Systems	3	0	0	3

#### Professional Elective-V

S.No.	Course Code	Course Title	L	T	P	C
1	21EEEEEP703A	FACTS & HVDC Transmission Systems	3	0	0	3
2	21EEEEEP703B	Smart Grid	3	0	0	3
3	21EEEEEP703C	Optimization Techniques	3	0	0	3

Course Structure for IV B. Tech II Semester Under the Regulations of SITE-21							
VIII SEMESTER							
S.No.	Course Category	Course Code	Course Title	L	P	T	C
1	Project	21EEEEER8010	Project, Seminar and Internship in Industry (6 months)	0	14	0	12
<b>Total</b>				<b>0</b>	<b>14</b>	<b>0</b>	<b>12</b>

**Course structure for Electrical & Electronics Engineering  
Honors (for EEE Students)**

**II B. Tech II Semester:**

S. No	Subject code	Name of the Subject	L	T	P	C
1	21EEEEH410A	Electrical Wiring, Estimation and Costing	3	1	0	4
2	21EEEEH410B	SCADA Energy Management Systems	3	1	0	4
3	21EEEEH410C	Linear IC Applications	3	1	0	4
4	21EEEEH410D	Renewable Energy Systems	3	1	0	4

**III B. Tech I Semester:**

S. No	Subject code	Name of the Subject	L	T	P	C
1	21EEEEH511A	Electrical Machine Design	3	1	0	4
2	21EEEEH511B	Utilization of Electrical Energy & Traction	3	1	0	4
3	21EEEEH511C	Solar & Advanced Energy Storage System	3	1	0	4
4	21EEEEH511D	Modern Control Systems	3	1	0	4

**III B. Tech II Semester:**

S. No	Subject code	Name of the Subject	L	T	P	C
1	21EEEEH611A	Modern Power Electronics	3	1	0	4
2	21EEEEH611B	AC Drives	3	1	0	4
3	21EEEEH611C	Power Quality & Custom Power Devices	3	1	0	4
4	21EEEEH611D	High Voltage Engineering	3	1	0	4

**IV B. Tech I Semester:**

S. No	Subject code	Name of the Subject	L	T	P	C
1	21EEEEH709A	EHV AC Transmission	3	1	0	4
2	21EEEEH709B	Line Commutated & Active Rectifiers	3	1	0	4
3	21EEEEH709C	Electrical Distribution Systems	3	1	0	4
4	21EEEEH709D	Power Systems Dynamics & Stability	3	1	0	4

**Course structure for Electrical & Electronics Engineering  
Minors to other Departments**

**II B. Tech II Semester:**

S. No	Subject code	Name of the Subject	L	T	P	C
1	21XXEEM410A	Fundamental of Electrical Circuit Theory	3	1	0	4
2	21XXEEM410B	Fundamental of EMF Theory	3	1	0	4
3	21XXEEM410C	Fundamental of Control Systems	3	1	0	4

**III B. Tech I Semester:**

S. No	Subject code	Name of the Subject	L	T	P	C
1	21XXEEM511A	Fundamentals of Electrical Machines	3	1	0	4
2	21XXEEM511B	Fundamentals of Power Electronics	3	1	0	4
3	21XXEEM511C	Fundamental of Electrical Measurements & Instrumentation	3	1	0	4

**III B. Tech II Semester:**

S. No	Subject code	Name of the Subject	L	T	P	C
1	21XXEEM611A	Fundamentals of Electrical Power Generation & Economic Concepts	3	1	0	4
2	21XXEEM611B	Fundamentals of Renewable Energy Sources	3	1	0	4
3	21XXEEM611C	Fundamentals of Energy Storage Systems	3	1	0	4

**IV B. Tech I Semester:**

S. No	Subject code	Name of the Subject	L	T	P	C
1	21XXEEM709A	Fundamentals of Electrical Power Transmission & Distribution	3	1	0	4
2	21XXEEM709B	Fundamentals of Utilization of Electrical Energy	3	1	0	4
3	21XXEEM709C	Fundamentals of Electrical Safety	3	1	0	4

**I -B. Tech I- Semester Approved Course structure for the Academic Year 2018-  
2019 Common for ME/CE/EEE**

SN	Subject Code	Subject title	L	T	P	C
1	18CMEGT1010	Technical English	3	1		4
2	18CMMAT1020	Engineering Mathematics-I	3	1		4
3	18CMCHT1030	Engineering Chemistry	2			2
4	18CMEET1040	Basic Electrical Engineering	3	1		4
5	18CMEGL1050	English Communication Lab			2	1
6	18CMCHL1060	Engineering Chemistry Lab			3	1.5
7	18CMEEL1070	Basic Electrical Engineering Lab			2	1
8	18CMMSM1080	Constitution of India, Professional Ethics & Human Rights (MC)				
<b>Total</b>			<b>11</b>	<b>3</b>	<b>7</b>	<b>17.5</b>

**I B.Tech II Semester Approved Course structure for the Academic Year 2018-2019  
Common for ME/CE/EEE**

SN	Subject Code	Subject title	L	T	P	C
1	18CMMAT2010	Engineering Mathematics II	3	1		4
2	18EEPHT2020	Engineering Physics	3	1		4
3	18CMCST2030	Programming for Problem solving	3	0		3
4	18CMMEEL2040	Engineering Graphics	1		4	3
5	18EEPHT2050	Engineering Physics Lab			3	1.5
6	18CMCSL2060	Programming for Problem solving Lab			4	2
7	18CMMEEL2070	Work Shop/Manufacturing practice	1		4	3
8	18CMCHN2080	Environmental Science (MC)				
<b>Total</b>			<b>11</b>	<b>2</b>	<b>15</b>	<b>20.5</b>

**II -B. Tech EEE I- Semester Approved Course structure for the Academic Year 2019-2020**

SN	Subject Code	Subject title	L	T	P	C
1	18CMMAT3010	Engineering Mathematics III	3	1		4
2	18EEEET3020	Analog Electronics	3			3
3	18EEEET3030	Electromagnetic fields	3	1		4
4	18EEEET3040	Electrical Circuit Analysis	3	1		4
5	18EEEET3050	Electrical Machines I	3			3
6	18EEEEL3060	Analog Electronics Lab			3	1.5
7	18EEEEL3070	Electrical Circuit Analysis Lab			3	1.5
8	18EEEEL3080	Electrical Machines I Lab			3	1.5
<b>Total</b>			<b>15</b>	<b>3</b>	<b>9</b>	<b>22.5</b>

**II B. Tech EEE II Semester Approved Course structure for the Academic Year 2019-2020**

SN	Subject Code	Subject title	L	T	P	C
1	18EEEET4010	Signals & Systems	3			3
2	18CMMET4020	Engineering Mechanics	3	1		4
3	18EEEET4030	Digital Electronics	3			3
4	18EEEET4040	Control Systems	3			3
5	18EEEET4050	Electrical Machines II	3			3
6	18EEEEL4060	Digital Electronics Lab			3	1.5
7	18EEEEL4070	Control Systems Lab			3	1.5
8	18EEEEL4080	Electrical Machines II Lab			3	1.5
<b>Total</b>			<b>14</b>	<b>1</b>	<b>9</b>	<b>20.5</b>

### III B. Tech EEI-Semester Approved Course structure

S. No	Subject Code		Subject title	L	T	P	C
1	18EEEEET5010	PCC	Microprocessors & Microcontrollers	3			3
2	18EEEEET5020	PCC	Power Generation, Transmission & Distribution	3			3
3	18CMMST5030	HSMC	Management Science	3			3
4	18EEEEET5040	PCC	Power Electronics	3			3
5	18EEXXO5050	PCC	Electrical Measurements & Instrumentation	3			3
6	18EEXXO506X	OE	Open Elective – 1	3			3
7	18EEEEEL5070	PCC	Power Systems Lab			3	1.5
8	18EEEEEL5080	PCC	Power Electronics Lab			3	1.5
9	18CMAHSx0x	SOC	Soft Skills & Aptitude Builder - 1	1		2	2
Total				19		8	23

### III B. Tech EEE II Semester Approved Course structure

S. No	Subject Code		Subject title	L	T	P	C
1	18EEEEET6010	PCC	Power Systems Operation & Control	3			3
2	18CMMST6020	HSMC	Engineering Economics & Financial management	3			3
3	18EEEEEP603X	PE	Program Elective-1	3			3
4	18EEXXO604X	OE	Open Elective – 2	3			3
5	18EEXXO605X	OE	Open Elective – 3	3			3
6	18EEEEEL6060	PCC	Microprocessors & Microcontrollers Lab			2	1
7	18EEEEEL6070	PCC	Measurements and Instrumentation Lab			3	1.5
8	18CMAHXSx0x	SOC	Soft Skills & Aptitude Builder – 2	1		2	2
9	18CMBIT6090	MC	Biology for Engineers	2			
Total				18		7	19.5

**Program Elective-1**

<b>18EEEEEP603A</b>	<b>Line Commutated and Active Rectifiers</b>
<b>18EEEEEP603B</b>	<b>HVDC Transmission Systems</b>
<b>18EEEEEP603C</b>	<b>Control Systems Design</b>

**III –B. Tech EEEl-Semester Approved Course structure**

S. No	Subject Code		Subject title	L	T	P	C
1	18EEEEET7010	PCC	Power System Protection	3			3
2	18EEEEEP702X	PE	Program Elective-2	3			3
3	18EEEEEP703X	PE	Program Elective-3	3			3
4	18EEEEEP704X	PE	Program Elective-4	3			3
5	18EEEEEP705X	PE	Program Elective-5	3			3
6	18EEEXO706X	OE	Open Elective – 4	3			3
7	18EEEEEL7070	PCC	Power System Analysis Lab			3	1.5
8	18EEEEES7080	SOC	Design of Photovoltaic Systems	1		2	2
9	18EEEEEI7090	II	Industry Internship(During Summer vacation)				3
<b>Total</b>				<b>19</b>		<b>5</b>	<b>24.5</b>

**Program Elective-2**

<b>18EEEEEP702A</b>	<b>Modeling and Control of DC Drives</b>
<b>18EEEEEP702B</b>	<b>Smart Grid</b>
<b>18EEEEEP702C</b>	<b>Optimization Techniques</b>

**Program Elective-3**

<b>18EEEEEP703A</b>	<b>Electrical &amp; Hybrid Vehicles</b>
<b>18EEEEEP703B</b>	<b>Power System Dynamics &amp; Stability</b>
<b>18EEEEEP703C</b>	<b>Digital signal Processing</b>

**Program Elective- 4**

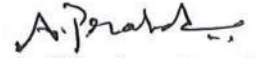
<b>18EEEEEP704A</b>	<b>Modeling and Control of AC Drives</b>
<b>18EEEEEP704B</b>	<b>Electrical Energy Conservation &amp; Auditing</b>
<b>18EEEEEP704C</b>	<b>Intelligent Control &amp; Its Applications</b>

**Program Elective- 5**

<b>18EEEEEP705A</b>	<b>Flexible Alternating Current Transmission Systems</b>
<b>18EEEEEP705B</b>	<b>Power Quality</b>
<b>18EEEEEP705C</b>	<b>Digital Control Systems</b>

**IV B. Tech EEE II Semester Approved Course structure**

S. No	Subject Code	Subject title	L	T	P	C
1	18EEER8010	Project			14	12
		<b>Total</b>			<b>14</b>	<b>12</b>



**Head of the department**

**HEAD OF THE DEPARTMENT OF  
ELECTRICAL & ELECTRONICS ENGG  
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## M. Tech. COURSE STRUCTURE

### Power Electronics Course Structure

#### I SEMESTER

S.No	Course Code	Name of the Subject	L	P	C
1	21EEPE101	Modelling and Analysis of Electrical Machines	4	-	3
2	21EEPE102	Analysis of Power Electronic Converters	4	-	3
3	21EEPE103	Power Semiconductor Devices and Modelling	4	-	3
4	21EEPE104	Power Electronic Control of DC Drives	4	-	3
5	Elective:1		4	-	3
	21EEPE105A	Special Electrical Machines			
	21EEPE105B	HVDC Transmission & FACTS			
6	Elective:2		4	-	3
	21EEPE106A	Hybrid and Electrical Vehicles			
	21EEPE106B	Digital Control Systems			
7	21EEPE151	Systems Simulation Laboratory	-	3	1.5
Total Credits					19.5

#### II SEMESTER


S.No	Course Code	Name of the Subject	L	P	C
1	21EEPE201	Power Electronic Control of AC Drives	4	-	3
2	21EEPE202	Power Converters for Renewable Energy Systems	4	-	3
3	21EEPE203	Power Quality & Custom Power Devices	4	-	3
4	Elective:3		4	-	3
	21EEPE204A	Artificial Intelligence Techniques			
	21EEPE204B	Digital Controllers			
5	Elective:4		4	-	3
	21EEPE205A	Modelling & Simulation of Power Electronics and Drive Systems			
	21EEPE205B	Smart Grid Technologies			
6	Elective:5		4	-	3
	21EEPE206A	Switch Mode and Resonant Converters			
	21EEPE206B	Optimization Techniques			
7	21EEPE251	Electrical Drives Laboratory	-	3	1.5
8	21EEPE252	Term Paper with seminar	-	-	3
Total Credits					22.5

### III SEMESTER

S.No	Course Code	Name of the Subject	L	P	C
1	21EEPE301	Self-Learning Course: Design of Photovoltaic Systems	-	-	3
2	21EEPE351	Project Work Phase – I	-	-	5
3	21EEPE352	Internship with seminar			4
Total Credits					12

### IV SEMESTER

S.No	Course Code	Name of the Subject	L	P	C
1	21EEPE451	Project Work Phase-II	-	-	10
Total Credits					10



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Department of Mechanical Engineering

**I B. Tech. I Semester Proposed Course Structure for the  
Regulation SITE 21**

S.No	CC	Course code	Course Title	L	T	P	C
1	BSC	21CMMAT1010	Engineering Mathematics –I (Calculus and Differential Equations)	3	0	0	3
2	BSC	21EEPHT1020	Engineering Physics	3	0	0	3
3	BSC	21CMCHT1030	Engineering Chemistry	3	0	0	3
4	ESC	21CMCST1040	Programming for Problem Solving	3	0	0	3
5	ESC	21CMMEL1050	Engineering Graphics	2	0	2	3
6	BSC	21EEPHT1060	Engineering Physics Lab	0	0	3	1.5
7	BSC	21CMCHL1070	Engineering Chemistry Lab	0	0	3	1.5
8	ESC	21CMCSL1080	Programming for Problem Solving Lab	0	0	3	1.5
9	MC	21CMMSN1090	Constitution of India, Professional Ethics & Human Rights	2	0	0	0
<b>TOTAL</b>				<b>16</b>	<b>0</b>	<b>11</b>	<b>19.5</b>

**I B. Tech. II Semester Proposed Course Structure for the  
Regulation SITE 21**

S.No	CC	Course code	Course Title	L	T	P	C
1	HSC	21CMEGT2010	Technical English	3	0	0	3
2	BSC	21CMMAT2020	Engineering Mathematics – II (Linear algebra, Laplace Transforms and Numerical Methods)	3	0	0	3
3	ESC	21CMEET2030	<b>Basic Electrical Engineering</b>	3	0	0	3
4	ESC	21CMCST2040	Python Programming	1	0	4	3
5	ESC	21EEMET2050	Engineering Mechanics	3	0	0	3
6	HSC	21CMEGL2060	English Communication Skills Lab	0	0	3	1.5
7	ESC	21CMEEL2070	<b>Basic Electrical Engineering Lab</b>	0	0	3	1.5
8	ESC	21CMMEL2080	Engineering Workshop Lab	0	0	3	1.5
9	MC	21CMCHN2090	Environmental Science	2	0	0	0
<b>TOTAL</b>				<b>15</b>	<b>0</b>	<b>13</b>	<b>19.5</b>

**II B. Tech. III Semester Proposed Course Structure for the  
Regulation SITE 21**

S.No.	CC	Course Code	Course Title	L	T	P	C
1	BSC	21CMMAT3010	Engineering Mathematics -III (Vector Calculus and Complex Analysis)	3	0	0	3
2	ESC	21MEMET3020	Materials Engineering	3	0	0	3
3	PCC	21MEMET3030	Mechanics of Solids	3	0	3	3
4	PCC	21MEMET3040	Thermodynamics	3	0	0	3
5	PCC	21MEMET3050	Fluid Mechanics and Fluid Machines	3	0	3	3
6	ESC	21MEMEL3060	Mechanics of Solids & Materials Lab	0	0	3	1.5
7	PCC	21MEMEL3070	Fluid Mechanics and Fluid Machine sLab	0	0	3	1.5
8	SOC	21MEMES3080	Computer Aided Engineering Drawing and Drafting (CAEDP)	1	0	2	2
9	MC	21MEECN3090	Basic Electronics Engineering	3	0	0	0
<b>Total Credit</b>							<b>20</b>

**II B. Tech. IV Semester Proposed Course Structure for the  
Regulation SITE 21**

S.No.	CC	Course Code	Course Title	L	T	P	Cr
1.	BSC	21 CMMAT4010	Engineering Mathematics -IV (Fourier series, Applications of PDE and Probability & Statistics)	3	0	0	3
2.	PCC	21MEMET4020	Applied Thermodynamics	3	0	0	3
3.	PCC	21MEMET4030	Design of Machine Elements -I	3	0	0	3
4.	PCC	21MEMET4040	Production Technology	3	0	0	3
5.	PCC	21MEMET4050	Kinematics of Machinery	3	0	0	3
6.	HSC	21MEMST4060	Engineering Economics and Financial Management	3	0	0	3
7.	PCC	21MEMEL4070	Thermal Engineering Lab	0	0	3	1.5
8.	PCC	21MEMEL4080	Production Technology Lab	0	0	3	1.5
9.	SOC	21MEMES4090	Computer Aided Three-Dimensional Interactive Application(CATIA)	1	0	2	2
<b>Total credits</b>							<b>23</b>
H/M			Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)	4	0	0	4

**III B. Tech. V Semester Course Structure for the  
Regulation SITE 21**

S. No.	CC	Course Code	Course Title	L	T	P	Cr
1	PCC	21MEMET5010	Machine Tools and Metrology	3	0	0	3
2	PCC	21MEMET5020	Dynamics of Machinery	3	0	0	3
3	PCC	21MEMET5030	Design of Machine Elements-II	3	0	0	3
4	PEC	21MEMEP504X	Professional Elective-I	3	0	0	3
5	OEC	21MEXXO505X	Open Elective Course-I	3	0	0	3
6	PCC	21MEMEL5060	Machine Tools and Metrology Lab	0	0	3	1.5
7	PCC	21MEMEL5070	Theory of Machines Lab	0	0	3	1.5
8	SOC	21MEXXS5080	Soft Skills & Aptitude Builder - 1	1	0	2	2
9	MC	21MEMEM5090	Machine Drawing Practice Lab	0	0	3	0
10	SI	21MEMEI5100	Summer Internship (2 months) after II year to be evaluated during V semester	0	0	0	1.5
<b>Total credits</b>							<b>21.5</b>
11	H/M		Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)	4	0	0	4

**Professional Elective Course -I**

S.No.	CC	Course Code	Course Title	L	T	P	Cr
1	PEC	21MEMEP504A	Conventional and Non-Conventional Power Stations	3	0	0	3
2		21MEMEP504B	Nano Technology	3	0	0	3
3		21MEMEP504C	Industrial Robotics with Artificial Intelligence	3	0	0	3
NPTEL/SWAYAM/MOOCs ( Course of 12 Weeks duration) to be offered							

**III B. Tech. VI Semester Course Structure for the  
Regulation SITE 21**

S.No.	CC	Course Code	Course Title	L	T	P	Cr	
1	PCC	21MEMET6010	CAD/CAM/CIM	3	0	0	3	
2	PCC	21MEMET6020	Finite Element Methods	3	0	0	3	
3	PCC	21MEMET6030	Heat Transfer	3	0	0	3	
4	PEC	21MEMEP604X	Professional Elective-II	3	0	0	3	
5	OEC	21MEXXO605X	Open Elective Course-II	3	0	0	3	
6	PCCL	21MEMEL6060	CAD/CAM Lab	0	0	3	1.5	
7	PCCL	21MEMEL6070	Heat Transfer Lab	0	0	3	1.5	
8	PCCL	21MEMEL6080	Instrumentation and Mechatronics Lab	0	0	3	1.5	
9	SOC	21MEXXS6090	Soft Skills & Aptitude Builder - 2	1	0	2	2	
10	MC	21MEMEN6100	Biology for Engineers	2	0	0	0	
11	I/RI	Research Internship - 2 Months (Mandatory) after Third year (to be evaluated during VII semester)						
<b>Total Credits</b>							<b>21.5</b>	
12	H/M		Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)	4	0	0	4	

**Professional Elective-II**

S. No.	CC	Subject Code	Name of the subject	L	T	P	Cr
1	PEC	21MEMEP604A	Gas Dynamics and Jet Propulsion	3	0	0	3*
2		21MEMEP604B	Mechanical Vibrations	3	0	0	3*
3		21MEMEP604C	Instrumentation and Mechatronics	3	0	0	3*
NPTEL/SWAYAM/MOOCs ( Course of 12 Weeks duration) to be offered							

**IV B. Tech. VII Semester Course Structure for the  
Regulation SITE 21**

S.No.	CC	Course Code	Course Title	L	T	P	Cr
1	PEC	21MEMEP701X	Professional Elective-III	3	0	0	3
2	PEC	21MEMEP702X	Professional Elective-IV	3	0	0	3
3	PEC	21MEMEP703X	Professional Elective-V	3	0	0	3
4	OEC	21MEXXO704X	Open Elective Course-III	3	0	0	3
5	OEC	21MEXXO705X	Open Elective Course-IV	3	0	0	3
6	HSC	21MEMET7060	Operation Research	3	0	0	3
7	SOC	21MEMES7070	Modelling and Analysis (FEA)	1	0	2	2
8	I/RI	21MEMER7080	Research Internship - 2 Months (Mandatory) after Third year (to be evaluated during VII semester	0	0	6	3
<b>Total Credits</b>							<b>23</b>
9	H/M		Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)	4	0	0	4

**Professional Elective Course -III**

S.No.	CC	Course Code	Course Title	L	T	P	Cr
1	PEC	21MEMEP701A	Prime Movers for Automobiles	3	0	0	3
2		21MEMEP701B	Mechanics of Composites	3	0	0	3
3		21MEMEP701C	Non – Destructive Evaluation	3	0	0	3
NPTEL/SWAYAM/MOOCs ( Course of 12 Weeks duration) to be offered							

**Professional Elective Course -IV**


S. No.	CC	Course Code	Course Title	L	T	P	Cr
1	PEC	21MEMEP702A	Refrigeration & Air Conditioning	3	0	0	3
2		21MEMEP702B	Synthesis and Characterization of Materials	3	0	0	3
3		21MEMEP702C	Smart Manufacturing and IIOT	3	0	0	3
NPTEL/SWAYAM/MOOCs ( Course of 12 Weeks duration) to be offered							

**Professional Elective Course -V**

S. No.	CC	Course Code	Course Title	L	T	P	Cr
1	PEC	21MEMEP703A	Solar Energy Engineering and Applications	3	0	0	3
2		21MEMEP703B	Additive Manufacturing	3	0	0	3
3		21MEMEP703C	Production Planning and Control	3	0	0	3
NPTEL/SWAYAM/MOOCs ( Course of 12 Weeks duration) to be offered							

**IV B. Tech. II Semester Course Structure for the  
Regulation SITE 21**

S. No.	CC	Course Code	Course Title	L	T	P	Cr
1	Project	21MEMER8010	Project, Seminar and Internship in Industry (6 months)	0	0	0	12
<b>Total Credits</b>							12

  
 Head of the Dept.  
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 Sasi Institute of Technology & Engineering  
 (Autonomous)  
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Department of Mechanical Engineering  
B. Tech. (Mechanical Engineering)

Semester I (First Year) Approved Course structure

S. No.	Course Code		Course Title	L	T	P	C
1.	18CMEGT1010	HSMC	Technical English	3	0	0	3
2.	18CMMAT1020	BSC	Engineering Mathematics-I	3	1	0	4
3.	18CMCHT1030	BSC	Engineering Chemistry	3	1	0	4
4.	18CMEET1040	ESC	Basic Electrical Engineering	3	1	0	4
5.	18CMEGL1050	HSMC	English Communication skills lab	0	0	2	1
6.	18CMCHL1060	BSC	Engineering Chemistry Lab	0	0	3	1.5
7.	18CMEEL1070	ESC	Basic Electrical Engineering Lab	0	0	3	1.5
8.	18CMMSN1080	MC	Constitution of India, Professional Ethics & Human Rights	3	0	0	0
			<b>Total</b>	<b>11</b>	<b>03</b>	<b>07</b>	<b>19</b>

B.Tech. (Mechanical Engineering)

Semester II (First Year) Approved Course structure

S. No.	Course Code		Course Title	L	T	P	C
1.	18CMMAT2010	BSC	Engineering Mathematics-II	3	1	0	4
2.	18MEPHT2020	BSC	Engineering Physics	3	1	0	4
3.	18CMCST2030	ESC	Programming for Problem Solving	3	0	0	3
4.	18CMMEEL2040	ESC	Engineering Graphics	1	0	4	3
5.	18MEPHL2050	BSC	Engineering Physics Lab	0	0	3	1.5
6.	18CMCSL2060	ESC	Programming for Problem Solving lab	0	0	4	2
7.	18CMMEEL2070	ESC	Work Shop/Manufacturing Practice	0	0	3	1.5
8.	18CMCHN2080	MC	Environmental Science	3	0	0	0
			<b>Total</b>	<b>11</b>	<b>02</b>	<b>15</b>	<b>19</b>

**B.Tech. (Mechanical Engineering)**  
**Semester III (Second Year) Approved Course structure**

S. No	Course Code		Course Title	L	T	P	C
1.	18CMMAT3010	BSC	Engineering Mathematics-III	3	1	0	4
2.	18MEMET3020	ESC	Engineering Mechanics	3	1	0	4
3.	18MEECT3030	ESC	Basic Electronics Engg.	3	0	0	3
4.	18MEMET3040	PCC	Manufacturing Processes	3	0	0	3
5.	18MEMET3050	PCC	Thermodynamics	3	0	0	3
6.	18MEMET3060	PCC	Materials Engineering	3	0	0	3
7.	18MEMEL3070	PCC	Manufacturing Processes Lab	0	0	3	1.5
8.	18MEMEL3080	PCC	CAEDP Lab	0	0	3	1.5
<b>Total</b>				<b>15</b>	<b>2</b>	<b>06</b>	<b>23</b>

**Semester IV (Second year) Approved Course structure**

S. No.	Course Code		Course Title	L	T	P	C
1.	18MEMET4010	PCC	Strength of Materials	3	0	0	3
2.	18MEMET4020	PCC	Fluid Mechanics & Fluid Machines	3	0	0	3
3.	18MEMET4030	PCC	Theory of Machines-I	3	0	0	3
4.	18MEMET4040	PCC	Applied Thermodynamics	3	0	0	3
5.	18CMMST4050	HSM C	Engg. Economics & Financial Management	3	0	0	3
6.	18MEMEL4060	PCC	Fluid Mechanics & Fluid Machines Lab	0	0	3	1.5
7.	18MEMEL4070	PCC	Mechanics of Solids & Materials Lab	0	0	3	1.5
8.	18MEMEM4080	MC	Machine Drawing Lab	1	0	4	0
<b>Total</b>				<b>14</b>	<b>00</b>	<b>06</b>	<b>18</b>

**B.Tech. (Mechanical Engineering)**  
**Semester V (Third year) Approved Course structure**

S. No.	Course Code		Course Title	L	T	P	C
1.	18MEMET5010	PCC	Machine Tools & Metrology	3	0	0	3
2.	18MEMET5020	PCC	Design of Machine Elements -I	3	0	0	3
3.	18MEMET5030	PCC	Heat Transfer	3	0	0	3
4.	18MEMET5040	PCC	CAD/CAM/CIM	3	0	0	3
5.	18MEMET505X	PEC	Professional Elective-1	3	0	0	3
6.	18MEXXO506X	OEC	Open Elective-I	3	0	0	3
7.	18MEMEL5070	PCC	Heat Transfer Lab	0	0	3	1.5
8.	18MEMEL5080	PCC	Machine Tools & Metrology Lab	0	0	3	1.5
9.	18MEXXS5090	SOC	Soft Skills & Aptitude Builder - 1	0	0	4	2
10.	18MEMEM50100	ESC	Biology for Engineers	3	0	0	0
			<b>Total</b>	<b>18</b>	<b>00</b>	<b>10</b>	<b>23</b>

**Professional Elective Course - I**

S. No.	Subject Code	Name of the subject	L	T	P	Cr
1.	18MEMEP505A	Conventional & Non-Conventional Power Stations	3	0	0	3*
2.	18MEMEP505B	Nano Technology	3	0	0	3*
3.	18MEMEP505C	Industrial Robotics with Artificial Intelligence	3	0	0	3*
NPTEL/SWAYAM/MOOCs ( Course of 12 Weeks duration) to be offered						

**B. Tech. (Mechanical Engineering)  
Semester VI (Third year) Approved Course structure**

S. No.	Course Code		Course Title	L	T	P	C
1.	18MEMET6010	PCC	Theory of Machines-II	3	0	0	3
2.	18MEMET6020	PCC	Design of Machine Elements -II	3	0	0	3
3.	18MEMEP603X	PE	Professional Elective -II	3	0	0	3
4.	18MEMEP604X	PE	Professional Elective -III	3	0	0	3
5.	18MEXXO605X	OE	Open Elective-II	3	0	0	3
6.	18MEMEL6060	PCC	Theory of Machines Lab	0	0	3	1.5
7.	18MEMEL6070	PCC	Thermal Engineering Lab	0	0	3	1.5
8.	18MEMEL6080	PCC	CAD/CAM Lab	0	0	3	1.5
9.	18MEXXS6090	SOC	Soft Skills & Aptitude Builder – 2	0	0	4	2
<b>Total</b>				<b>17</b>	<b>00</b>	<b>14</b>	<b>21.5</b>

**Professional Elective Course -II**

S. No.	Subject Code	Name of the subject	L	T	P	Cr
1.	18MEMEP603A	Prime Movers for Automobiles	3	0	0	3*
2.	18MEMEP603B	Synthesis and Characterization of Materials	3	0	0	3*
3.	18MEMEP603C	Additive Manufacturing	3	0	0	3*
NPTEL/SWAYAM/MOOCs ( Course of 12 Weeks duration) to be offered						

**Professional Elective Course -III**

S. No.	Subject Code	Name of the subject	L	T	P	Cr
1.	18MEMEP604A	Solar Energy Engineering and Applications	3	0	0	3*
2.	18MEMEP604B	Finite Element Methods	3	0	0	3*
3.	18MEMEP604C	Smart Manufacturing & IIOT	3	0	0	3*
NPTEL/SWAYAM/MOOCs ( Course of 12 Weeks duration) to be offered						

**B. Tech. (Mechanical Engineering)**  
**Semester VII (Fourth Year) Approved Course structure**

S. No.	Course Code		Course Title	L	T	P	C
1.	18MEMET7010	HSMC	Operations Research	3	0	0	3
2.	18MEMET7020	PCC	Instrumentation and Mechatronics	3	0	0	3
3.	18MEMET703X	PE	Professional Elective -IV	3	0	0	3
4.	18MEMEP704X	PE	Professional Elective -V	3	0	0	3
5.	18MEXXO705X	OE	Open Elective- III	3	0	0	3
6.	18MEXXO706X	OE	Open Elective- IV	3	0	0	3
7.	18MEMEL7070	PCC	Instrumentation and Mechatronics Lab	0	0	3	1.5
8.	18MEMER7080	PCC	Internship with Seminar	0	0	6	3
9.	18MEMES7090	SOC	Skill Oriented Course – 3 (Hyper Mesh)	0	0	4	2
<b>Total</b>				<b>18</b>	<b>0</b>	<b>14</b>	<b>24.5</b>

**Professional Elective Course -IV**

S. No.	Subject Code	Name of the subject	L	T	P	Cr
1.	18MEMEP703A	Refrigeration & Air Conditioning	3	0	0	3*
2.	18MEMEP703B	Mechanics of Composites	3	0	0	3*
3.	18MEMEP703C	Non – Destructive Evaluation	3	0	0	3*
NPTEL/SWAYAM/MOOCs ( Course of 12 Weeks duration) to be offered						

**Professional Elective Course -V**

S. No.	Subject Code	Name of the subject	L	T	P	Cr
1.	18MEMEP704A	Gas Dynamics and Jet Propulsion	3	0	0	3*
2.	18MEMEP704B	Mechanical Vibrations	3	0	0	3*
3.	18MEMEP704C	Production Planning and Control	3	0	0	3*
NPTEL/SWAYAM/MOOCs ( Course of 12 Weeks duration) to be offered						

**Semester VIII (Fourth Year) Approved Course structure**

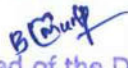
S. No.	Course Code		Course Title	L	T	P	C
1.	18MEMER801X	PCC	Project Work, Seminar & Internship in industry	-	-	-	12
<b>Total</b>				<b>-</b>	<b>-</b>	<b>-</b>	<b>12</b>

**OPEN ELECTIVE COURSES**

S. No.	Subject Code	Name of the subject	L	T	P	Cr
1.	18XXMEOX0XA	Operations Research	3	0	0	3
2.	18XXMEOX0XB	Fundamentals of Mechanical Engineering	3	0	0	3
3.	18XXMEOX0XC	Industrial Robotics	3	0	0	3
4.	18XXMEOX0XD	Engineering Materials	3	0	0	3
5.	18XXMEOX0XE	Introduction to Material Handling	3	0	0	3
6.	18XXMEOX0XF	Production Planning and Control	3	0	0	3
7.	18XXMEOX0XG	Non-Conventional Sources of Energy	3	0	0	3
8.	18XXMEOX0XH	Fluid Mechanics and Fluid Machinery	3	0	0	3

**CREDIT DISTRIBUTION FOR B.TECH. ME PROGRAM**

S. No.	Categories	ME											
		AICTE	Approved	Modified	Deviation	I-I	I-II	II-I	II-II	III-I	III-II	IV-I	IV-II
1	Humanities and Social Sciences	12	11	12	0	4			3		2	3	
2	Basic Science courses	25	26	23	-2	9.5	9.5	4					
3	Engineering Science courses	24	23	22	-2	5.5	9.5	7					
4	Professional Core courses	48	55	55	+7			12	15	12	11	5	
5	Professional Elective Courses	18	18	15	-3					3	6	6	
6	Open elective courses	18	12	12	-6					3	3	6	
7	Project work , Seminar and Internship	15	15	15	0							3	12
8	Skill Courses			06						2	2	2	
9	Mandatory Courses	-	-	-	-					-			
<b>Total Credits</b>		<b>160</b>	<b>160</b>	<b>160</b>		<b>19</b>	<b>19</b>	<b>23</b>	<b>18</b>	<b>20</b>	<b>24</b>	<b>25</b>	<b>12</b>

  
 Head of the Dept.  
 Mechanical Engineering  
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 Tadepalligudem-534101, W.G.Dist. (A.P.)

**I M. Tech. (CAD/CAM) I Semester Proposed Course structure for the  
Academic Year 2021-22**

<b>I Semester</b>						
<b>S. No</b>	<b>Course Code</b>	<b>Course Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
1	21MECC101	Geometric Modeling	3	0	0	3
2	21MECC102	Computer Aided Manufacturing	3	0	0	3
3		<b>Program Elective – 1</b>	3	0	0	3
	21MECC103A	Computational Methods in Engineering				
	21MECC103B	Materials Technology				
	21MECC103C	Mechanical Vibrations				
4		<b>Program Elective – 2</b>	3	0	0	3
	21MECC104A	Mechatronics				
	21MECC104B	Industrial Robotics				
	21MECC104C	Simulation of Manufacturing Systems				
5	21MECC155	Advanced CAD Lab	0	0	4	2
6	21MECC156	Advanced manufacturing Lab	0	0	4	2
7	21MECC157	Research Methodology and IPR	2	0	0	2
8	21MECC158	Writing Skills for Scientific Communication	2	0	0	0
<b>Total</b>						<b>18</b>

**I M. Tech. (CAD/CAM) II Semester Proposed Course structure for the  
Academic Year 2021-22**

<b>II Semester</b>						
<b>S. No</b>	<b>Course Code</b>	<b>Course Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
1	21MECC201	Theory of Elasticity and Plasticity	3	0	0	3
2	21MECC202	Advanced Manufacturing Processes	3	0	0	3
3		<b>Program Elective – 3</b>	3	0	0	3
	21MECC203A	Advanced Finite Element Methods				
	21MECC203B	Fracture mechanics				
	21MECC203C	Product Design and Development				
4		<b>Program Elective – 4</b>	3	0	0	3
	21MECC204A	Materials Characterization Techniques				
	21MECC204B	Optimization & Reliability				
	21MECC204C	Additive Manufacturing				
5	21MECC255	Material Characterization Lab	0	0	4	2
6	21MECC256	Simulation of Manufacturing Systems Lab	0	0	4	2
7	21MECC257	Mini Project With Seminar	2	0	0	2
8	21MECC258	Personality development through life Enlightenment skills	2	0	0	0
<b>Total</b>						<b>18</b>

**II M. Tech. (CAD/CAM) III Semester Proposed Course structure for the  
Academic Year 2021-2022**

III SEMESTER					
S. No	Course Code	Course Name	T	P	Credits
1		<b>Program Elective - 5</b>	3	0	3
	21MECC301A	Non Destructive Evaluation			
	21MECC301B	Quality Engineering			
	21MECC301C	Green Manufacturing			
	21MECC301D	MOOCS/ NPTEL *			
2		<b>Open Elective</b>	3	0	3
	21MECC302A	Nano Technology			
	21MECC302B	Optimization Techniques			
	21MECC302C	Product Design and Manufacturing			
3	21MECC303A	Project /Dissertation Phase-I	0	20	10
<b>Total</b>					<b>16</b>

**III M. Tech. (CAD/CAM) IV Semester Proposed Course structure for the  
Academic Year 2021-2022**

IV SEMESTER						
S. No	Course Code	Course Name	L	T	P	Credits
1	21MECC401A	Project /Dissertation Phase-II	0	0	32	16
<b>Total</b>						<b>16</b>

  
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**sasi** INSTITUTE OF  
**autonomous** TECHNOLOGY &  
**ENGINEERING**

Accredited by **NAAC** with **"A"** Grade  
 Recognised by **UGC** under section 2(f) & 12(B)  
 Approved by **AICTE** - NEW Delhi  
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 Ranked as **"A"** Grade by Govt. of A.P.

Department of Electronics & Communication Engineering

Course structure for SITE21 Regulations

**B. Tech (Electronics and Communication Engineering)**

Semester I (First year)

S.No	Subject Code	Course	L	T	P	C
1	21CMEGT1010	Technical English	3	0	0	3
2	21CMMAT1020	Engineering Mathematics-I	3	0	0	3
3	21CMEET1030	Basic Electrical Engineering	3	0	0	3
4	21CMCST1040	Programming for Problem Solving	3	0	0	3
5	21ECMEL1050	Computer Aided Engineering Graphics	2	0	2	3
6	21CMEGL1060	English Communication Skills Lab	0	0	3	1.5
7	21CMEEL1070	Basic Electrical Engineering Lab	0	0	3	1.5
8	21CMCSL1080	Programming for Problem Solving Lab	0	0	3	1.5
9	21CMESN1090	Environmental Science	2	0	0	0
<b>Total Semester Credits</b>						<b>19.5</b>

Semester II (First year)

S.No	Subject Code	Course	L	T	P	C
1	21CMMAT2010	Engineering, Mathematics - II	3	0	0	3
2	21ECPHT2020	Engineering Physics	3	0	0	3
3	21CMCHT2030	Engineering Chemistry	3	0	0	3
4	21CMCST2040	Python Programming	1	0	4	3
5	21ECECT2050	Network Analysis	3	0	0	3
6	21ECPHL2060	Engineering Physics Lab	0	0	3	1.5
7	21CMEEL2070	Engineering Chemistry Lab	0	0	3	1.5
8	21ECMEL2080	Engineering Workshop	0	0	3	1.5
9	21CMMSN2090	Constitution of India, Professional Ethics & Human Rights	2	0	0	0
<b>Total Semester Credits</b>						<b>19.5</b>

**Course Structure for**  
**B. Tech (Electronics and Communication Engineering)**  
**Semester III (Second year)**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ECMAT3010	Engineering Mathematics - III	3	0	0	3
2	21ECECT3020	Probability Theory & Stochastic Processes	3	0	0	3
3	21ECECT3030	Semiconductor Devices	3	0	0	3
4	21ECECT3040	Digital System Design	3	0	0	3
5	21ECECT3050	Signals & Systems	3	0	0	3
6	21ECECL3060	Semiconductor Devices Lab	0	0	3	1.5
7	21ECECL3070	Digital System Design Lab	0	0	3	1.5
8	21ECECL3080	Electrical Circuits Lab	0	0	3	1.5
9	21ECECS3090	Data Science using Python (Skill Oriented Course-1)	1	0	2	2
<b>Total Semester Credits</b>						<b>21.5</b>

**Semester IV (Second year)**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21CMMST4010	Management Science	3	0	0	3
2	21ECECT4020	EM Waves & Transmission Lines	3	0	0	3
3	21ECECT4030	Principles of Communication Theory	3	0	0	3
4	21ECECT4040	Electronic Circuit Analysis	3	0	0	3
5	21ECECT4050	Control Systems	3	0	0	3
6	21ECECL4060	Principles of Communication Theory Lab	0	0	3	1.5
7	21ECECL4070	Electronic Circuit Analysis Lab	0	0	3	1.5
8	21ECECL4080	Signals & Systems Lab	0	0	3	1.5
9	21ECECS4090	FPGA Architecture and Programming Using Verilog/ Matlab for Engineers (Skill Oriented Course-2)	1	0	2	2
10	21ECECN40A0	Pulse & Digital Circuits	2	0	0	0
<b>Total Semester Credits</b>						<b>21.5</b>
H/M	<b>Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)</b>					<b>4</b>

**Course Structure for**  
**B. Tech (Electronics and Communication Engineering)**  
**III B.Tech. V-Semester**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ECECT5010	Digital Modulation and Coding	3	0	0	3
2	21ECECT5020	Antenna Theory and Design	3	0	0	3
3	21ECECT5030	Linear IC Applications	3	0	0	3
4	21ECECP504X	Professional Elective-1	3	0	0	3
5	21ECXXO505X	Open Elective - 1	3	0	0	3
6	21ECECL5060	Digital Modulation and Coding Lab	0	0	3	1.5
7	21ECECL5070	Linear IC Applications Lab	0	0	3	1.5
8	21ECECS5080	Skill advanced course/ soft skill course-3* (Soft Skills & Aptitude Builder-1).	1	0	2	2
9	21ECECN5090	Biology for Engineers	2	0	0	0
10	21ECECR50A0	Summer Internship - 2 Months (Mandatory) after second year (to be evaluated during V semester)	0	0	3	1.5
<b>Total Semester Credits</b>						<b>21.5</b>
11		Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)	4	0	0	4

**Professional Elective-1**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ECECP504A	Computer Architecture & Organization	3	0	0	3
2	21ECECP504B	Introduction to Machine Learning	3	0	0	3
3	21ECECP504C	System Design through Verilog	3	0	0	3

**Open Elective-1**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21XXECO505A	Fundamentals of Integrated Circuits	3	0	0	3
2	21XXECO505B	Fundamentals of Microprocessors and Microcontrollers	3	0	0	3
3	21XXECO505C	Fundamentals of Digital Signal Processing	3	0	0	3

**Course Structure for**  
**B. Tech (Electronics & Communication Engineering)**  
**III B.Tech. VI-Semester**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ECECT6010	Digital Signal Processing	3	0	0	3
2	21ECECT6020	VLSI Design	3	0	0	3
3	21ECECT6030	Microprocessors & Microcontrollers	3	0	0	3
4	21ECECP604X	Professional Elective-2	3	0	0	3
5	21ECXXO605X	Open Elective - 2	3	0	0	3
6	21ECECL6060	Digital Signal Processing Lab	0	0	3	1.5
7	21ECECL6070	VLSI Design Lab	0	0	3	1.5
8	21ECECL6080	Microcontroller and Applications Lab	0	0	3	1.5
9	21ECECS6090	Skill advanced course/ soft skill course-4* Soft Skills and Aptitude Builder-2	1	0	2	2
10	21ECECN60A0	Research Methodology	2	0	0	0
						21.5
11	H/M	Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)	4	0	0	4

**Professional Elective-2**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ECECP604A	Embedded System Design	3	0	0	3
2	21ECECP604B	Cellular and Mobile Communications	3	0	0	3
3	21ECECP604C	Microwave Engineering	3	0	0	3

**Open Elective-2**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21XXECO605A	Fundamentals of Digital Image Processing	3	0	0	3
2	21XXECO605B	Transducers and Sensors	3	0	0	3
3	21XXECO605C	Embedded Systems	3	0	0	3

**Course Structure for**  
**B. Tech (Electronics & Communication Engineering)**  
**IV B.Tech. VII-Semester**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ECECP701X	Professional Elective-3	3	0	0	3
2	21ECECP702X	Professional Elective-4	3	0	0	3
3	21ECECP703X	Professional Elective-5	3	0	0	3
4	21ECECO704X	Open Elective - 3	3	0	0	3
5	21ECXXO705X	Open Elective - 4	3	0	0	3
6	21ECXXO706X	Humanities and Social Science Elective	3	0	0	3
7	21ECECS7070	Skill Advanced Course/ Soft Skill Course - 5* IoT and its Applications/ Microwave Circuits and Antenna Design using HFSS/Deep Learning	1	0	2	2
8	21ECECR7080	Research Internship - 2 Months (Mandatory) after Third year (to be evaluated during V semester)	0	0	6	3
						23
9	H/M	Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)	4	0	0	4

**Professional Elective-3**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ECECP701A	Digital Image Processing	3	0	0	3
2	21ECECP701B	Low Power VLSI Design	3	0	0	3
3	21ECECP701C	Embedded and Real-Time Systems	3	0	0	3

**Professional Elective-4**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ECECP702A	Wireless Sensor Networks	3	0	0	3
2	21ECECP702B	Design for Testability	3	0	0	3
3	21ECECP702C	Optical Communication	3	0	0	3

**Professional Elective-5**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ECECP703A	Radar Systems	3	0	0	3

2	21ECECP703B	Internet of Things	3	0	0	3
3	21ECECP703C	Soft Computing Techniques	3	0	0	3

**Open Elective-3**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21XXECO704A	Fundamentals of Internet of Things	3	0	0	3
2	21XXECO704B	Introduction to Cellular and Mobile Communications	3	0	0	3
3	21XXECO704C	Consumer Electronics	3	0	0	3

**Open Elective-4**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21XXECO705A	Embedded and Real-Time Concepts	3	0	0	3
2	21XXECO705B	Digital Integrated Circuits	3	0	0	3
3	21XXECO705C	Wireless Sensor Networks	3	0	0	3

**Course Structure for  
B. Tech (Electronics & Communication Engineering)**

**IV B.Tech. VIII-Semester**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ECECR8010	<b>Project:</b> Project work, seminar and internship in industry	0	0	24	12
<b>Total</b>						<b>12</b>

**Course Structure for  
B. Tech (Electronics & Communication Engineering)**

**COURSES OFFERED FOR MINORS**

S.No.	Course Code	Course	L-T-P	Credits
1	21MRECTXXXX	Electronics Devices and Basic Circuits	3-1-0	4
2	21MRECTXXXX	Digital Electronics	3-1-0	4
3	21MRECTXXXX	Principles of Communication Systems	3-1-0	4
4	21MRECTXXXX	Signal Analysis	3-1-0	4

In addition to any of the four subjects, MOOC/NPTEL Courses for 04 credits (02 courses@ 2 credits each) are compulsory in the domain of Electronics and Communication Engineering

**MOOC/NPTEL Courses for Minor program:**

	Course Name	Tentative period	Duration	Course Link
Minors Program	Modern Digital Communication Techniques	July-Oct	12	<a href="https://swayam.gov.in/explorer?searchText=Modern+Digital+Communication+Techniques">https://swayam.gov.in/explorer?searchText=Modern+Digital+Communication+Techniques</a>
	System Design Through VERILOG	July-Sept	08	<a href="https://swayam.gov.in/explorer?searchText=System+Design+Through+VERILOG">https://swayam.gov.in/explorer?searchText=System+Design+Through+VERILOG</a>
	Analog Electronic Circuits	Jan-April	12	<a href="https://onlinecourses.nptel.ac.in/noc23_ee77/preview">https://onlinecourses.nptel.ac.in/noc23_ee77/preview</a>
	Digital Signal Processing	Jan-April	12	<a href="https://nptel.ac.in/courses/117102060">https://nptel.ac.in/courses/117102060</a>

**Course Structure for  
B. Tech (Electronics and Communication Engineering)**

**COURSES OFFERED FOR HONORS PROGRAMME**

**POOL-1**

**Embedded Systems:** (any four of the following subjects which are not chosen as professional electives are to be considered for Honors Degree)

S.No.	Subject Code	Subject	L-T-P	Credits
1	21ECECHXXXX	Embedded System Design	3-1-0	4
2	21ECECHXXXX	Advanced Embedded Controllers	3-1-0	4
3	21ECECHXXXX	Parallel Processing	3-1-0	4
4	21ECECHXXXX	Embedded Systems for Biomedical applications	3-1-0	4
5	21ECECHXXXX	Internet of Things Fundamentals	3-1-0	4
6	21ECECHXXXX	Communication Protocols for Internet of Things	3-1-0	4
7	21ECECHXXXX	Industrial Internet of Things	3-1-0	4
8	21ECECHXXXX	Sensor Networks and Internet of Things	3-1-0	4

In addition to any of the four subjects, MOOC/NPTEL Courses for 04 credits (02 courses@ 2 credits each) are compulsory in the domain of Electronics and Communication Engineering

**POOL-2**

**Integrated circuits and Systems:** (any four of the following subjects which are not chosen as professional electives are to be considered for Honors Degree)

S.No.	Subject Code	Subject	L-T-P	Credits
1	21ECECHXXXX	VLSI Technology and Design	3-1-0	4
2	21ECECHXXXX	CMOS Analog IC Design	3-1-0	4
3	21ECECHXXXX	CMOS Digital IC design	3-1-0	4
4	21ECECHXXXX	Design for Testability	3-1-0	4
5	21ECECHXXXX	System on Chip	3-1-0	4
6	21ECECHXXXX	Programmable Logic Devices and ASIC	3-1-0	4
7	21ECECHXXXX	Scripting Language	3-1-0	4
8	21ECECHXXXX	Low Power VLSI Design	3-1-0	4

In addition to any of the four subjects, MOOC/NPTEL Courses for 04 credits (02 courses@ 2 credits each) are compulsory in the domain of Electronics and Communication Engineering

### POOL-3

**Communication Engineering:** (any four of the following subjects which are not chosen as a professional electives are to be considered for Honors Degree)

S.No.	Subject Code	Subject	L-T-P	Credits
1	21ECECHXXXX	Wireless Sensor Networks	3-1-0	4
2	21ECECHXXXX	Software defined radio	3-1-0	4
3	21ECECHXXXX	Data Communications & Computer Networks	3-1-0	4
4	21ECECHXXXX	Cognitive radio	3-1-0	4
5	21ECECHXXXX	5G Communications	3-1-0	4
6	21ECECHXXXX	Satellite communication	3-1-0	4
7	21ECECHXXXX	Optical Communication	3-1-0	4
8	21ECECHXXXX	Global navigational satellite systems	3-1-0	4

In addition to any of the four subjects, MOOC/NPTEL Courses for 04 credits (02 courses@ 2 credits each) are compulsory in the domain of Electronics and Communication Engineering

### POOL-4

**Digital Signal processing:** (any four of the following subjects which are not chosen as a professional elective are to be considered for Honors Degree)

S.No.	Subject Code	Subject	L-T-P	Credits
1	21ECECHXXXX	Speech Signal Processing	3-1-0	4
2	21ECECHXXXX	Video Signal Processing	3-1-0	4
3	21ECECHXXXX	Adaptive Signal Processing	3-1-0	4
4	21ECECHXXXX	Bio- Medical Signal Processing	3-1-0	4
5	21ECECHXXXX	DSP Processors and Architectures	3-1-0	4
6	21ECECHXXXX	Wavelet Theory	3-1-0	4
7	21ECECHXXXX	Multirate Systems And Filter Banks	3-1-0	4
8	21ECECHXXXX	Mathematical methods for signal processing	3-1-0	4

In addition to any of the four subjects, MOOC/NPTEL Courses for 04 credits (02 courses@ 2 credits each) are compulsory in the domain of Electronics and Communication Engineering

**MOOC/NPTEL Courses for Honor program:**

	Course Name		Tentative period	Duration	Course Link
Honors Program	Track-1 Embedded Systems	<b>Embedded System Design With ARM</b>	July-Sept	08	<a href="https://onlinecourses.nptel.ac.in/noc22_cs93/preview">https://onlinecourses.nptel.ac.in/noc22_cs93/preview</a>
		<b>Fabrication Techniques for MEMs-based sensors: clinical perspective</b>	July-Oct	12	<a href="https://onlinecourses.nptel.ac.in/noc22_ee76/preview">https://onlinecourses.nptel.ac.in/noc22_ee76/preview</a>
		<b>Introduction To Industry 4.0 And Industrial Internet of Things</b>	July-Oct	12	<a href="https://onlinecourses.nptel.ac.in/noc22_cs95/preview">https://onlinecourses.nptel.ac.in/noc22_cs95/preview</a>
		<b>Sensors and actuators</b>	Jan-April	12	<a href="https://onlinecourses.nptel.ac.in/noc21_ee32/preview">https://onlinecourses.nptel.ac.in/noc21_ee32/preview</a>
	Track-2 Integrated circuits and Systems	<b>VLSI Interconnects</b>	July-Sept	08	<a href="https://onlinecourses.nptel.ac.in/noc22_ee125/preview">https://onlinecourses.nptel.ac.in/noc22_ee125/preview</a>
		<b>Hardware Modelling Using Verilog</b>	July-Sept	08	<a href="https://onlinecourses.nptel.ac.in/noc22_cs94/preview">https://onlinecourses.nptel.ac.in/noc22_cs94/preview</a>
		<b>Architectural Design of Digital Integrated Circuits</b>	Jan-April	12	<a href="https://onlinecourses.nptel.ac.in/noc22_ee58/preview">https://onlinecourses.nptel.ac.in/noc22_ee58/preview</a>
		<b>Design and Analysis of VLSI Subsystems</b>	Jan-April	12	<a href="https://onlinecourses.nptel.ac.in/noc22_ee44/preview">https://onlinecourses.nptel.ac.in/noc22_ee44/preview</a>
	Track-3 Communication Engineering	<b>Principles of Signal Estimation for MIMO/ OFDM Wireless Communication</b>	July-Sept	12	<a href="https://onlinecourses.nptel.ac.in/noc22_ee72/preview">https://onlinecourses.nptel.ac.in/noc22_ee72/preview</a>
		<b>Evolution Of Air Interface Towards 5G</b>	Jan-April	08	<a href="https://onlinecourses.nptel.ac.in/noc22_ee56/preview">https://onlinecourses.nptel.ac.in/noc22_ee56/preview</a>
		<b>Optical Wireless Communications for</b>	Jan-April	12	<a href="https://onlinecourses.nptel.ac">https://onlinecourses.nptel.ac</a>

		<b>Beyond 5G Networks and IoT</b>			<a href="https://onlinecourses.nptel.ac.in/noc23_ee61/preview">.in/noc23_ee61/preview</a>
		<b>Spread Spectrum Communications and Jamming</b>	Jan-April	12	<a href="https://onlinecourses.nptel.ac.in/noc20_ee34/preview">https://onlinecourses.nptel.ac.in/noc20_ee34/preview</a>
Track-4 Digital Signal Processing		<b>Signal Processing for mm Wave communication</b>	July-Oct	12	<a href="https://onlinecourses.nptel.ac.in/noc22_ee102/preview">https://onlinecourses.nptel.ac.in/noc22_ee102/preview</a>
		<b>Pattern Recognition and Application</b>	July-Oct	12	<a href="https://onlinecourses.nptel.ac.in/noc22_ee119/preview">https://onlinecourses.nptel.ac.in/noc22_ee119/preview</a>
		<b>VLSI Signal Processing</b>	Jan-April	12	<a href="https://onlinecourses.nptel.ac.in/noc20_ee44/preview">https://onlinecourses.nptel.ac.in/noc20_ee44/preview</a>
		<b>Multirate DSP</b>	Jan-April	12	<a href="https://archive.nptel.ac.in/courses/108/106/108106136/">https://archive.nptel.ac.in/courses/108/106/108106136/</a>

  
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Department of Electronics & Communication Engineering

Course Structure for SITE18M Regulations

B. Tech (Electronics and Communication Engineering)

Semester I (First year)

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18CMMAT1010	Engineering Mathematics – 1	3	1	0	4
2	18ECPHT1020	Engineering Physics	3	1	0	4
3	18CMCST1030	Programming for Problem Solving	3	0	0	3
4	18CMMEL1040	Engineering Graphics	1	0	4	3
5	18ECPHL1050	Engineering Physics Lab	0	0	3	1.5
6	18CMCSL1060	Programming for Problem Solving Lab	0	0	4	2
7	18CMMEL1070	Workshop/Manufacturing practice	0	0	3	1.5
8	18CMCHN1080	Environmental Science	3	0	0	0
<b>Total</b>						<b>19</b>

Semester II (First year)

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18CMEGT2010	Technical English	3	0	0	3
2	18CMMAT2020	Engineering Mathematics - II	3	1	0	4
3	18CMCHT2030	Engineering Chemistry	3	1	0	4
4	18CMEET2040	Basic Electrical Engineering	3	1	0	4
5	18CMEGL2050	English Communication Skills Lab	0	0	2	1
6	18CMCHL2060	Engineering Chemistry Lab	0	0	3	1.5
7	18CMEEL2070	Basic Electrical Engineering Lab	0	0	3	1.5
8	18CMMSN2080	Constitution of India, PE&HR	3	0	0	0
<b>Total</b>						<b>19</b>

**Course Structure for**  
**B. Tech (Electronics and Communication Engineering)**  
**Semester III (Second year)**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18CMMAT3010	Engineering Mathematics – III	3	1	0	4
2	18ECECT3020	Electronic Devices	3	0	0	3
3	18ECECT3030	Network Analysis	3	0	0	3
4	18ECECT3040	Signals & Systems	3	0	0	3
5	18ECECT3050	Probability & Stochastic Processes	3	0	0	3
6	18ECECL3060	Electronic Devices Lab	0	0	3	1.5
7	18ECECL3070	Network Analysis Lab	0	0	3	1.5
8	18ECECN3080	Pulse & Digital Circuits	3	0	0	0
<b>Total</b>						<b>19</b>

**Semester IV (Second year)**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18ECECT4010	Digital System Design	3	0	0	3
2	18CMMET4020	Engineering Mechanics	3	1	0	4
3	18ECECT4030	EM Waves & Transmission Lines	3	0	0	3
4	18ECECT4040	Analog Circuits	3	0	0	3
5	18ECECT4050	Analog & Digital Communications	3	0	0	3
6	18ECECL4060	Digital System Design Lab	0	0	3	1.5
7	18ECECL4070	Analog Circuits Lab	0	0	3	1.5
8	18ECECL4080	Analog & Digital Communications Lab	0	0	3	1.5
<b>Total</b>						<b>20.5</b>

**Course Structure for  
B. Tech (Electronics and Communication Engineering)  
Semester V (Third year)**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18CMMST5010	Management Science	3	0	0	3
2	18ECECT5020	Control Systems	3	1	0	4
3	18ECECT5030	Computer Architecture & Organization	3	0	0	3
4	18ECECT5040	Microprocessor and Microcontrollers	3	0	0	3
5	18ECECT5050	Digital Signal Processing	3	0	0	3
6	18ECECP506X	Professional Elective - I	3	0	0	3
7	18ECECL5070	Microprocessor and Microcontrollers Lab	0	0	3	1.5
8	18ECECL5080	Digital Signal Processing Lab	0	0	3	1.5
9	18CMAHS5090	Soft Skills & Aptitude Builder-1 (Skill Oriented Course-1)	1	0	2	2
10	18CMMSN50A0	Biology for Engineers	2	0	0	0
<b>Total</b>						<b>24</b>

**Professional Elective-I**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18ECECP506A	Antennas and Wave Propagation	3	0	0	3
2	18ECECP506B	Information Theory & Coding	3	0	0	3
3	18ECECP506C	System Design through Verilog	3	0	0	3

**Course Structure for  
B. Tech (Electronics and Communication Engineering)  
Semester VI (Third year)**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18ECECT6010	VLSI Design	3	0	0	3
2	18ECECT6020	Computer Networks	3	0	0	3
3	18ECECP603X	Professional Elective – II	3	0	0	3
4	18ECECP604X	Professional Elective – III	3	0	0	3
5	18ECXXO605X	Open Elective – I	3	0	0	3
6	18ECXXO606X	Open Elective - II	3	0	0	3
7	18ECECL6070	VLSI Design Lab	0	0	4	2
8	18ECECL6080	Computer Networks Lab	0	0	3	1.5
9	18CMAHS6090	Soft Skills and Aptitude Builder-2 (Skill Oriented Course-II)	1	0	2	2
<b>Total</b>						<b>23.5</b>

**Professional Elective-II**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18ECECP603A	Embedded System Design	3	0	0	3
2	18ECECP603B	Design for Testability	3	0	0	3
3	18ECECP603C	Advanced Digital Signal Processing	3	0	0	3

**Professional Elective-III**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18ECECP604A	Microwave Engineering	3	0	0	3
2	18ECECP604B	Internet Protocols	3	0	0	3
3	18ECECP604C	Digital Image Processing	3	0	0	3

**OE-I & OE-II**

Candidate should select the subject from list of subjects offered by other departments

**Course Structure for  
B. Tech (Electronics and Communication Engineering)**

**Semester VII (Fourth year)**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18CMMST7010	Engineering Economics & Financial Management	3	0	0	3
2	18ECECT7020	Electronic Measurements & Instrumentation	3	0	0	3
3	18ECECP703X	Professional Elective – IV	3	0	0	3
4	18ECECP704X	Professional Elective – V	3	0	0	3
5	18ECXXO705X	Open Elective – III	3	0	0	3
6	18ECXXO706X	Open Elective - IV	3	0	0	3
7	18ECECS7070	IOT and its Applications / Microwave Circuits and Antenna Design using HFSS (Skill Oriented Course-III)	1	0	2	2
8	18ECECR7080	Industrial/Research Internship 2 Months (Mandatory) after third year (to be evaluated during VII semester)	0	0	6	3
<b>Total</b>						<b>23</b>

**Professional Elective-IV**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18ECECP703A	Embedded and Real Time Concepts	3	0	0	3
2	18ECECP703B	Low Power VLSI	3	0	0	3
3	18ECECP703C	Cellular and Mobile Communications	3	0	0	3

**Professional Elective-V**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18ECECP704A	Radar Systems	3	0	0	3
2	18ECECP704B	Wireless Sensor Networks.	3	0	0	3
3	18ECECP704C	Computer vision and Image Processing	3	0	0	3

**OE-III & OE-IV**

Candidate should select the subject from list of subjects offered by other departments

**Course Structure for**  
**B. Tech (Electronics and Communication Engineering)**  
**Semester VIII (Fourth year)**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18ECECR8010	Project Project work, seminar and internship in industry	0	0	24	12
<b>Total</b>						<b>12</b>

**Open Elective Courses offered by ECE Department to the other Departments**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18XXECO0XA	VLSI Design	3	0	0	3
2	18XXECO0XB	HDL Programming for IC Design	3	0	0	3
3	18XXECO0XC	Principles of Communication Systems	3	0	0	3
4	18XXECO0XD	Transducers and Sensors	3	0	0	3
5	18XXECO0XE	Fundamentals of Microprocessors and Microcontrollers	3	0	0	3
6	18XXECO0XF	Fundamentals of Internet of Things	3	0	0	3
7	18XXECO0XG	Fundamentals of Digital Image Processing	3	0	0	3
8	18XXECO0XH	Signals and Systems	3	0	0	3

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Department of Electronics & Communication Engineering

**Course Structure for M.Tech. (CE & SP) Under the Regulations of  
SITE-21**

**Semester I (First year)**

S.No.	Category	Course Code	Name of the Subject	L	T	P	C
1	CE	21ECSP101	Advanced Digital Signal Processing	3	0	0	3
2	CE	21ECSP102	Coding Theory & Applications	3	0	0	3
<b>Elective-I</b>							
3	PE	21ECSP103A	DSP Architectures	3	0	0	3
		21ECSP103B	Statistical Signal Processing	3	0	0	
		21ECSP103C	Radar signal processing	3	0	0	
<b>Elective-II</b>							
4	PE	21ECSP104A	Digital data communications	3	0	0	3
		21ECSP104B	Wireless Sensor Networks	3	0	0	
		21ECSP104C	Multimedia over communication	3	0	0	
5	MC	21ECSP105	Research methodology and IPR	2	0	0	2
6	CE	21ECSP151	Advanced Digital Signal Processing Lab	0	0	4	2
7	CE	21ECSP152	Data communications lab	0	0	4	2
8	AUD	21ECSP106	Audit course 1	2	0	0	-
<b>Total Credits</b>							<b>18</b>

**Semester II (First year)**

S.No.	Category	Course Code	Name of the Subject	L	T	P	C
1	CE	21ECSP201	Antenna theory & Design	3	0	0	3
2	CE	21ECSP202	Image processing & machine vision	3	0	0	3
<b>Elective-I</b>							
3	PE	21ECSP203A	Internet of things	3	0	0	3
		21ECSP203B	Adaptive Signal processing	3	0	0	
		21ECSP203C	Biomedical Signal Processing	3	0	0	
<b>Elective-II</b>							
4	PE	21ECSP204A	Optical Networks	3	0	0	3
		21ECSP204B	Modern Spectrum Analysis & Estimation	3	0	0	

		21ECSP204C	EMI/EMC	3	0	0	0
5	CE	21ECSP251	Digital image & Video processing Lab	0	0	3	2
6	CE	21ECSP252	Detection and Estimation Theory Lab	0	0	3	2
7	MP	21ECSP253	Mini Project	0	0	0	2
8	AUD 2	21ECSP206	Audit course	2	0	0	0
<b>Total Credits</b>							<b>18</b>

**Semester III (Second year)**

S.No.	Category	Course Code	Name of the Subject	L	T	P	C
1	PE	1ECSP301A	Mobile computing technologies	3	0	-	3
		21ECSP301B	Soft Computing Techniques	3	0	-	-
		21ECSP301C	Pattern Recognition & Machine Learning	3	0	-	-
2	OE	21ECSP302A	Optimization Techniques	3	0	-	3
		21ECSP302B	Modeling and Simulation Techniques	3	0	-	
		21ECSP302C	Artificial Intelligence	3	0	-	
3	Dissertation	21ECSP351	Dissertation Phase -I /Industrial Project (to be continued and evaluated next semester)	-	0	20	10
<b>Total Credits</b>							<b>16</b>

**Semester IV (Second year)**

S.No	Category	Course Code	Name of the Subject	L	T	P	C
1	Dissertation Project/ Dissertation Phase	21ECVE451	Project/ Dissertation Phase-II	0	0	0	16
<b>Total Credits</b>							<b>16</b>

  
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**Course Structure for M.Tech. (VLSI & ES) Under the Regulations of  
SITE-21**

**First Year (Semester – I)**

S.No.	Category	Course Code	Name of the Subject	L	T	P	C
1	CE	21ECVE101	Principles of Embedded Systems	3	0	0	3
2	CE	21ECVE102	CMOS Analog IC Design	3	0	0	3
<b>Elective-I</b>							
3	PE	21ECVE103A	Physical Design Automation	3	0	0	3
		21ECVE103B	Digital System Synthesis and Verification	3	0	0	
		21ECVE103C	Advanced Digital Design	3	0	0	
<b>Elective-II</b>							
4	PE	21ECVE104A	Micro controllers for Embedded System Design	3	0	0	3
		21ECVE104B	Embedded and Real Time Systems	3	0	0	
		21ECVE104C	Network Security and Cryptography	3	0	0	
5	MC	21ECVE105	Research methodology and IPR	2	0	0	2
6	CE	21ECVE151	Advanced VLSI Design Lab I	0	0	4	2
7	CE	21ECVE152	Embedded System Lab	0	0	4	2
8	AUD	21ECVE106	Audit course I	2	0	0	-
<b>Total Credits</b>							<b>18</b>

**First Year (Semester – II)**

S.No.	Category	Course Code	Name of the Subject	L	T	P	C
1	CE	21ECVE201	Internet of Things	3	0	0	3
2	CE	21ECVE202	VLSI Testing and Testability	3	0	0	3
<b>Elective-I VLSI design course</b>							
3	PE	21ECVE203A	Functional Verification using Hardware Verification Languages	3	0	0	3
		21ECVE203B	CMOS Mixed Signal Circuit Design	3	0	0	
		21ECVE203C	Low Power VLSI Design	3	0	0	
<b>Elective-II Embedded system course</b>							

4	PE	21ECVE204A	Embedded System Design	3	0	0	3
		21ECVE204B	Sensors And Actuators	3	0	0	
		21ECVE204C	Micro Electro Mechanical System (MEMS) Design	3	0	0	
5	CE	21ECVE251	Advanced VLSI Design Lab II	0	0	3	2
6	CE	21ECVE252	IOT Lab	0	0	3	2
7	MP	21ECVE253	Mini Project	0	0	0	2
8	AUD 2	21ECVE206	Audit course	2	0	0	0
<b>Total Credits</b>							<b>18</b>

### Second Year (Semester – III)

S.No.	Category	Course Code	Name of the Subject	L	T	P	C
1	PE	21ECVE301A	VLSI Technology	3	0	-	3
		21ECVE301B	CPLD and FPGA Architectures and Applications	3	0	-	-
		21ECVE301C	Programming Languages for Embedded Systems	3	0	-	-
2	OE	21ECVE302A	Optimization Techniques	3	0	-	3
		21ECVE302B	Modeling and Simulation Techniques	3	0	-	
		21ECVE302C	Artificial Intelligence	3	0	-	
3	Dissertation	21ECVE351	Dissertation Phase -I /Industrial Project (to be continued and evaluated next semester)	-	0	20	10
<b>Total Credits</b>							<b>16</b>

### Second Year (Semester – IV)

S.No	Category	Course Code	Name of the Subject	L	T	P	C
1	Dissertation Project/ Dissertation Phase	21ECVE451	Project/ Dissertation Phase-II	0	0	0	16
<b>Total Credits</b>							<b>16</b>

  
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**SITE21 Regulations**  
**COURSE STRUCTURE for B. Tech. (CSE)**  
**Semester I (First year I -I)**

S.No	SubjectCode	Course	Hours			Credits
			L	T	P	
1	21CMEGT1010	Technical English	3	0	0	3
2	21CMMAT1020	Engineering Mathematics - I	3	0	0	3
3	21CMEET1030	Basic Electrical Engineering	3	0	0	3
4	21CMCST1040	Programming for Problem Solving	3	0	0	3
5	21CSMEL1050	Computer Aided Engineering Graphics	2	0	2	3
6	21CMEGL1060	English Communication Skills Lab	0	0	3	1.5
7	21CMEEL1070	Basic Electrical Engineering Lab	0	0	3	1.5
8	21CMCSL1080	Programming for Problem Solving Lab	0	0	3	1.5
9	21CMESN1090	Environmental Science	2	0	0	0
<b>Total</b>			<b>16</b>	<b>0</b>	<b>11</b>	<b>19.5</b>

**Semester II (First year I -II)**

S. No	Subject Code	Course	Hours			Credits
			L	T	P	
1	21CMMAT2010	Engineering Mathematics - II	3	0	0	3
2	21CSPHT2020	Engineering Physics	3	0	0	3
3	21CMCHT2030	Engineering Chemistry	3	0	0	3
4	21CMCST2040	Python Programming	1	0	4	3
5	21CSCST2050	Data Structures	3	0	0	3
6	21CSPHL2060	Engineering Physics Lab	0	0	3	1.5
7	21CMCHL2070	Engineering Chemistry Lab	0	0	3	1.5
8	21CSCSL2080	Data Structures Lab	0	0	3	1.5
9	21CMMSN2090	Constitution of India, Professional Ethics & Human Rights	2	0	0	0
<b>Total</b>			<b>16</b>	<b>0</b>	<b>11</b>	<b>19.5</b>

  
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**Semester III (Second year II-I)**

S. No	Code	Course Title	Hours			Credits
			L	T	P	
1	21CMMAT3010	Probability Distributions & Statistical Methods	3	0	0	3
2	21CSECT3020	Analog & Digital Electronics	3	0	0	3
3	21CSCST3030	Computer Organization	3	0	0	3
4	21CSCST3040	Java Programming	3	0	0	3
5	21CSCST3050	Data Base Management Systems	3	0	0	3
6	21CSCSL3060	Analog & Digital Electronics Lab	0	0	3	1.5
7	21CSCSL3070	Java Programming Lab	0	0	3	1.5
8	21CSCSL3080	Data Base Management Systems Lab	0	0	3	1.5
9	21CSCSS3090	Data Science Using Python	0	0	3	2
10	21CMBIN3100	Biology for Engineers	2	0	0	0
<b>Total</b>			<b>17</b>	<b>0</b>	<b>12</b>	<b>21.5</b>

**Semester IV (Second year II-II)**

S.No	Code	Course Title	Hours			Credits
			L	T	P	
1	21CMMAT4010	Discrete Mathematics	3	0	0	3
2	21CMMST4020	Engineering Economics & Financial Management	3	0	0	3
3	21CSCST4030	Operating systems	3	0	0	3
4	21CSCST4040	Design and Analysis of Algorithms	3	0	0	3
5	21CSCST4050	Software Engineering	3	0	0	3
6	21CSCSL4060	Operating systems Lab	0	0	3	1.5
7	21CSCSL4070	Design and Analysis of Algorithms Lab	0	0	3	1.5
8	21CSCSL4080	Software Engineering Lab	0	0	3	1.5
9	21CSCSS4090	MEAN Stack Technologies	2	0	0	2
<b>Total</b>			<b>17</b>	<b>0</b>	<b>9</b>	<b>21.5</b>

  
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**Semester V (Third Year III-I)**

S. No	Category	Code	Course Title	Hours			Credits
				L	T	P	
1	PC	21CSCST5010	Automata Theory & Compiler Design	3	0	0	3
2	PC	21CSCST5020	Computer Networks	3	0	0	3
3	PC	21CSCST5030	Data Warehousing and Mining	3	0	0	3
4	PE-I	21CSCSP504X	Professional Elective -I	3	0	0	3
5	OE-I	21CSXXO505X	Open Elective - I	3	0	0	3
6	PC	21CSCSL5060	Computer Networks lab	0	0	3	1.5
7	PC	21CSCSL5070	Data Mining Lab	0	0	3	1.5
8	SOC	21CMAHS5080	<b>Skill Oriented Course</b> Soft Skills & Aptitude Builder - 1	1	0	2	2
9	MC	21CSCSN5090	Intellectual Property Rights	2	0	0	0
<b>Summer Internship 2 Months (Mandatory) after second year (to be evaluated during V semester) (21CSCSR5100)</b>				0	0	0	1.5
<b>Total credits</b>							<b>21.5</b>
<b>Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)</b>				4	0	0	4

Category	Credits
Professional core Courses	12
Professional Elective courses	3
Open Elective Course	3
Skill oriented course	2
Summer Internship	1.5
<b>Total Credits</b>	<b>21.5</b>

Professional Elective - I	
Code	Course Title
21CSCSP504A	Software Testing
21CSCSP504B	Software Project Management
21CSCSP504C	Software Quality Assurance
21CSCSP504D	Agile Software Development

  
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**Semester VII (Fourth year IV-I)**

S. No	Category	Code	Course Title	Hours			Credits
				L	T	P	
1	PE	21CSCSP701X	Professional Elective -III	3	0	0	3
2	PE	21CSCSP702X	Professional Elective - IV	3	0	0	3
3	PE	21CSCSP703X	Professional Elective - V	3	0	0	3
4	OE-III	21CSXXO704X	Open Elective Course	3	0	0	3
5	OE-IV	21CSXXO705X	Open Elective Course	3	0	0	3
6	HS	21CSMST7060	Management Science	0	0	3	3
7	SOC	21CSCSS7070	<b>Skill Oriented Course</b> ETL Spark	0	0	3	2
<b>Summer Internship 2 Months (Mandatory) after third year (to be evaluated during VII semester)(21CSCSR7080)</b>				0	0	0	3
<b>Total credits</b>							<b>23</b>
<b>Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)</b>				4	0	0	4

Professional Elective - III	
Code	Course Title
21CSCSP701A	Network Protocols
21CSCSP701B	Ad-hoc & Sensor Networks
21CSCSP701C	Mobile Computing
21CSCSP701D	Cyber Security

Professional Elective - III	
Code	Course Title
21CSCSP702A	Mobile Application Development
21CSCSP702B	Social Networks & Semantic Web
21CSCSP702C	Computer Vision
21CSCSP702D	Ethical Hacking

Professional Elective - V	
Code	Course Title
21CSCSP703A	Block-Chain Technologies
21CSCSP703B	Wireless Network Security
21CSCSP703C	Deep Learning
21CSCSP703D	Neural Networks and Soft Computing

  
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**Semester VI (Third year III-II)**

S. No	Category	Code	Course Title	Hours			Credits
				L	T	P	
1	PC	21CSCST6010	Machine Learning	3	0	0	3
2	PC	21CSCST6020	Cryptography & Network Security	3	0	0	3
3	PC	21CSCST6030	Unified Modelling Language	3	0	0	3
4	PE-I	21CSCSP604X	Professional Elective - II	3	0	0	3
5	OE-II	21CSXXO605X	Open Elective Course	3	0	0	3
6	PC	21CSCSL6060	Unix Programming Lab	0	0	3	1.5
7	PC	21CSCSL6070	Machine Learning Lab	0	0	3	1.5
8	PC	21CSCSL6080	Unified Modelling LanguageLab	0	0	3	1.5
9	SOC	21CMAHS6090	<b>Skill Oriented Course</b> Soft Skills & Aptitude Builder - 2	1	0	2	2
10	MC	21CSCSN6100	<b>Mandatory course</b> Essence of Indian Traditional Knowledge	2	0	0	0
<b>Total credits</b>							<b>21.5</b>
<b>Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)</b>				4	0	0	4


Category	Credits
Professional core courses	13.5
Professional Elective courses	3
Open Elective Course	3
Skill-oriented course/ soft skill course*	2
Mandatory course (AICTE)	0
<b>Total Credits</b>	<b>21.5</b>

Professional Elective - II	
Code	Course Title
21CSCSP604A	Data Science
21CSCSP604B	Artificial Intelligence
21CSCSP604C	Cloud Computing
21CSCSP604D	Hadoop & Big Data

  
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**Semester VIII (Fourth year IV-II)**

S. No	Category	Code	Course Title	Hours			Credits
				L	T	P	
1	PR	21CSCSR8010	Project	0	0	12	12
<b>Total credits</b>							<b>12</b>

  
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## Suggested Courses for Honors Program

<b>POOL1- AI &amp; ML</b> <ol style="list-style-type: none"><li>1. Mathematics for Machine Learning</li><li>2. Text Mining and Time Series Analysis</li><li>3. Natural Language Processing</li><li>4. Reinforcement Learning</li></ol>	<b>POOL2- Systems Engineering</b> <ol style="list-style-type: none"><li>1. Internet of Things</li><li>2. Data Communications and Information Coding Theory</li><li>3. Service Oriented Architectures</li><li>4. Design of Secure Protocols</li><li>5. Network Coding</li></ol>
<b>POOL3- Information Security</b> <ol style="list-style-type: none"><li>1. Principles of Cyber Security</li><li>2. Computational Number Theory</li><li>3. Public Key Infrastructure and Trust Management</li><li>4. Information Security Analysis and Audit</li><li>5. Cloud and IoT Security</li><li>6. Web Security</li><li>7. Block Chain Architecture Design and Use Cases</li></ol>	<b>POOL4 - Data Science</b> <ol style="list-style-type: none"><li>1. Data Visualization</li><li>2. Statistical Foundations for Data Science</li><li>3. Mining Massive Data Sets</li><li>4. Medical Image Data Processing</li></ol>

  
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## SUGGESTED COURSES MINOR ENGINEERING IN CSE

**Note:**


1. Any THREE courses need to be studied from PART-A.
2. Any ONE course need to be studied from PART-B.
3. TWO, NPTEL courses of EIGHT week duration covering a total of 4 credits (offered by CSE Department only), Student can register at any time after the completion of II B.Tech. I Sem.
4. Students can pursue suggested MOOC Courses via NPTEL from II B.Tech II Sem and onwards, by prior information to the concern.

**Eligibility for Minor in CSE:**

PART A					
	Subject	L-T-P	Credits	Course available in NPTEL	NPTEL Link
1	Operating Systems	3-0-2	4	Operating Systems	<a href="https://onlinecourses.syam2.ac.in/cec21_cs20/preview">https://onlinecourses.syam2.ac.in/cec21_cs20/preview</a>
2	Data Structures and Algorithms	3-0-2	4	Data Structures Programming, Data Structures and Algorithms using Python	<a href="https://onlinecourses.syam2.ac.in/cec22_cs10/preview">https://onlinecourses.syam2.ac.in/cec22_cs10/preview</a> <a href="https://onlinecourses.nptel.ac.in/noc22_cs26/preview">https://onlinecourses.nptel.ac.in/noc22_cs26/preview</a>
3	Software Engineering	3-0-2	4	Software Engineering	<a href="https://onlinecourses.syam2.ac.in/cec21_cs21/preview">https://onlinecourses.syam2.ac.in/cec21_cs21/preview</a>
4	Computer Networks	3-0-2	4	Computer Networks	<a href="https://onlinecourses.syam2.ac.in/cec22_cs05/preview">https://onlinecourses.syam2.ac.in/cec22_cs05/preview</a>
5	Database Management Systems	3-0-2	4	Data Base Management System (noc22-cs51)	<a href="https://onlinecourses.nptel.ac.in/noc22_cs51/preview">https://onlinecourses.nptel.ac.in/noc22_cs51/preview</a>

  
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PART B					
S.No	Subject	L-T-P	Credits	Course available in NPTEL	NPTEL Link
1	Computational Thinking	4-0-0	4	Physics through Computational Thinking	<a href="https://onlinecourses.nptel.ac.in/noc22_ph12/preview">https://onlinecourses.nptel.ac.in/noc22_ph12/preview</a>
2	Object Oriented Programming through JAVA	3-0-2	4		
3	Artificial Intelligence	4-0-0	4	Artificial Intelligence: Knowledge Representation And Reasoning	<a href="https://onlinecourses.nptel.ac.in/noc22_cs56/preview">https://onlinecourses.nptel.ac.in/noc22_cs56/preview</a> <a href="https://onlinecourses.swayam2.ac.in/cec21_cs08/preview">https://onlinecourses.swayam2.ac.in/cec21_cs08/preview</a>
				(noc22-cs02), An Introduction to Artificial Intelligence (noc22-cs56), AI: Constraint Satisfaction (noc22-cs06)	
4	Unix and Shell Programming	3-0-2	4		
5	Cloud Computing	4-0-0	4	Cloud Computing and Distributed Systems (noc22-cs18), Cloud computing(noc22-cs20)	<a href="https://onlinecourses.nptel.ac.in/noc22_cs18/preview">https://onlinecourses.nptel.ac.in/noc22_cs18/preview</a> <a href="https://onlinecourses.nptel.ac.in/noc22_cs20/preview">https://onlinecourses.nptel.ac.in/noc22_cs20/preview</a>

  
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**I B. Tech I Semester**

S. No.	Code	Title	Hours			Credits
			L	T	P	
01	18CMMAT1010	Engineering Mathematics-I	3	1		4
02	18CSPHT1020	Engineering Physics	3	1		4
03	18CMCST1030	Programming for Problem Solving	3			3
04	18CMMEL1040	Engineering Graphics	1		4	3
05	18CSPHL1050	Engineering Physics Lab			3	1.5
06	18CMCSL1060	Programming for Problem Solving Lab			4	2
07	18CMMEL1070	Workshop/Manufacturing Practice	0		3	1.5
08	18CMCHN1080	Environmental Science	3			0
<b>Total</b>			<b>13</b>	<b>2</b>	<b>14</b>	<b>19</b>

**I B. Tech II Semester**

S. No.	Code	Title	Hours			Credits
			L	T	P	
01	18CMEGT2010	Technical English	3			3
02	18CMMAT2020	Engineering Mathematics-II	3	1		4
03	18CMCHT2030	Engineering Chemistry	3	1		4
04	18CMEET2040	Basic Electrical Engineering	3	1		4
05	18CMEGL2050	English Communication Skills Lab			2	1
06	18CMCHL2060	Engineering Chemistry Lab			3	1.5
07	18CMEEL2070	Basic Electrical Engineering Lab			3	1.5
08	18CMMSN2080	Indian Constitution, Professional Ethics & Human Rights	3			0
<b>Total</b>			<b>15</b>	<b>3</b>	<b>8</b>	<b>19</b>

  
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**II B. Tech I Semester**

S. No.	Code	Title	Hours			Credits
			L	T	P	
01	18CMMAT3010	Engineering Mathematics- III	3	1		4
02	18CSECT3020	Digital Electronics	3			3
03	18CSECT3030	Analog Electronic Circuits	3			3
04	18CSCST3040	Discrete Mathematics	3	1		4
05	18CSCST3050	Data Structures	3			3
06	18CSECL3060	Analog & Digital Electronics Lab			3	1.5
07	18CSCSL3070	IT Workshop Lab			3	1.5
08	18CSCSL3080	Data Structures Lab			3	1.5
<b>Total</b>			<b>15</b>	<b>2</b>	<b>9</b>	<b>21.5</b>

**II B. Tech II Semester**

S. No.	Code	Title	Hours			Credits
			L	T	P	
01	18CSECT4010	Signals & Systems	3			3
02	18CMCET4020	Engineering Mechanics	3			3
03	18CSCST4030	Computer Organization	3			3
04	18CSCST4040	Algorithm Design and Analysis	3			3
05	18CSCST4050	Java Programming	3			3
06	18CSCSL4060	Computer Organization Lab			3	1.5
07	18CSCSL4070	Algorithm Design and Analysis Lab			3	1.5
08	18CSCSL4080	Java Programming Lab			3	1.5
<b>Total</b>			<b>15</b>	<b>0</b>	<b>9</b>	<b>19.5</b>

  
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### III B. Tech I Semester

S. No.	Subject			Hours			C
	Code	Type	Title	L	T	P	
01	18CMMST5010	HS	Management Science	3			3
02	18CSCST5020	PC	Database Management Systems	3			3
03	18CSCST5030	PC	Operating Systems	3			3
04	18CSCSP504X	PE	Professional Elective-I	3			3
05	18CSXX505X	OE	Open Elective-I	3			3
06	18CSCSL5060	PC	Database Management Systems Lab			3	1.5
07	18CSCSL5070	PC	Operating Systems Lab			3	1.5
08	18CMAHS5080	SOC	Soft Skills & Aptitude Builder - 1	2			2
09	18CMBIN5090	MC	Biology for Engineers	2			0
<b>Total Credits</b>							<b>20</b>

### III B. Tech II Semester

S. No.	Subject			Hours			C
	Code	Type	Title	L	T	P	
01	18CSCST6010	HS	Engineering Economics & Financial Management	3			3
02	18CSCST6020	PC	Computer Networks	3			3
03	18CSCST6030	PC	Software Engineering	3			3
04	18CSCSP604X	PE	Professional Elective-II	3			3
05	18CSXXO605X	OE	Open Elective-II	3			3
06	18CMMST6060	PC	Automata theory and Compiler Design	3			3
07	18CSCSL6070	PC	Computer Networks Lab			3	1.5
08	18CSCSL6080	PC	Compiler Design Lab			3	1.5
09	18CMAHS6090	SOC	Soft Skills & Aptitude Builder - 2	2			2
<b>Total Credits</b>							<b>23</b>

  
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#### IV B. Tech I Semester

S. No.	Subject			Hours			C
	Code	Type	Title	L	T	P	
01	18CSCST7010	PC	Data Warehousing and Data Mining	3			3
02	18CSCSP702X	PE	Professional Elective-III	3			3
03	18CSCSP703X	PE	Professional Elective-IV	3			3
04	18CSCSP704X	PE	Professional Elective-V	3			3
05	18CSXXO705X	OE	Open Elective-III	3			3
06	18CSXXO706X	OE	Open Elective-IV	3			3
07	18CSCSL7070	PC	Internet of Things Lab			3	1.5
08	18CSCSL7080	PC	Data Warehousing and Data Mining Lab			3	1.5
09	18CSCSL7090	SOC	MEAN Stack Technologies			4	2
10	18CSCSR7100		Internship				3
<b>Total Credits</b>							<b>26</b>

#### IV B. Tech II Semester

S. No.	Code	Title	Hours			Credits
			L	T	P	
01	18CSCSR8010	Project Phase -II			24	12
<b>Total</b>					<b>24</b>	<b>12</b>


  
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### Open Elective Courses offered by CSE

S.No.	Subject Code	Name of the subject	L	T	P	Cr
1.	18XXCSOXXXX	Internet of Things	3	0	0	3
2.	18XXCSOXXXX	Block Chain	3	0	0	3
3.	18XXCSOXXXX	Quantum Computing	3	0	0	3
4.	18XXCSOXXXX	Virtual Reality	3	0	0	3
5.	18XXCSOXXXX	Data Structures through C	3	0	0	3
6.	18XXCSOXXXX	Designing Database Management Systems	3	0	0	3
7.	18XXCSOXXXX	Operating Systems Concepts	3	0	0	3
8.	18XXCSOXXXX	R Programming	3	0	0	3
9.	18XXCSOXXXX	Python Programming	3	0	0	3
10.	18XXCSOXXXX	Java Programming	3	0	0	3
11.	18XXCSOXXXX	App Technologies	3	0	0	3
12.	18XXCSOXXXX	Web Technologies	3	0	0	3
13.	18XXCSOXXXX	Artificial Intelligence	3	0	0	3

### Professional Electives

S.No.	Subject
A	Software Project Management
B	Network Protocols
C	Mobile Application Development
D	Unified Modeling Language
E	Cryptography & Network Security
F	Data Science
G	Design Patterns
H	Cyber Security
I	Artificial Intelligence
J	Software Testing
K	Mobile Computing
L	Machine Learning
M	Software Quality Assurance
N	Ad-hoc & Sensor Networks
O	Hadoop & Big Data

  
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2018-2019  
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# COURSE STRUCTURE SITE 18 REGULATIONS

**For**  
**Computer Science and Engineering**  
**(PG)**  
**With effective from the Academic**  
**Year**  
**2018-19**

S.No	Course Code	Name of the Subject	C	B	L
II SEMESTER					
1	18CE201	Research Methodology & IT	3	0	0
2	18CE202	Project Management	3	0	0
3	18CE203	Advanced Data Structures	3	0	0
4	18CE204	Advanced Project Work	3	0	0
Total Credits: 12					
III SEMESTER					
1	18CE205	Advanced Algorithms Lab	3	0	0
2	18CE206	Formal Logic with Automata	3	0	0
3	18CE207	Project Work	3	0	0
4	18CE208	Project Work	3	0	0
Total Credits: 12					
IV SEMESTER					
1	18CE209	Project Phase II	10	0	0
Total Credits: 10					

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## Computer Science and Engineering

### I SEMESTER

S.No	Course Code	Name of the Subject	L	P	C
1	18CSCS101	Research Methodology & IPR	3	-	3
2	18CSCS102	Science Mathematical Foundations of Computer	3	-	3
3	18CSCS103	Advanced Data Structures	3	-	3
4	18CSCS104	Artificial Intelligence	3	-	3
5	18CSCS105	Program Elective-I	3	-	3
6	18CSCS106	Program Elective-II	3	-	3
7	18CSCS151	Advanced Data Structures Lab		3	1.5
<b>Total Credits</b>					<b>19.5</b>

### II SEMESTER

S.No	Course Code	Name of the Subject	L	P	C
1	18CSCS201	Data Warehouse and Data Mining	3		3
2	18CSCS202	Advanced Algorithms	3		3
3	18CSCS203	Soft Computing	3		3
4	18CSCS204	Program Elective-III	3		3
5	18CSCS205	Program Elective-IV	3		3
6	18CSCS206	Open Elective-I	3		3
7	18CSCS207	Advanced Algorithms Lab		3	1.5
8	18CSCS2080	Term Paper with Seminar		-	3
<b>Total Credits</b>					<b>22.5</b>

### III SEMESTER

S.No	Course Code	Name of the Subject	L	P	C
1	18CSCS304	Program Elective-V (Self Learning)	-	-	3
2	18CSCS305	Internship with Seminar	-	-	4
3	18CSCS306	Project-I			5
<b>Total Credits</b>					<b>12</b>

135

### IV SEMESTER

S.No	Course Code	Name of the Subject	L	P	C
1	18CSCS306	Project Phase-II	-	-	10
<b>Total Credits</b>					<b>10</b>
<b>Total Credits: 19.5+22.5+12+10=64</b>					


  
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**Program Electives:**

Program Elective-1	18CSCS105A	Machine Learning
	18CSCS105B	Wireless Sensor Networks
	18CSCS105C	Intelligent Systems
	18CSCS106A	Data Science
Program Elective-2	18CSCS106B	Advanced Wireless and Mobile Networks
	18CSCS106C	Distributed Systems
	18CSCS204A	Data Preparation and Analysis
Program Elective-3	18CSCS204B	Secure Software Design & Enterprise Computing
	18CSCS204C	Computer Vision
	18CSCS205A	Human Computer Interaction
Program Elective-4	18CSCS205B	GPU Computing
	18CSCS205C	Digital Forensics
	18CSCS304A	Mobile Applications and Services
Program Elective-5	18CSCS304B	Compiler for HPC
	18CSCS304C	Optimization Techniques

**Open Elective:**

18CSCS206A	Business Analytics
18CSCS206B	Industrial Safety/ Advanced Data Structures
18CSCS206C	Operations Research/ Data Warehouse & Data Mining
18CSCS206D	Cost Management of Engineering Projects/ Distributed Systems
18CSCS206E	Composite Materials/ Machine Learning
18CSCS206F	Waste to Energy/ GPU Computing

  
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**sasi** INSTITUTE OF  
TECHNOLOGY &  
autonomous ENGINEERING

Accredited by **NAAC** with "**A**" Grade  
Recognised by **UGC** under section 2(f) & 12(B)  
Approved by **AICTE** - NEW Delhi  
Permanently Affiliated to **JNTUK, SBTET**  
Ranked as "**A**" Grade by Govt. of A.P.

Department of Computer Science & Engineering

**M. Tech I Semester**

S. No	Course Code	Courses	L	T	P	C
1	21CSCS101	<b>ProgramCore-1</b> Mathematical Foundations of Computer Science	3	0	0	3
2	21CSCS102	<b>ProgramCore-2</b> Advanced Data Structures & Algorithms	3	0	0	3
3	21CSCS103A 21CSCS103B 21CSCS103C	<b>ProgramElective-1</b> 1. Big Data Analytics 2. Digital Image Processing 3. Advanced Operating Systems	3	0	0	3
4	21CSCS104A 21CSCS104B 21CSCS104C	<b>ProgramElective-2</b> 1. Advanced Computer Networks 2. Internet of Things 3. Object Oriented Software Engineering	3	0	0	3
5	21CSCS105	<b>Research Methodology and IPR</b>	2		0	2
6	21CSCS106	<b>Laboratory-1</b> Advanced Data Structures & Algorithms Lab	0	0	4	2
7	21CSCS107	<b>Laboartory-2</b> Advanced Computing Lab	0	0	4	2
8	21CSCS108	<b>AuditCourse-1*</b>	2	0	0	0
<b>Total Credits</b>						18

**M. Tech II Semester**

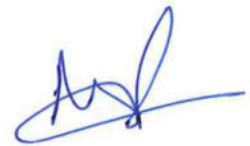
S. No	Course Code	Courses	L	T	P	C
1	21CSCS201	<b>ProgramCore-3</b> Machine learning	3	0	0	3
2	21CSCS202	<b>ProgramCore-4</b> MEAN Stack Technologies	3	0	0	3
3	21CSCS203A 21CSCS203B 21CSCS203C	<b>ProgramElective-3</b> 1. Advanced Databases and Mining 2. AdHoc & Sensor Networks 3. Soft Computing	3	0	0	3
4	21CSCS204A 21CSCS204B 21CSCS204C	<b>ProgramElective-4</b> 1. Cloud Computing 2. Principles of computer security 3. High Performance Computing	3	0	0	3
5	21CSCS205	<b>Laboratory-3</b> Machine Learning with python lab	0	0	4	2
6	21CSCS206	<b>Laboartory-4</b> MEAN Stack Technologies Lab	0	0	4	2
7	21CSCS207	<b>Mini Project with Seminar</b>	2	0	0	2
8	21CSCS208	<b>AuditCourse-2*</b>	2	0	0	0
<b>Total Credits</b>						18

**\*Student must choose anyone audit course listed below.**

**AuditCourse1&2:**

- |                                       |  |
|---------------------------------------|--|
| 1. English for Research Paper Writing | 5. Constitution of India                                     |
| 2. Disaster Management                | 6. Pedagogy Studies  |
| 3. Sanskrit for Technical Knowledge   | 7. Stress Management by Yoga                                 |
| 4. Value Education                    | 8. Personality Development through Life Enlightenment Skills |

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### M. Tech III Semester

S. No	Course Code	Courses	L	T	P	C
1	21CSCS301A 21CSCS301B 21CSCS301C	<b>Program Elective-5</b> 1. Deep Learning 2. Social Network Analysis 3. MOOCs-1 (NPTEL/SWAYAM) 12Week Program related to the programme which is not listed in the course structure	3	0	0	3
2	21XXXX302N  21XXXX302N	<b>Open Elective</b> 1. MOOCs-2 (NPTEL/SWAYAM)- Any 12Week Course on Engineering/Management/ Mathematics offered by other than parent department 2. Course offered by other departments in the college	3	0	0	3
3	21CSCS303	<b>Dissertation-I/Industrial Project#</b>	0	0	20	10
<b>Total Credits</b>						16

#Students going for Industrial Project/Thesis will complete these course through MOOCs

### M. Tech IV Semester

S.No	Course Code	Courses	L	T	P	C
1	21CSCS401	<b>Dissertation-II</b>	0	0	32	16
<b>Credits</b>						16
<b>Total</b>						16

#### Open Electives offered by the Department of CSE

1. Python Programming
2. Principles of Cyber Security
3. Internet of Things
4. Machine Learning
5. Digital forensics
6. Next Generation Databases

  
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**I B. Tech I Semester Course structure for the Academic Year 2020-21**

**Common for ME/CE/EEE/CST**

S.No	Subject Code	Subject Title	L	T	P	C
1.	18CMEGT1010	Technical English	3	0	0	3
2.	18CMMAT1020	Engineering Mathematics I	3	1	0	4
3.	18CMCHT1030	Engineering Chemistry	3	1	0	4
4.	18CMEET1040	Basic Electrical Engineering	3	1	0	4
5.	18CMEGL1050	English Communication skills lab	0	0	2	1
6.	18CMCHL1060	Engineering Chemistry Lab	0	0	3	1.5
7.	18CMEEL1070	Basic Electrical Engineering Lab	0	0	3	1.5
8.	18CMMSN1080	Constitution of India, professional ethics & human rights ( Non – Credit course)	3	0	0	0
<b>Total Credits</b>						<b>19</b>

**I B.Tech II Semester Course structure for the Academic Year 2020-21**

**Common for ME/CE/EEE/CST**

S. No	Subject Code	Subject Title	L	T	P	C
1.	18CMMAT2010	Engineering Mathematics II	3	1	0	4
2.	18CTPHT2020	Engineering Physics	3	1	0	4
3.	18CMCTT2030	Programming for problem solving	3	0	0	3
4.	18CMMEEL2040	Engineering Graphics	1	0	4	3
5.	18CTPHL2050	Engineering Physics lab	0	0	3	1.5
6.	18CMCTL2060	Programming for problem solving lab	0	0	4	2
7.	18CMMEEL2070	Work Shop/ Manufacturing practice	0	0	3	1.5
8.	18CMCHN2080	Environmental Science (Non- Credit course)	3	0	0	0
<b>Total Credits</b>						<b>19</b>



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Department of Computer Science & Technology

**II B. Tech I Semester Course structure for the Academic Year 2021-22**

S. No.	Subject			Hours			C
	Code	Type	Title	L	T	P	
01	18CMMAT3010	BS	Engineering Mathematics-III	3	1		4
02	18CTECT3020	ES	Digital Electronics	3			3
03	18CTECT3030	ES	Analog Electronic Circuits	3			3
04	18CTCTT3040	PC	Discrete Mathematics	3	1		4
05	18CTCTT3050	PC	Data Structures	3			3
06	18CTECL3060	ES	Analog & Digital Electronics Lab			3	1.5
07	18CTCTL3070	PC	IT Workshop Lab			3	1.5
08	18CTCTL3080	PC	Data Structures Lab			3	1.5
<b>Total</b>							<b>21.5</b>
<b>Credits</b>							

**II B. Tech II Semester Course structure for the Academic Year 2021-22**

S. No.	Subject			Hours			C
	Code	Type	Title	L	T	P	
01	18CTECT4010	ES	Signals & Systems	3			3
02	18CMCET4020	ES	Engineering Mechanics	3			3
03	18CTCTT4030	PC	Computer Organization	3			3
04	18CTCTT4040	PC	Algorithm Design and Analysis	3			3
05	18CTCTT4050	PC	Java Programming	3			3
06	18CTCTL4060	PC	Computer Organization Lab			3	1.5
07	18CTCTL4070	PC	Algorithm Design and Analysis Lab			3	1.5
08	18CTCTL4080	PC	Java Programming Lab			3	1.5
<b>Total</b>							<b>19.5</b>
<b>Credits</b>							



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### III B. Tech I Semester Course structure for the Academic Year 2022-23

S. No.	Subject			Hours			C
	Code	Type	Title	L	T	P	
01	18CMMST5010	HS	Management Science	3			3
02	18CTCTT5020	PC	Database Management Systems	3			3
03	18CTCTT5030	PC	Operating Systems	3			3
04	18CTCTT504X	PE	Professional Elective-I	3			3
05	18CTXXT505X	OE	Open Elective-I	3			3
06	18CTCTL5060	PC	Database Management Systems Lab			3	1.5
07	18CTCTL5070	PC	Operating Systems Lab			3	1.5
08	18CTCTL5090	SOC	Soft Skills & Aptitude Builder - 1			4	2
09	18CMBIN5100	MC	Biology for Engineers	2			0
<b>Total</b>							<b>20</b>

**Credits**

#### Professional Elective-I

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18CTCTP504A	Object Oriented Analysis & Design through UML	3	0	0	3
2	18CTCTP504B	Mobile Application Development	3	0	0	3
3	18CTCTP504C	Machine Learning	3	0	0	3

#### Open Elective-I

S.No.	Subject Code	Name of the Subject	L	T	P	Cr
1	18XXCTOX0XA	Internet of Things	3	0	0	3
2	18XXCTOX0XB	Block Chain	3	0	0	3
3	18XXCTOX0XC	Quantum Computing	3	0	0	3



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### III B. Tech II Semester Course structure for the Academic Year 2022-23

S. No.	Code	Type	Subject Title	Hours				C
				L	T	P	C	
01	18CTCTT6010	PC	Data Warehousing and Data Mining	3			3	
02	18CTCTT6020	PC	Computer Networks	3			3	
03	18CTCTT6030	PC	Software Engineering	3			3	
04	18CTCTT604X	PE	Professional Elective-II	3			3	
05	18CTXXT605X	OE	Open Elective-II	3			3	
06	18CMMST6060	HS	Engineering Economics & Financial Management	3			3	
07	18CTCTL6070	PC	Computer Networks Lab			3	1.5	
08	18CTCTL6080	PC	Data Warehousing and Data Mining Lab			3	1.5	
09	18CMMAT6090	SOC	Soft Skills & Aptitude Builder - 2			4	2	
<b>Total</b>							<b>23</b>	
<b>Credits</b>								

#### Professional Elective-II

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18CTCTP604D	Software Testing	3	0	0	3
2	18CTCTP604E	Software Project Management	3	0	0	3
3	18CTCTP604F	Artificial Intelligence	3	0	0	3

#### Open Elective-II

S.No.	Subject Code	Name of the Subject	L	T	P	Cr
1	18XXCTOX0XD	Virtual Reality	3	0	0	3
2	18XXCTOX0XE	Data Structures through C	3	0	0	3
3	18XXCTOX0XF	Designing Database Management Systems	3	0	0	3



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#### IV B. Tech I Semester Course structure for the Academic Year 2023-24

S. No.	Subject			Hours			C
	Code	Type	Title	L	T	P	
01	18CTCTT7010	PC	Data Analytics	3			3
02	18CTCTP702X	PE	Professional Elective-III	3			3
03	18CTCTP703X	PE	Professional Elective-IV	3			3
04	18CTCTP704X	PE	Professional Elective-V	3			3
05	18CTXXT705X	OE	Open Elective-III	3			3
06	18CTXXT706X	OE	Open Elective-IV	3			3
07	18CTCTL7070	PC	Internet of Things Lab			3	1.5
08	18CTCTL7080	PC	Data Analytics Lab			3	1.5
09	18CTCTL7090	SOC	MEAN Stack Technologies			4	2
10	18CTCTR7100		Internship				3
<b>Total Credits</b>							<b>26</b>

#### Professional Elective-III

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18CTCTP604G	Design Patterns	3	0	0	3
2	18CTCTP604H	Cyber Security	3	0	0	3
3	18CTCTP604I	Block-Chain Technologies	3	0	0	3

#### Professional Elective-IV

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18CTCTP604J	Software Quality Assurance	3	0	0	3
2	18CTCTP604K	Ad-hoc & Sensor Networks	3	0	0	3
3	18CTCTP604L	Neural Networks and Soft Computing	3	0	0	3

#### Professional Elective-V

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18CTCTP604M	Compiler Design	3	0	0	3
2	18CTCTP604N	Cryptography & Network Security	3	0	0	3
3	18CTCTP604O	Computer Vision	3	0	0	3

#### Open Elective-III

S.No.	Subject Code	Name of the Subject	L	T	P	Cr
1	18XXCTOX0XG	Operating Systems Concepts	3	0	0	3
2	18XXCTOX0XH	R Programming	3	0	0	3
3	18XXCTOX0XI	Python Programming	3	0	0	3



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### Open Elective-IV

S.No.	Subject Code	Name of the Subject	L	T	P	Cr
1	18XXCTOX0XJ	Java Programming	3	0	0	3
2	18XXCTOX0XK	App Technologies	3	0	0	3
3	18XXCTOX0XL	Web Technologies	3	0	0	3
4	18XXCTOX0XM	Artificial Intelligence	3	0	0	3

### IV B. Tech II Semester Course structure for the Academic Year 2023-24

S. No.	Subject			Hours			
	Code	Type	Title	L	T	P	C
01	18CTCTR8010	PROJ	Project			12	12
				12			

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Head of the Department

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**I B. Tech I Semester Course structure for the Academic Year 2021-2022**

S.No	Subject Code	Course	Hours			Credits
			L	T	P	
1	21CMMAT1010	Engineering Mathematics – I	3	0	0	3
2	21CTPHT1020	Engineering Physics	3	0	0	3
3	21CMCHT1030	Engineering Chemistry	3	0	0	3
4	21CMCTT1040	Programming for Problem Solving	3	0	0	3
5	21CTMEL1050	Computer Aided Engineering Graphics	2	0	2	3
6	21CTPHL1060	Engineering Physics Lab	0	0	3	1.5
7	21CMCHL1070	Engineering Chemistry Lab	0	0	3	1.5
8	21CMCTL1080	Programming for Problem Solving Lab	0	0	3	1.5
9	21CMESN1090	Constitution of India, Professional Ethics & Human Rights	2	0	0	0
<b>Total</b>						<b>19.5</b>
<b>Credits</b>						

**I B. Tech II Semester Course structure for the Academic Year 2021-2022**

S. No	Subject Code	Course	Hours			Credits
			L	T	P	
1	21CMEGT2010	Technical English	3	0	0	3
2	21CMMAT2020	Engineering Mathematics - II	3	0	0	3
3	21CMEET2030	Basic Electrical Engineering	3	0	0	3
4	21CMCTT2040	Python Programming	3	0	0	3
5	21CTCTT2050	Data Structures	3	0	0	3
6	21CMEGL2060	English Communication Skills Lab	0	0	3	1.5
7	21CMEEL2070	Basic Electrical Engineering Lab	0	0	3	1.5
8	21CTCTL2080	Data Structures Lab	0	0	3	1.5
9	21CMMSN2090	Environmental Science	2	0	0	0
<b>Total Credits</b>						<b>19.5</b>



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### II B. Tech I Semester Course structure for the Academic Year 2022-2023

S. No	Code	Course Title	Hours			Credits
			L	T	P	
1	21CMMAT3010	Probability Distributions & Statistical Methods	3	0	0	3
2	21CTECT3020	Analog & Digital Electronics	3	0	0	3
3	21CTCTT3030	Computer Organization	3	0	0	3
4	21CTCTT3040	Java Programming	3	0	0	3
5	21CTCTT3050	Data Base Management Systems	3	0	0	3
6	21CTCTL3060	Analog & Digital Electronics Lab	0	0	3	1.5
7	21CTCTL3070	Java Programming Lab	0	0	3	1.5
8	21CTCTL3080	Data Base Management Systems Lab	0	0	3	1.5
9	21CTCTS3090	Data Science Using Python	0	0	3	2
10	21CTMSN3100	Biology for Engineers	2	0	0	0
<b>Total credits</b>						<b>21.5</b>

### II B. Tech II Semester Course structure for the Academic Year 2022-2023

S.No	Code	Course Title	Hours			Credits
			L	T	P	
1	21CMMAT4010	Discrete Mathematics	3	0	0	3
2	21CTMST4020	Engineering Economics & Financial Management	3	0	0	3
3	21CTCTT4030	Operating systems	3	0	0	3
4	21CTCTT4040	Design and Analysis of Algorithms	3	0	0	3
5	21CTCTT4050	Software Engineering	3	0	0	3
6	21CTCTL4060	Operating systems Lab	0	0	3	1.5
7	21CTCTL4070	Design and Analysis of Algorithms Lab	0	0	3	1.5
8	21CTCTL4080	Software Engineering Lab	0	0	3	1.5
9	21CTCTS4090	MEAN STACK Technologies	2	0	0	2
<b>Total</b>						<b>21.5</b>
<b>credits</b>						



**III B. Tech I Semester Course structure for the Academic Year 2023-2024**

S. No	Category	Code	Course Title	Hours			Credits
				L	T	P	
1	PC	21CTCTT5010	Automata Theory & Compiler Design	3	0	0	3
2	PC	21CTCTT5020	Computer Networks	3	0	0	3
3	PC	21CTCTT5030	Data Warehousing and Mining	3	0	0	3
4	PE-I	21CTCTP504X	Professional Elective – I	3	0	0	3
5	OE-I	21CTXXO505X	Open Elective – I	3	0	0	3
6	PC	21CTCTL5060	Computer Networks lab	0	0	3	1.5
7	PC	21CTCTL5070	Data Warehousing and Mining Lab	0	0	3	1.5
8	SOC	21CTCTS5080	Soft Skills & Aptitude Builder – I	1	0	2	2
9	MC	21CTCTN5090	Intellectual Property Rights	2	0	0	0
<b>Summer Internship 2 Months (Mandatory) after second year (to be evaluated during V semester)</b>				0	0	0	1.5
<b>Total credits</b>							<b>21.5</b>
<b>Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)</b>				4	0	0	4

Professional Elective – I		
S.No.	Subject Code	Course Title
1.	21CTCTP504A	Software Testing
2.	21CTCTP504B	Artificial Intelligence
3.	21CTCTP504C	Distributed Systems
4.	21CTCTP504D	Software Project Management

**Open Elective-I**

S.No.	Subject Code	Name of the Subject	L	T	P	Cr
1	21XXCTOX0XA	Internet of Things	3	0	0	3
2	21XXCTOX0XB	Block Chain	3	0	0	3
3	21XXCTOX0XC	Quantum Computing	3	0	0	3



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**III B. Tech II Semester Course structure for the Academic Year 2023-2024**

S. No	Category	Code	Course Title	Hours			Credits
				L	T	P	
1	PC	21CTCTT6010	Machine Learning	3	0	0	3
2	PC	21CTCTT6020	Cryptography & Network Security	3	0	0	3
3	PC	21CTCTT6030	Object Oriented Analysis and Design	3	0	0	3
4	PE-I	21CTCTP604X	Professional Elective - II	3	0	0	3
5	OE-I	21CTXXO605X	Open Elective Course - II	3	0	0	3
6	PC	21CTCTL6060	Machine Learning Lab	0	0	3	1.5
7	PC	21CTCTL6070	Cryptography & Network Security Lab	0	0	3	1.5
	PC	21CTCTL6080	Object Oriented Analysis and Design Lab				
8	SOC	21CTCTS6090	Soft Skills & Aptitude Builder - 2	1	0	2	2
9	MC	21CTCTN6100	Mandatory course (AICTE suggested)	2	0	0	0
<b>Total credits</b>							<b>21.5</b>
<b>Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)</b>				<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>

Professional Elective - II		
S.No	Code	Course Title
1.	21CTCTP604A	Software Quality Assurance
2.	21CTCTP604B	Cyber Security
3.	21CTCTP604C	Design Patterns
4.	21CTCTP604D	Block-chain Technology

**Open Elective-II**

S.No.	Subject Code	Name of the Subject	L	T	P	Cr
1	21XXCTOX0XD	Virtual Reality	3	0	0	3
2	21XXCTOX0XE	Data Structures through C	3	0	0	3
3	21XXCTOX0XF	Designing Database Management Systems	3	0	0	3



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**Eligibility for Minor in CST:**

PART A					
S.No	Subject	L-T-P	Credits	Course available in NPTEL	NPTEL Link
1	Operating Systems 21XXCTMX25	3-0-2	4	Operating Systems	<a href="https://onlinecourses.swayam2.ac.in/ccc21_cs20/preview">https://onlinecourses.swayam2.ac.in/ccc21_cs20/preview</a>
2	Data Structures and Algorithms 21XXCTMX12	3-0-2	4	Data Structures Programming, Data Structures and Algorithms using Python	<a href="https://onlinecourses.swayam2.ac.in/ccc22_cs10/preview">https://onlinecourses.swayam2.ac.in/ccc22_cs10/preview</a> <a href="https://onlinecourses.nptel.ac.in/noc22_cs26/preview">https://onlinecourses.nptel.ac.in/noc22_cs26/preview</a>
3	Software Engineering 21XXCTMX13	3-0-2	4	Software Engineering	<a href="https://onlinecourses.swayam2.ac.in/ccc21_cs21/preview">https://onlinecourses.swayam2.ac.in/ccc21_cs21/preview</a>
4	Computer Networks 21XXCTMX14	3-0-2	4	Computer Networks	<a href="https://onlinecourses.swayam2.ac.in/ccc22_cs05/preview">https://onlinecourses.swayam2.ac.in/ccc22_cs05/preview</a>
5	Database Management Systems 21XXCTMX15	3-0-2	4	Data Base Management System (noc22-cs51)	<a href="https://onlinecourses.nptel.ac.in/noc22_cs51/preview">https://onlinecourses.nptel.ac.in/noc22_cs51/preview</a>



PART B					
S.No	Subject	L-T-P	Credits	Course available in NPTEL	NPTEL Link
1	Computational Thinking 21XXCTMX21	4-0-0	4	Physics through Computational Thinking	<a href="https://onlinecourses.nptel.ac.in/noc22_ph12/preview">https://onlinecourses.nptel.ac.in/noc22_ph12/preview</a>
2	Object Oriented Programming through JAVA 21XXCTMX22	3-0-2	4		
3	Artificial Intelligence 21XXCTMX23	4-0-0	4	Artificial Intelligence: Knowledge Representation And Reasoning(noc22-cs02), An Introduction to Artificial Intelligence (noc22-cs56), AI: Constraint Satisfaction (noc22-cs06)	1. <a href="https://onlinecourses.nptel.ac.in/noc22_cs56/preview">https://onlinecourses.nptel.ac.in/noc22_cs56/preview</a> 2. <a href="https://onlinecourses.swayam2.ac.in/ccc21_cs08/preview">https://onlinecourses.swayam2.ac.in/ccc21_cs08/preview</a>
4	Unix and Shell Programming 21XXCTMX24	3-0-2	4		
5	Cloud Computing 21XXCTMX25	4-0-0	4	Cloud Computing and Distributed Systems (noc22-cs18), Cloud computing(noc22-cs20)	1. <a href="https://onlinecourses.nptel.ac.in/noc22_cs18/preview">https://onlinecourses.nptel.ac.in/noc22_cs18/preview</a> 2. <a href="https://onlinecourses.nptel.ac.in/noc22_cs20/preview">https://onlinecourses.nptel.ac.in/noc22_cs20/preview</a>

*P. Prasad*

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Course Structure for the Academic Year 2022-2023

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**I B. Tech I Semester**

S. No.	Code	Title	Hours			Credits
			L	T	P	
01	18CMMAT1010	Engineering Mathematics-I	3	1		4
02	18ITPHT1020	Engineering Physics	3	1		4
03	18CMCST1030	Programming for Problem Solving	3			3
04	18CMMEL1040	Engineering Graphics	1		4	3
05	18ITPHL1050	Engineering Physics Lab			3	1.5
06	18CMCSL1060	Programming for Problem Solving Lab			4	2
07	18CMMEL1070	Workshop/Manufacturing Practice	0		3	1.5
08	18CMCHN1080	Environmental Science	3			0
<b>Total</b>			<b>13</b>	<b>2</b>	<b>14</b>	<b>19</b>

**I B. Tech II Semester**

S. No.	Code	Title	Hours			Credits
			L	T	P	
01	18CMEGT2010	Technical English	3			3
02	18CMMAT2020	Engineering Mathematics-II	3	1		4
03	18CMCHT2030	Engineering Chemistry	3	1		4
04	18CMEET2040	Basic Electrical Engineering	3	1		4
05	18CMEGL2050	English Communication Skills Lab			2	1
06	18CMCHL2060	Engineering Chemistry Lab			3	1.5
07	18CMEEL2070	Basic Electrical Engineering Lab			3	1.5
08	18CMMSN2080	Indian Constitution, Professional Ethics & Human Rights	3			0
<b>Total</b>			<b>15</b>	<b>3</b>	<b>8</b>	<b>19</b>

### II B. Tech I Semester

S. No.	Code	Title	Hours			Credits
			L	T	P	
01	18CMMAT3010	Engineering Mathematics- III	3	1		4
02	18ITECT3020	Digital Electronics	3			3
03	18ITECT3030	Analog Electronic Circuits	3			3
04	18ITITT3040	Discrete Mathematics	3	1		4
05	18ITITT3050	Data Structures	3			3
06	18ITECL3060	Analog & Digital Electronics Lab			3	1.5
07	18ITITL3070	IT Workshop Lab			3	1.5
08	18ITITL3080	Data Structures Lab			3	1.5
<b>Total</b>			<b>15</b>	<b>2</b>	<b>9</b>	<b>21.5</b>

### II B. Tech II Semester

S. No.	Code	Title	Hours			Credits
			L	T	P	
01	18ITECT4010	Signals & Systems	3			3
02	18CMCET4020	Engineering Mechanics	3			3
03	18ITITT4030	Computer Organization	3			3
04	18ITITT4040	Algorithm Design and Analysis	3			3
05	18ITITT4050	Java Programming	3			3
06	18ITITL4060	Computer Organization Lab			3	1.5
07	18ITITL4070	Algorithm Design and AnalysisLab			3	1.5
08	18ITITL4080	Java Programming Lab			3	1.5
<b>Total</b>			<b>15</b>	<b>0</b>	<b>9</b>	<b>19.5</b>

### III B. Tech I Semester

S. No.	Code	Title	Hours			Credits
			L	T	P	
01	18CMMST5010	Management Science	3			3
02	18ITITT5020	Data Base Management Systems	3			3
03	18ITITT5030	Operating Systems	3			3
04	18ITITP504X	Professional Elective-I	3			3
05	18ITXXO505X	Open Elective-I	3			3
06	18ITITL5060	Data Base Management Systems Lab			3	1.5
07	18ITITL5070	Operating Systems Lab			3	1.5
08	18CMAHS5080	Soft Skills & Aptitude Builder - 1	2			2
09	18CMBIN5090	Biology for Engineers	2			0
Total			19	0	6	20

### III B. Tech II Semester

S. No.	Code	Title	Hours			Credits
			L	T	P	
01	18CMMST6010	Engineering Economics & Financial Management	3			3
02	18ITITT6020	Data Warehousing and Data Mining	3			3
03	18ITITT6030	Computer Networks	3			3
04	18ITITT6040	Software Engineering	3			3
05	18ITITP605X	Professional Elective-II	3			3
06	18ITXXO606X	Open Elective-II	3			3
07	18ITITL6070	Software Engineering Lab			3	1.5
08	18ITITL6080	Data Mining using Python Lab			3	1.5
09	18CMAHS6090	Soft Skills & Aptitude Builder - 2	2			2
Total			20		6	23

**IV B. Tech I Semester**

w	Code	Title	Hours			Credits
			L	T	P	
01	18ITITT7010	Machine Learning	3			3
02	18ITITP702X	Professional Elective-III	3			3
03	18ITITP703X	Professional Elective-IV	3			3
04	18ITITP704X	Professional Elective-V	3			3
05	18ITXXO705X	Open Elective-III	3			3
06	18ITXXO706X	Open Elective-IV	3			3
07	18ITITL7070	Machine Learning Lab			3	1.5
08	18ITITL7080	Object Oriented Analysis and Design Lab			3	1.5
09	18ITITS7090	MEAN Stack Technologies			4	2
10	18ITITR7100	Internship				3
<b>Total</b>			<b>18</b>		<b>10</b>	<b>26</b>

**IV B. Tech II Semester**

S. No.	Code	Title	Hours			Credits
			L	T	P	
01	18ITITR8010	Project Phase -II			24	12
<b>Total</b>					<b>24</b>	<b>12</b>

Program Elective-I	
18ITITP504A	UI Design
18ITITP504B	Artificial Intelligence
Program Elective-II	
18ITITP605A	R Programming
18ITITP605B	Software Quality Assurance
Program Elective-III	
18ITITP702A	Distributed Databases
18ITITP702B	Big Data Analytics
Program Elective-IV	
18ITITP703A	Software Project Management
18ITITP703B	Software Testing Methodologies
Program Elective-V	
18ITITP704A	Cryptography & Network Security
18ITITP704B	Cloud Computing

#### Open Elective Courses offered by IT

S.No.	Subject Code	Name of the subject	L	T	P	Cr
1.	18XXIT0XXXX	Internet of Things	3	0	0	3
2.	18XXIT0XXXX	Block Chain	3	0	0	3
3.	18XXIT0XXXX	Quantum Computing	3	0	0	3
4.	18XXIT0XXXX	Virtual Reality	3	0	0	3
5.	18XXIT0XXXX	Data Structures through C	3	0	0	3
6.	18XXIT0XXXX	Designing Database Management Systems	3	0	0	3
7.	18XXIT0XXXX	Operating Systems Concepts	3	0	0	3
8.	18XXIT0XXXX	R Programming	3	0	0	3
9.	18XXIT0XXXX	Python Programming	3	0	0	3
10.	18XXIT0XXXX	Java Programming	3	0	0	3
11.	18XXIT0XXXX	App Technologies	3	0	0	3
12.	18XXIT0XXXX	Web Technologies	3	0	0	3
13.	18XXIT0XXXX	Artificial Intelligence	3	0	0	3

*K. Suresh*

Head of the Department  
Head of the Department  
Department of Information Technology  
Sasi Institute of Technology & Engineering  
TADEPALLIGUDEM, W.G.Dt., A.P.



**sasi** INSTITUTE OF  
autonomous TECHNOLOGY &  
ENGINEERING

Accredited by **NAAC** with **"A"** Grade  
Recognised by **UGC** under section 2(f) & 12(B)  
Approved by **AICTE** - NEW Delhi  
Permanently Affiliated to **JNTUK, SRTET**  
Ranked as **"A"** Grade by Govt. of A.P.

Department of Information Technology

**Course Structure for the Academic Year 2022-23**  
**Regulation SITE21**

**I B. Tech I Semester**

S.No	SubjectCode	Course	Hours			Credits
			L	T	P	
1	21CMEGT1010	Technical English	3	0	0	3
2	21CMMAT1020	Engineering Mathematics - I	3	0	0	3
3	21CMEET1030	Basic Electrical Engineering	3	0	0	3
4	21CMCST1040	Programming for Problem Solving	3	0	0	3
5	21ITMEL1050	Computer Aided Engineering Graphics	2	0	2	3
6	21CMEGL1060	English Communication Skills Lab	0	0	3	1.5
7	21CMEEL1070	Basic Electrical Engineering Lab	0	0	3	1.5
8	21CMCSL1080	Programming for Problem Solving Lab	0	0	3	1.5
9	21CMESN1090	Environmental Science	2	0	0	0
<b>Total</b>			<b>16</b>	<b>0</b>	<b>11</b>	<b>19.5</b>

**I B. Tech II Semester**

S. No	Subject Code	Course	Hours			Credits
			L	T	P	
1	21CMMAT2010	Engineering Mathematics - II	3	0	0	3
2	21ITPHT2020	Engineering Physics	3	0	0	3
3	21CMCHT2030	Engineering Chemistry	3	0	0	3
4	21CMCST2040	Python Programming	1	0	4	3
5	21ITITT2050	Data Structures	3	0	0	3
6	21ITPHL2060	Engineering Physics Lab	0	0	3	1.5
7	21CMCHL2070	Engineering Chemistry Lab	0	0	3	1.5
8	21ITITL2080	Data Structures Lab	0	0	3	1.5
9	21CMMSN2090	Constitution of India, Professional Ethics & Human Rights	2	0	0	0
<b>Total</b>			<b>16</b>	<b>0</b>	<b>11</b>	<b>19.5</b>

### II B. Tech I Semester

S. No	Code	Course Title	Hours			Credits
			L	T	P	
1	21CMMAT3010	Probability Distributions & Statistical Methods	3	0	0	3
2	21ITECT3020	Analog & Digital Electronics	3	0	0	3
3	21ITITT3030	Computer Organization	3	0	0	3
4	21ITITT3040	Java Programming	3	0	0	3
5	21ITITT3050	Data Base Management Systems	3	0	0	3
6	21ITECL3060	Analog & Digital Electronics Lab	0	0	3	1.5
7	21ITITL3070	Java Programming Lab	0	0	3	1.5
8	21ITITL3080	Data Base Management Systems Lab	0	0	3	1.5
9	21ITITS3090	Data Science Using Python	0	0	3	2
10	21CMBIN3100	Biology for Engineers	2	0	0	0
<b>Total</b>			<b>17</b>	<b>0</b>	<b>12</b>	<b>21.5</b>

### II B.Tech II Semester

S.No	Code	Course Title	Hours			Credits
			L	T	P	
1	21CMMAT4010	Discrete Mathematics	3	0	0	3
2	21CMMST4020	Engineering Economics & Financial Management	3	0	0	3
3	21ITITT4030	Operating systems	3	0	0	3
4	21ITITT4040	Design and Analysis of Algorithms	3	0	0	3
5	21ITITT4050	Software Engineering	3	0	0	3
6	21ITITL4060	Operating systems Lab	0	0	3	1.5
7	21ITITL4070	Design and Analysis of Algorithms Lab	0	0	3	1.5
8	21ITITL4080	Software Engineering Lab	0	0	3	1.5
9	21ITITS4090	MEAN Stack Technologies	2	0	0	2
<b>Total</b>			<b>17</b>	<b>0</b>	<b>9</b>	<b>21.5</b>

### III B. Tech I Semester

S. No	Category	Code	Course Title	Hours			Credits
				L	T	P	
1	PC	21ITIT5010	Automata Theory & Compiler Design	3	0	0	3
2	PC	21ITIT5020	Computer Networks	3	0	0	3
3	PC	21ITIT5030	Data Warehousing and Data Mining	3	0	0	3
4	PE-I	21ITITP504X	Professional Elective -I	3	0	0	3
5	OE-I	21ITXXO505X	Open Elective - I	3	0	0	3
6	PC	21ITITL5060	Computer Networks lab	0	0	3	1.5
7	PC	21ITITL5070	Data Mining using Python Lab	0	0	3	1.5
8	SOC		<b>Skill Oriented Course</b>	1	0	2	2
9	MC	21ITITN5090	Mandatory course (AICTE suggested)	2	0	0	0
<b>Summer Internship 2 Months (Mandatory) after second year (to be evaluated during V semester)</b>				0	0	0	1.5
<b>Total credits</b>							<b>21.5</b>
<b>Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)</b>				4	0	0	4

Category	Credits
Professional core Courses	12
Professional Elective courses	3
Open Elective Course	3
Skill oriented course	2
Summer Internship	1.5
<b>Total Credits</b>	<b>21.5</b>

Professional Elective - I	
Code	Course Title
21ITITP504A	Artificial Intelligence
21ITITP504B	Fundamentals of Data Science
21ITITP504C	Mobile Application Development

### III B. Tech II Semester

S. No	Category	Code	Course Title	Hours			Credits
				L	T	P	
1	PC	21ITIT6010	Machine Learning	3	0	0	3
2	PC	21ITIT6020	Big Data Analytics	3	0	0	3
3	PC	21ITIT6030	Object Oriented Analysis and Design	3	0	0	3
4	PE-I	21ITITP604X	Professional Elective -II	3	0	0	3
5	OE-I	21ITXXO605X	Open Elective-II	3	0	0	3
6	PC	21ITITL6060	Machine Learning Lab	0	0	3	1.5
7	PC	21ITITL6070	OOAD Lab	0	0	3	1.5
8	PC	21ITITL6080	R Programming Lab	0	0	3	1.5
9	SOC		Skill Oriented Course	1	0	2	2
10	MC	21CSCSN6090	Mandatory course (AICTE suggested)	2	0	0	0
<b>Total credits</b>							<b>21.5</b>
<b>Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)</b>				<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>

Category	Credits
Professional core Courses	13.5
Professional Elective courses	3
Open Elective Course	3
Skill oriented course	2
<b>Total Credits</b>	<b>21.5</b>

Professional Elective - II	
Code	Course Title
21ITITP604A	Computer Graphics
21ITITP604B	User Interface
21ITITP604C	R Programming

Course Structure for IV B. Tech IT Under the Regulations of SITE-21						
Semester -VII						
S.No	Subject Code	Name of the subject	L	T	P	C
1	21ETETP701X	Professional Elective -III	3	0	0	3
2	21ETETP702X	Professional Elective -IV	3	0	0	3
3	21ETETP703X	Professional Elective -V	3	0	0	3
4	21ETXXO704X	Open Elective - III	3	0	0	3
5	21ETXXO705X	Open Elective - IV	3	0	0	3
6	21ETXXO706X	Open Elective - V	3	0	0	3
7	21CMAHS7070	Skill advanced course/ soft skill course	1	0	2	2
8	21ETETR7080	Summer Internship 2 months after Third year (To be evaluated during VII sem)	3	0	0	3
<b>Total Semester Credits</b>						<b>23</b>
9		Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)	4	0	0	4

Course Structure for IV B. Tech IT Under the Regulations of SITE-21						
Semester -VIII						
S. No	Subject Code	Name of the subject	L	T	P	C
1	XXXXXX	Project work, seminar and internship in industry	0	0	24	12
<b>Total Semester Credits</b>						<b>12</b>

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**OPEN ELECTIVES COURSES OFFERED BY IT  
TO  
OTHER DEPARTMENTS**

**V SEM OPEN ELECTIVE COURSES**


S. No	Subject Code	Name of the subject	L	T	P	CREDITS
1.	21XXITO50XA	Operating Systems	3	0	0	3
2.	21XXITO50XB	Data Structures	3	0	0	3
3.	21XXITO50XC	Designing Database Management Systems	3	0	0	3

**VI SEM OPEN ELECTIVE COURSES**

S. No	Subject Code	Name of the subject	L	T	P	CREDITS
1.	21XXITO60XA	R Programming	3	0	0	3
2.	21XXITO60XB	Software Engineering	3	0	0	3
3.	21XXITO60XC	Mobile Application Development	3	0	0	3

**VII SEM OPEN ELECTIVE COURSES**

S. No	Subject Code	Name of the subject	L	T	P	CREDITS
1.	21XXITO70XA	Open Source Software	3	0	0	3
2.	21XXITO70XB	Cloud Computing	3	0	0	3
3.	21XXITO70XC	E Commerce	3	0	0	3

  
 Head of the Department  
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**I -B. Tech I- Semester Course structure for the  
Academic Year 2020-2021  
Common for ME/CE/EEE/ECT/CST**

S. No.	Subject Code	Subject title	L	T	P	C
1	18CMEGT1010	Technical English	3	0	0	3
2	18CMMAT1020	Engineering Mathematics-I	3	1	0	4
3	18CMCHT1030	Engineering Chemistry	3	1	0	4
4	18CMEET1040	Basic Electrical Engineering	3	1	0	4
5	18CMEGL1050	English Communication skills lab	0	0	2	1
6	18CMCHL1060	Engineering Chemistry Lab	0	0	3	1.5
7	18CMEEL1070	Basic Electrical Engineering Lab	0	0	3	1.5
8	18CMEEL1080	Constitution of India, professional ethics & human rights (Non - Credit course)	3	0	0	--
<b>Total Credits</b>						<b>19</b>

**I B. Tech II Semester Course structure for the  
Academic Year 2020-2021  
Common for ME/CE/EEE/ECT/CST**

S. No.	Subject Code	Subject title	L	T	P	C
1	18CMMAT2010	Engineering Mathematics II	3	1	0	4
2	18EEPHT2020, 18MEPHT2020, 18CEPHT2020	Engineering Physics	3	1	0	4
3	18CMCST2030	Programming for problem solving	3	0	0	3
4	18CMMEEL2040	Engineering Graphics	1	0	4	3
5	18EEPHL2050, 18MEPHL2050, 18CEPHL2050	Engineering Physics Lab	0	0	3	1.5
6	18CMCSL2060	Programming for problem solving lab	0	0	4	2
7	18CMMEEL2070	Work Shop/ Manufacturing practice	0	0	3	1.5
8	18CMMEEL2080	Environmental Science (Non - Credit course)	3	0	0	---
<b>Total Credits</b>						<b>19</b>

**Course Structure for  
II-B.Tech. (Electronics and Communication Technology)  
Semester III (Second year)**

S.No	Course Code	Course Title	L	T	P	C
1	18CMMAT3010	Engineering Mathematics-III	3	1	0	4
2	18ETETT3020	Electronic Devices	3	0	0	3
3	18ETETT3030	Network Theory	3	0	0	3
4	18ETETT3040	Signals & Systems	3	0	0	3
5	18ETETT3050	Probability & Stochastic Processes	3	0	0	3
6	18ETETL3060	Electronic Devices Lab	0	0	3	1.5
7	18ETETL3070	Network Theory Lab	0	0	3	1.5
8	18ETETN3080	Pulse & Digital Circuits (MC)	3	0	0	0
Total Credits						19

**Semester IV (Second year)**

S.No	Course Code	Course Title	L	T	P	C
1	18ETETT4010	Digital System Design	3	0	0	3
2	18CMMET4020	Engineering Mechanics	3	1	0	4
3	18ETETT4030	Electro Magnetic Waves & Transmission Lines	3	0	0	3
4	18ETETT4040	Analog Circuits	3	0	0	3
5	18ETETT4050	Analog & Digital Communications	3	0	0	3
6	18ETETL4060	Digital System Design Lab	0	0	3	1.5
7	18ETETL4070	Analog Circuits Lab	0	0	3	1.5
8	18ETETL4080	Analog & Digital Communications Lab	0	0	3	1.5
Total Credits						20.5

**III B. Tech I Sem Course Structure (Electronics & Communication Technology)**

### Semester V (Third year)

S.No	Course Code	Course Title	L	T	P	C
1	18ETETT5010	Management science	3	0	0	3
2	18ETETT5020	Control Systems	3	0	0	3
3	18CMMST5030	Telecommunications and Switching Networks	3	0	0	3
4	18ETETT5040	Microprocessors and Micro Controllers	3	0	0	3
5	18ETETT5050	Digital Signal Processing	3	0	0	3
6	18ETETP5060	Professional Elective – I*	3	0	0	3
7	18ETETL5070	Microprocessors and Micro Controllers Lab	0	0	3	1.5
8	18ETETL5080	Digital Signal Processing Lab	0	0	3	1.5
9	18CMAHS5090	Skill Oriented Course – I (Soft skills & Aptitude Builder -1)	1	0	2	2
10	18ETETN50A0	Biology for Engineers	3	0	0	0
Total Credits						23

### Professional Elective -I

S.No	Course Code	Course Title	L	T	P	C
1	18ETETP506A	Radiation Systems	3	0	0	3
2	18ETETP506B	Digital Design Through Verilog	3	0	0	3
3	18ETETP506C	IoT Fundamentals	3	0	0	3
4	18ETETP506D	Spread Spectrum Techniques	3	0	0	3

### Semester VI (Third year)

S.No	Course Code	Course Title	L	T	P	C
1	18ETETT6010	Engineering Economics and Financial Management	3	0	0	3
2	18ETETT6020	VLSI Design	3	0	0	3
3	18CMMST6030	Computer Networks	3	0	0	3
4	18ETETP6040	Professional Elective – II*	3	0	0	3
5	18ETXXO605X	Open Elective – I**	3	0	0	3
6	18ETXXO606X	Open Elective – II**	3	0	0	3
7	18ETETL6070	Computer Networks Lab	0	0	3	1.5
8	18ETETL6080	VLSI Design Lab	0	0	3	1.5
9	18CMAHS6090	Skill Oriented Course – II (Soft skills & Aptitude Builder -2)	1	0	2	2
Total Credits						23

### Professional Elective -II

S.No	Course Code	Course Title	L	T	P	C
1	18ETETP604A	Micro Wave and Optical Communications	3	0	0	3
2	18ETETP604B	Design of Fault Tolerant Systems	3	0	0	3
3	18ETETP604C	Embedded System Design	3	0	0	3
4	18ETETP604D	Digital Image and Video Processing	3	0	0	3

#### IV B. Tech I Sem Course Structure (Electronics & Communication Technology)

##### Semester VII (Fourth year)

S.No	Course Code	Course Title	L	T	P	C
1	18ETETT7010	RF System Design	3	0	0	3
2	18ETETP7020	Professional Elective – III*	3	0	0	3
3	18ETETP7030	Professional Elective – IV*	3	0	0	3
4	18ETETP7040	Professional Elective – V*	3	0	0	3
5	18ETXXO705X	Open Elective – III**	3	0	0	3
6	18ETXXO706X	Open Elective – IV**	3	0	0	3
7	18ETETL7070	RF System Design Lab	0	0	3	1.5
8	18ETETI7080	Research Internship	0	0	3	3
9	18ETETS7090	Skill Oriented Course – III ( Image Processing With Open CV)OR (Electromagnetic Simulation Tools (HFSS, CST & FEKO))	1	0	2	2
10	18ETETN70A0	Electronics Measurements & Instrumentation	3	0	0	0
<b>Total Credits</b>						24.5

##### Professional Elective -III

S.No	Course Code	Course Title	L	T	P	C
1	18ETETP702A	Radar and Satellite Communications	3	0	0	3
2	18ETETP702B	Low Power VLSI Design	3	0	0	3

3	18ETETP702C	System On Chip Architectures	3	0	0	3
4	18ETETP702D	Bio-Medical Signal Processing	3	0	0	3

**Professional Elective -IV**

S.No	Course Code	Course Title	L	T	P	C
1	18ETETP703A	Software Defined Radio	3	0	0	3
2	18ETETP703B	CPLD and FPGA Architectures & Applications	3	0	0	3
3	18ETETP703C	Wireless Technologies for IOT	3	0	0	3
4	18ETETP703D	Artificial Neural Networks	3	0	0	3

**Professional Elective -V**

S.No	Course Code	Course Title	L	T	P	C
1	18ETETP704A	Global Positioning Systems	3	0	0	3
2	18ETETP704B	CAD Tools for VLSI	3	0	0	3
3	18ETETP704C	Big Data Analytics for IoT	3	0	0	3
4	18ETETP704D	Fuzzy Logic Systems	3	0	0	3

**IV B. Tech II Sem Course Structure(Electronics and Communication Technology)**

**Semester VIII (Fourth year)**

S.No	Course Code	Course Title	L	T	P	C
1	18ETETPR8010	Project Work, Seminar & Internship in Industry	0	0	0	12
<b>Total Credits</b>						12
<b>INTERNSHIP (6 MONTHS)</b>						


**Course Structure for B.Tech. ECT**

**B. Tech (Electronics and Communication Technology)**

**Open Electives**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	18ETETOXXXX	Signals and Systems	3	0	0	3
2	18ETETOXXXX	Principles of Signal Processing	3	0	0	3

3	18ETETOXXXX	Consumer Electronics	3	0	0	3
4	18ETETOXXXX	Transducers and Sensors	3	0	0	3
5	18ETETOXXXX	IOT and Applications	3	0	0	3
6	18ETETOXXXX	IC Applications	3	0	0	3
7	18ETETOXXXX	Principles of Communication Systems	3	0	0	3
8	18ETETOXXXX	Data Communications	3	0	0	3
9	18ETETOXXXX	Digital Logic design	3	0	0	3
10	18ETETOXXXX	Remote Sensing and GIS	3	0	0	3

  
**Head of the Department**  
 Head of the Dept-ECT  
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Permanently Affiliated to **JNTUK, SBTET**  
Ranked as "A" Grade by Govt. of A.P.

Department of Electronics & Communication Technology

Course Structure for SITE21

B.Tech. (Electronics and Communication Technology)

Course Structure for I B.Tech ECT Under the Regulations of SITE-21							
Semester -I							
S.No	Course Code	Subject Code	Course	L	T	P	C
1	BS	21CMMAT1010	Engineering Mathematics - I	3	0	0	3
2	BS	21ETPHT1020	Engineering Physics	3	0	0	3
3	BS	21CMCHT1030	Engineering Chemistry	3	0	0	3
4	ES	21CMCST1040	Programming for Problem Solving	3	0	0	3
5	ES	21ETMEL1050	Computer aided Engineering Graphics	2	0	2	3
6	BS LAB	21ETPHL1060	Engineering Physics Lab	0	0	3	1.5
7	BS LAB	21CMCHL1070	Engineering Chemistry Lab	0	0	3	1.5
8	ES LAB	21CMCSL1080	Programming for Problem Solving Lab	0	0	3	1.5
9	MC	21CMMSN1090	Constitution of India, Professional Ethics & Human Rights	2	0	0	0
<b>TOTAL</b>							<b>19.5</b>

Course Structure for I B.Tech ECT Under the Regulations of SITE-21							
Semester -II							
S.No	Course Code	Subject Code	Course	L	T	P	C
1	HS	21CMEGT2010	Technical English	3	0	0	3
2	BS	21CMMAT2020	Engineering Mathematics - II	3	0	0	3
3	ES	21CMEET2030	Basic Electrical Engineering	3	0	0	3
4	ES	21CMCST2040	Python Programming	1	0	4	3
5	ES	21ETETT2050	Network Analysis	3	0	0	3
6	HS LAB	21CMEGL2060	English Communication Skills Lab	0	0	3	1.5
7	ES LAB	21CMEEL2070	Basic Electrical Engineering Lab	0	0	3	1.5
8	ES LAB	21ETMEL2080	Engineering Workshop Lab	0	0	3	1.5
9	MC	21CMCHN2090	Environmental Science	2	0	0	0
<b>TOTAL</b>							<b>19.5</b>

Course Structure for II B.Tech ECT Under the Regulations of SITE-21							
Semester -III							
S.No	Course Code	Subject Code	Course	L	T	P	C
1	BS	21ECMAT3010	Engineering Mathematics - III	3	0	0	3
2	BS	21ETETT3020	Probability Theory & Stochastic Processes	3	0	0	3
3	PC	21ETETT3030	Semiconductor Devices	3	0	0	3

4	PC	21ETETT3040	Digital System Design	3	0	0	3
5	PC	21ETETT3050	Signals & Systems	3	0	0	3
6	PC	21ETETL3060	Semiconductor Devices Lab	0	0	3	1.5
7	PC	21ETETL3070	Digital System Design Lab	0	0	3	1.5
8	PC	21ETETL3080	Electrical circuits Lab	0	0	3	1.5
9	SOC	21ETETS3090	Skill Oriented Course –I ( Data Science Using Python) OR (MATLAB FOR Engineers)	1	0	2	2
<b>TOTAL</b>							<b>21.5</b>

<b>Course Structure for II B.Tech ECT Under the Regulations of SITE-21</b>							
<b>Semester -IV</b>							
S.No	Course Code	Subject Code	Course	L	T	P	C
1	PC	21ETETT4010	Management Science	3	0	0	3
2	PC	21ETETT4020	EM Waves & Transmission Lines	3	0	0	3
3	PC	21ETETT4030	Principles of Communication Theory	3	0	0	3
4	PC	21ETETT4040	Electronic Circuit Analysis	3	0	0	3
5	HS	21CMMST4050	Control Systems	3	0	0	3
6	PC	21ETETL4060	Principles of Communication Lab	0	0	3	1.5
7	PC	21ETETL4070	Electronic Circuit Analysis Lab	0	0	3	1.5
8	PC	21ETETL4080	Signals and systems Lab	0	0	3	1.5
9	SOC	21ETETS4090	Skill Oriented Course -2 (Internet of Things (IOT)) (PCB Designing) OR	1	0	2	2
10	MC	21ETETN40A0	Pulse and Digital Circuits	2	0	0	0
<b>Total</b>							<b>21.5</b>
11		21ETETHXXX 21ETETMXXX	Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)	4	0	0	4

**Course Structure for III B.Tech ECT Under the Regulations of SITE-21**

**Semester -V**

S.No	Subject Code	Name of the subject	L	T	P	C
1	21ETETT5010	Digital Modulation and Coding	3	0	0	3
2	21ETETT5020	Microelectronics & VLSI Design	3	0	0	3
3	21ETETT5030	Linear IC Applications	3	0	0	3
4	21ETETP504X	Professional Elective-1	3	0	0	3
5	21ETXXO505X	Open Elective - 1	3	0	0	3
6	21ETETL5060	Digital Modulation and Coding Lab	0	0	3	1.5
7	21ETETL5070	Linear IC Applications Lab	0	0	3	1.5
8	21CMAHS5080	Skill advanced course/ soft skill course-3* (Soft Skills & Aptitude Builder-1).	1	0	2	2
10	21CMMSN5090	Biology for Engineers	2	0	0	0
11	21ETETR70A0	Summer Internship - 2 Months (Mandatory) after second year (to be evaluated during V semester	0	0	3	1.5
<b>Total Semester Credits</b>						<b>21.5</b>
12		Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)	4	0	0	4

**Professional Elective-I**

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ETETP504A	Computer Organization and Microprocessors	3	0	0	3
2	21ETETP504B	Radiation Systems	3	0	0	3
3	21ETETP504C	System Design through Verilog	3	0	0	3

**Open Elective-I**

Candidate should select the subject from list of subjects offered by other departments

### III B.Tech VI Semester

S.No	Subject Code	Name of the subject	L	T	P	C
1	21ETETT6010	Digital Signal Processing	3	0	0	3
2	21ETETT6020	Data Communications and Networking	3	0	0	3
3	21ETETT6030	Microcontrollers and Applications	3	0	0	3
4	21ETETP604X	Professional Elective-II	3	0	0	3
5	21ETXXO605X	Open Elective - II	3	0	0	3
6	21ETETL6060	Digital Signal Processing Lab	0	0	3	1.5
7	21ETETL6070	VLSI Design Lab	0	0	3	1.5
8	21ETETL6080	Microcontroller and Applications Lab	0	0	3	1.5
9	21ETETS6090	Skill advanced course/ soft skill course-4* Soft Skills and Aptitude Builder-2	1	0	2	2
10	21ETETN60A0	Essentials of Indian Traditional Knowledge	2	0	0	0
<b>Total Semester Credits</b>						<b>21.5</b>
11	H/M	Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)	4	0	0	4

#### Professional Elective-2

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ETETP604A	Spread Spectrum Techniques	3	0	0	3
2	21ETETP604B	Advanced VLSI Design	3	0	0	3
3	21ETETP604C	Microwave Engineering	3	0	0	3

#### Open Elective-II

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21XXETO605A	Electronic Measurements	3	0	0	3
2	21XXETO605B	Biomedical Electronics	3	0	0	3
3	21XXETO605C	Embedded C Programming	3	0	0	3

### IV B.Tech VII Semester

S.No	Subject Code	Name of the subject	L	T	P	C
1	21ETETP701X	Professional Elective -III	3	0	0	3
2	21ETETP702X	Professional Elective -IV	3	0	0	3
3	21ETETP703X	Professional Elective -V	3	0	0	3
4	21ETXXO704X	Open Elective - III	3	0	0	3
5	21ETXXO705X	Open Elective - IV	3	0	0	3
6	21ETXXO706X	Humanities and Social Science Elective	3	0	0	3
7	21ETETS707A	Skill Advanced Course (Microwave Circuits and Antenna Design using HFSS)	1	0	2	2
	21ETETS707B	Skill Advanced Course ( Deep Learning for Image Processing Applications)				

8	21ETETR7080	Research Internship - 2 Months (Mandatory) after Third year (to be evaluated during V semester)	0	0	6	3
<b>Total Semester Credits</b>						<b>23</b>
9	H/M	Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)	4	0	0	4

#### Professional Elective-3

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ETETP701A	Digital Image Processing	3	0	0	3
2	21ETETP701B	Telecommunications and Switching Networks	3	0	0	3
3	21ETETP701C	CAD Tools for VLSI	3	0	0	3

#### Professional Elective-4

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ETETP702A	Bio-Medical Signal Processing	3	0	0	3
2	21ETETP702B	Global Position Systems	3	0	0	3
3	21ETETP702C	Optical Communication	3	0	0	3

#### Professional Elective-5

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ETETP703A	RF System Design	3	0	0	3
2	21ETETP703B	Internet of Things	3	0	0	3
3	21ETETP703C	Radar and Satellite Communications	3	0	0	3

#### Open Elective-3

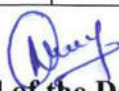
S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21XXECO704A	Introduction to Photonics	3	0	0	3
2	21XXECO704B	IC Applications	3	0	0	3
3	21XXECO704C	Nano Electronics	3	0	0	3

#### Open Elective-4

S.No	Subject Code	Name of the subject	L	T	P	Cr
1	21XXECO705A	Remote Sensing and GIS	3	0	0	3
2	21XXECO705B	Satellite Communications	3	0	0	3
3	21XXECO705C	Image Processing and Pattern Recognition	3	0	0	3

#### IV B.Tech. VIII-Semester

Si.No	Subject Code	Name of the subject	L	T	P	Cr
1	21ECECR8010	Project Project work, seminar and internship in industry	0	0	24	12
<b>Total</b>						<b>12</b>

  
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**TADCPAI**      **4101**  
**A.P.**

## GENERAL MINOR TRACKS

S. No.	Subject Code	Subject	L-T-P	Credits
1	21ETETHXXX	Cellular and Mobile Communication	3-1-0	4
2	21ETETHXXX	Switching Theory and Logic Design	3-1-0	4
3	21ETETHXXX	Digital Data Communications	3-1-0	4
4	21ETETHXXX	Signals and systems	3-1-0	4
5	21ETETHXXX	Electromagnetic Waves and Radiating Systems	3-1-0	4
6	21ETETHXXX	Antenna Theory	3-1-0	4
7	21ETETHXXX	Linear IC Applications	3-1-0	4
8	21ETETHXXX	Digital Signal processing	3-1-0	4
9	21ETETHXXX	Analog Communication	3-1-0	4
10	21ETETHXXX	Microwave and Radar engineering	3-1-0	4

In addition to any of the four subjects, MOOCs/NPTEL Courses for 04 credits (02 courses @ 2 credits each) are compulsory in the domain of Electronics and Communication Engineering



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Department of Artificial Intelligence & Machine Learning

**Course Structure for I B.Tech AIML Under the Regulations of SITE-21**

**Semester -I**

S.No	Course Code	Subject Code	Course	L	T	P	C
1	HS	21CMMAT1010	Engineering Mathematics – I	3	0	0	3
2	BS	21AMPHT1020	Engineering Physics	3	0	0	3
3	ES	21CMCHT1030	Engineering Chemistry	3	0	0	3
4	ES	21CMCST1040	Programming for Problem Solving	3	0	0	3
5	ES	21AMMEL1050	Computer Aided Engineering Graphics	2	0	2	3
6	HS	21AMPHL1060	Engineering Physics Lab	0	0	3	1.5
7	ES	21CMCHL1070	Engineering Chemistry Lab	0	0	3	1.5
8	ES	21CMCSL1080	Programming for Problem Solving Lab	0	0	3	1.5
9	MC	21CMMSN1090	Constitution of India, Professional Ethics & Human Rights	2	0	0	0
<b>TOTAL</b>				<b>16</b>	<b>0</b>	<b>11</b>	<b>19.5</b>

**Course Structure for I B.Tech AIML Under the Regulations of SITE-21**

**Semester -II**

S.No	Course Code	Subject Code	Course	L	T	P	C
1	BS	21CMEGT2010	Technical English	3	0	0	3
2	BS	21CMMAT2020	Engineering Mathematics - II	3	0	0	3
3	BS	21CMEET2030	Basic Electrical Engineering	3	0	0	3
4	ES	21CMCST2040	Python Programming	1	0	4	3
5	ES	21AMAMT2050	Data Structures	3	0	0	3
6	BS	21CMEGL2060	English Communication Skills Lab	0	0	3	1.5
7	BS	21CMEEL2070	Basic Electrical Engineering Lab	0	0	3	1.5
8	ES	21AMAML2080	DS Lab	0	0	3	1.5
9	MC	21CMCHN2090	Environmental Science	2	0	0	0
<b>TOTAL</b>				<b>16</b>	<b>0</b>	<b>11</b>	<b>19.5</b>

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**Proposed Course Structure for II B.Tech AIML Under the Regulations of SITE-21**

**Semester -III**


S.No	Subject Code	Course Code	Course	L	T	P	C
1	BS	21AMMAT3010	Probability and statistics	3	0	0	3
2	PC	21AMAMT3020	Foundations of Artificial Intelligence	3	0	0	3
3	PC	21AMAMT3030	Database Management Systems	3	0	0	3
4	PC	21AMAMT3040	Operating Systems	3	0	0	3
5	PC	21AMAMT3050	Analog & Digital Electronics	3	0	0	3
6	PC	21AMAMT3060	Artificial Intelligence Lab	0	0	3	1.5
7	PC	21AMAMT3070	Operating Systems Lab	0	0	3	1.5
8	PC	21AMAMT3080	Database Management Systems Lab	0	0	3	1.5
9	SOC	21AMAMC3090	Python for Data Science	1	0	2	2
10	MC	21CMBIN3100	MC: Biology for Engineers	3	0	0	0
<b>TOTAL</b>							<b>21.5</b>

**Proposed Course Structure for II B.Tech AIML Under the Regulations of SITE-21**

**Semester -IV**

S. No	Subject Code	Course Code	Course	L	T	P	C
1	BS	21AMMAT4010	Discrete Mathematics	3	0	0	3
2	PC	21AMAMT4020	Introduction to Machine Learning	3	0	0	3
3	PC	21AMAMT4030	Design and Analysis of Algorithms	3	0	0	3
4	ES	21AMAMT4040	Java Programming	3	0	0	3
5	PC	21AMAMT4050	Optimization Techniques for AI	3	0	0	3
6	PC	21AMAML4060	Machine Learning Lab	0	0	3	1.5
7	PC	21AMAML4070	Design and Analysis of Algorithms Lab	0	0	3	1.5
8	ES	21AMAML4080	Java Programming Lab	0	0	3	1.5
9	SOC	21AMAMC4090	SOC: Fundamentals of Programming and Simulation using MATLAB for AI	1	0	2	2
<b>TOTAL</b>							<b>21.5</b>

Internship 2 Months (Mandatory) during summer vacation

  
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Department of Artificial Intelligence & Machine Learning

**Proposed Course Structure for III B.Tech AIML Under the Regulations of SITE-21**

**Semester -V**

S. No	Subject Code	Course Code	Course	L	T	P	C
1	HSS	21CMMST5010	Engineering Economics & Financial Management	3	0	0	3
2	PC	21AMAMT5020	Computer Networks	3	0	0	3
3	PC	21AMAMT5030	Software Engineering	3	0	0	3
4	PE	21AMAMT504X	Professional Elective-1	3	0	0	3
5	OE	21AMXXT5050	Open Elective-1	3	0	0	3
6	PC	21AMAML5060	Computer Networks Lab	0	0	3	1.5
7	PC	21AMAML5070	Software Engineering Lab	0	0	3	1.5
8	SOC	21CMAHS5080	Soft Skills & Aptitude builder I	1	0	2	2
9	MC	21AMAMN5090	MC: Intellectual Property Rights	2	0	0	0
10		21AMAMR5100	Summer Internship (Mandatory) after second year (to be evaluated during V semester)	0	0	0	1.5
<b>TOTAL</b>							<b>21.5</b>
Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)				4	0	0	4

**Professional Electives I**

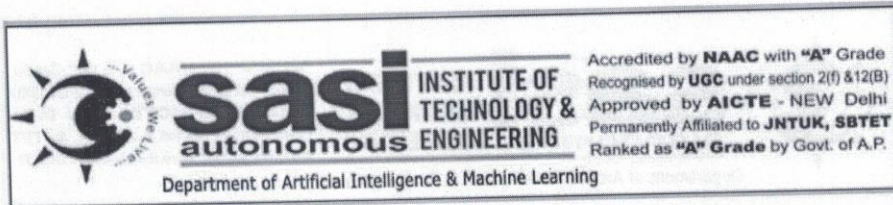
S.No.	Course Code	Course
1.	21AMAMT504A	Graph Theory
2.	21AMAMT504B	Web Programming
3.	21AMAMT504C	Computer Vision & Robotics
4.	21AMAMT504D	Computer Graphics



Proposed Course Structure for III B.Tech AIML Under the Regulations of SITE-21							
Semester -VI							
S.No	Subject Code	Course Code	Course	L	T	P	C
1	BS	21AMAMT6010	Deep learning	3	0	0	3
2	BS	21AMAMT6020	Compiler Design	3	0	0	3
3	PC	21AMAMT6030	Data Ware housing and Mining	3	0	0	3
4	PC	21AMAMT604X	Professional Elective -2	3	0	0	3
5	PC	21AMAMT6050	Open Elective -2	3	0	0	3
6	PC	21AMAMT6060	Deep learning Lab	0	0	3	1.5
7	PC	21AMAMT6070	Compiler Design Lab	0	0	3	1.5
8	PC	21AMAMT6080	Data Mining using Python Lab	0	0	3	1.5
9	SOC	21AMAMC6090	Soft Skills & Aptitude builder II	2	0	0	2
10	MC	21AMAMC6100	Mandatory Course : Essence of Indian Traditional Knowledge	2	0	0	0
<b>TOTAL</b>							<b>21.5</b>

**Professional Electives II**

S.No.	Course Code	Course
1.	21AMAMT604A	Software Testing Methodologies
2.	21AMAMT604B	Information Retrieval Systems
3.	21AMAMT604C	Cryptography and Network Security
4.	21AMAMT604D	Pattern Recognition



**Proposed Course Structure for IV B.Tech AIML Under the Regulations of SITE-21**

**Semester -VII**

S.No	Subject Code	Course Code	Course	L	T	P	C
1	PC	21AMAMT701X	Professional Elective-3	3	0	0	3
2	PC	21AMAMT702X	Professional Elective-4	3	0	0	3
3	PC	21AMAMT703X	Professional Elective-5	3	0	0	3
4	PC	21AMXXT704X	Open Elective-3	3	0	0	3
5	PC	21AMXXT705X	Open Elective-4	3	0	0	3
6	HS	21AMMST7060	Management Science	3	0	0	3
7	SOC	21AMAMC7070	Skill Oriented Course	1	0	2	2
		21AMAMR7080	Industrial/Research Internship 2 Months (Mandatory) after third year (to be evaluated during VII semester	0	0	0	3
<b>TOTAL</b>							<b>23</b>

**Professional Electives III**

S.No.	Course Code	Course
1.	21AMAMT701A	Internet of Things
2.	21AMAMT701B	Reinforcement Learning
3.	21AMAMT701C	DevOps
4.	21AMAMT701D	Block Chain Technologies

**Professional Electives IV**

S.No.	Course Code	Course
1.	21AMAMT702A	Robotic Process Automation
2.	21AMAMT702B	Natural Language Processing
3.	21AMAMT702C	Big Data Analytics
4.	21AMAMT702D	Soft Computing

**Professional Electives V**

S.No.	Course Code	Course
1.	21AMAMT703A	Cloud Computing
2.	21AMAMT703B	Expert Systems
3.	21AMAMT703C	Data Visualization
4.	21AMAMT703D	Semantic Web



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Proposed Course Structure for IV B.Tech AIML Under the Regulations of SITE-21							
Semester -VIII							
S.No	Subject Code	Course Code	Course	L	T	P	C
1	PC	21AMMAT5010	Project Work	3	0	0	12
<b>TOTAL</b>							<b>12</b>

**Open Electives: (Offered by AI&ML Department for other department students)**

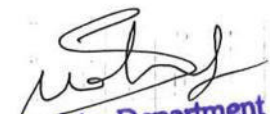
S. No	Subject Code	Name of the subject	L	T	P	C
1.	21XXAMOXXXA	Artificial Intelligence	3	0	0	3
2.	21XXAMOXXXB	Operating Systems Concepts	3	0	0	3
3.	21XXAMOXXXC	Designing Database Management Systems	3	0	0	3
4.	21XXAMOXXXD	R Programming	3	0	0	3
5.	21XXAMOXXXE	Java Programming	3	0	0	3
6.	21XXAMOXXXF	Introduction to Machine Learning	3	0	0	3
7.	21XXAMOXXXG	Internet of Things	3	0	0	3
8.	21XXAMOXXXH	Optimization Techniques for AI	3	0	0	3

**Minor Courses**

S.No	Course Code	Name of the Course	L	T	P	C
1	21YYAMMXXXX	Soft Computing	3	1	0	4
2	21YYAMMXXXX	Introduction to AI & Machine Learning	3	1	0	4
3	21YYAMMXXXX	Introduction to Data Science	3	1	0	4
4	21YYAMMXXXX	Deep Learning	3	1	0	4
5	21YYAMMXXXX	IOT	3	1	0	4
6	21YYAMMXXXX	EXPERT SYSTEMS	3	1	0	4
<b>Total Credits (Any 4 Courses)</b>						<b>16</b>

**NOTE:**

- TWO, NPTEL courses of minimum 12-week duration covering a total of 4 credits (offered by AI & ML Department) should be completed, Student can register at any time after the completion of II B.Tech. I Sem.

  
 Head of the Department  
 Department of AI & ML  
 Sasi Institute of Technology & Engineering,  
 Tadepalligudem, W.G. Dist., A.P.

**SITE21**

**COURSE STRUCTURE**

**for**

**Computer Science and Data  
Structures**

**COURSE STRUCTURE for B. Tech  
Semester I (First year)**

S.No	SubjectCode	Course	Hours			Credits
			L	T	P	
1	21CMEGT1010	Technical English	3	0	0	3
2	21CMMAT1020	Engineering Mathematics - I	3	0	0	3
3	21CMEET1030	Basic Electrical Engineering	3	0	0	3
4	21CMCST1040	Programming for Problem Solving	3	0	0	3
5	21CSMEL1050	Computer Aided Engineering Graphics	2	0	2	3
6	21CMEGL1060	English Communication Skills Lab	0	0	3	1.5
7	21CMEEL1070	Basic Electrical Engineering Lab	0	0	3	1.5
8	21CMCSL1080	Programming for Problem Solving Lab	0	0	3	1.5
9	21CMESN1090	Environmental Science	2	0	0	0
<b>Total</b>			<b>16</b>	<b>0</b>	<b>11</b>	<b>19.5</b>

**Semester II (First year I -II)**

S. No	Subject Code	Course	Hours			Credits
			L	T	P	
1	21CMMAT2010	Engineering Mathematics - II	3	0	0	3
2	21CSPHT2020	Engineering Physics	3	0	0	3
3	21CMCHT2030	Engineering Chemistry	3	0	0	3
4	21CMCST2040	Python Programming	1	0	4	3
5	21CSCST2050	Data Structures	3	0	0	3
6	21CSPHL2060	Engineering Physics Lab	0	0	3	1.5
7	21CMCHL2070	Engineering Chemistry Lab	0	0	3	1.5
8	21CSCSL2080	Data Structures Lab	0	0	3	1.5
9	21CMMSN2090	Constitution of India, Professional Ethics & Human Rights	2	0	0	0
<b>Total</b>			<b>16</b>	<b>0</b>	<b>11</b>	<b>19.5</b>

**SITE21**

**COURSE STRUCTURE**

**for**

**CIC**

**COURSE STRUCTURE for B. Tech  
Semester I (First year)**

S.No	SubjectCode	Course	Hours			Credits
			L	T	P	
1	21CMEGT1010	Technical English	3	0	0	3
2	21CMMAT1020	Engineering Mathematics - I	3	0	0	3
3	21CMEET1030	Basic Electrical Engineering	3	0	0	3
4	21CMCST1040	Programming for Problem Solving	3	0	0	3
5	21CSMEL1050	Computer Aided Engineering Graphics	2	0	2	3
6	21CMEGL1060	English Communication Skills Lab	0	0	3	1.5
7	21CMEEL1070	Basic Electrical Engineering Lab	0	0	3	1.5
8	21CMCSL1080	Programming for Problem Solving Lab	0	0	3	1.5
9	21CMESN1090	Environmental Science	2	0	0	0
<b>Total</b>			<b>16</b>	<b>0</b>	<b>11</b>	<b>19.5</b>

**Semester II (First year I-II)**

S. No	Subject Code	Course	Hours			Credits
			L	T	P	
1	21CMMAT2010	Engineering Mathematics - II	3	0	0	3
2	21CSPHT2020	Engineering Physics	3	0	0	3
3	21CMCHT2030	Engineering Chemistry	3	0	0	3
4	21CMCST2040	Python Programming	1	0	4	3
5	21CSCST2050	Data Structures	3	0	0	3
6	21CSPHL2060	Engineering Physics Lab	0	0	3	1.5
7	21CMCHL2070	Engineering Chemistry Lab	0	0	3	1.5
8	21CSCSL2080	Data Structures Lab	0	0	3	1.5
9	21CMMSN2090	Constitution of India, Professional Ethics & Human Rights	2	0	0	0
<b>Total</b>			<b>16</b>	<b>0</b>	<b>11</b>	<b>19.5</b>



**MBA I Semester Proposed Course structure for the Academic Year 2021-2022**

S. No	Subject Code	Title of the Course	L	P	C	Internal	External	Total
1.	21MS11T1	Principles of Management	4	-	4	40	60	100
2.	21MS11T2	Managerial Economics	4	-	4	40	60	100
3.	21MS11T3	Accounting for Managers	4	-	4	40	60	100
4.	21MS11T4	Managerial Communication & Soft Skills	4	-	4	40	60	100
5.	21MS11T5	Quantitative Analysis for Business Decisions	4	-	4	40	60	100
6.	21MS11T6	Business Environment	4	-	4	40	60	100
7.	21CS11L7	Information Technology Lab	-	3	2	40	60	100
8.	21MS11C8	Case Study – I	2	-	1	-	-	-
<b>Total Credits for I Semester (A)</b>					<b>27</b>	<b>280</b>	<b>420</b>	<b>700</b>

**MBA II Semester Proposed Course structure for the Academic Year 2021-2022**

S. No	Subject Code	Title of the Course	L	P	C	Internal	External	Total
1.	21MS12T1	Financial Management	4	-	4	40	60	100
2.	21MS12T2	Marketing Management	4	-	4	40	60	100
3.	21MS12T3	Human Resource Management	4	-	4	40	60	100
4.	21MS12T4	Production & Operations Management	4	-	4	40	60	100
5.	21MS12T5	Research Methodology	4	-	4	40	60	100
6.	21MS12T6	Organisational Behaviour	4	-	4	40	60	100
7.	21MS12P7	Mini Project	2	-	2	-	-	100
8.	21MS12C8	Case Study – II	2	-	1	-	-	-
<b>Total Credits for II Semester (B)</b>					<b>27</b>	<b>240</b>	<b>360</b>	<b>700</b>

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**MBA III Semester Proposed Course structure for the Academic Year 2021-2022**

S. No	Subject Code	Title of the Course	L	P	C	Internal	External	Total
1.	21MS13T1	Strategic Management	4	-	4	40	60	100
2.	21MS13T2	Legal Aspects of Business	4	-	4	40	60	100
3.	21MS13T3	Business Ethics & Corporate Governance	4	-	4	40	60	100
4.	21MS13F4/ M4/H4	Elective – I	4	-	4	40	60	100
5.	21MS13F5/ M5/H5	Elective – II	4	-	4	40	60	100
6.	21MS13F6/ M6/H6	Elective – III	4	-	4	40	60	100
7.	21MS13F7/ M7/H7	Elective – IV	4	-	4	40	60	100
8.	21MS13B8	Startup Business Plan	2	-	1	-	-	-
<b>Total Credits for III Semester (C)</b>					<b>29</b>	<b>280</b>	<b>420</b>	<b>700</b>

The students may choose **ONE** Specialization among the following:

Subject code	Finance	Subject code	Marketing	Subject Code	HR
21MS13F4	Security Analysis & Portfolio Management	21MS13M4	Consumer Behaviour	21MS13H4	Leadership Management
21MS13F5	Banking & Insurance Management	21MS13M5	Retail Management	21MS13H5	Compensation and Reward Management
21MS13F6	Project Management	21MS13M6	Customer Relationship Management	21MS13H6	Performance Management
21MS13F7	Strategic Financial Management	21MS13M7	Digital & Social Media Marketing	21MS13H7	Strategic Human Resource Management

  
**Head of the Department**  
 Department of Management Science  
 Institute of Technology & Engineering  
 W.G. Dist., ...

