MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section2(f) & 12(B)of the UGC act,1956

B.Tech – Electrical & Electronics Engineering
Course Structure (R20)
Applicable From 2020-21 Admitted Batch
Structure Breakup

S. No	Category	Breakup of credits (Total 160 credits)
1	Humanities and social sciences including management courses (HSMC)	10
2	Basic Sciences Courses (BS)	26
3	Engineering sciences courses including workshop, drawing basics of electrical/mechanical/computer etc. (ES)	21
4	Professional core courses (PC)	62
5	Professional Electives courses relevant to chosen specialization/branch (PE)	18
6	Open subjects- Electives from other technical and/or emerging subjects (OE)	9
7	Project work, seminar and internship in industry or elsewhere (PS)	14
8	Mandatory Courses	-
	TOTAL	**160**

I YEAR I SEMESTER

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2010001	Engineering Mathematics - I	BSC	3	1	0	4	30	70	100
2	2010008	Engineering Chemistry	BSC	3	1	0	4	30	70	100
3	2010009	Communicative English	HSMC	2	0	0	2	30	70	100
4	2010501	Programming For Problem Solving	ESC	3	1	0	4	30	70	100
5	2010073	Engineering Chemistry Lab	BSC	0	0	3	1.5	30	70	100
6	2010074	Communicative English Lab	HSMC	0	0	2	1	30	70	100
7	2010571	Programming For Problem Solving Lab	ESC	0	0	3	1.5	30	70	100
8	---	Induction Program		0	0	0	0	-	-	-
Total Credits				**11**	**3**	**8**	**18**	**210**	**490**	**700**

I YEAR II SEMESTER

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2020002	Engineering Mathematics - II	BSC	3	1	0	4	30	70	100
2	2020006	Applied Physics	BSC	3	1	0	4	30	70	100
3	2020201	Basic Electrical Engineering	PCC	3	0	0	3	30	70	100
4	2020372	Engineering Workshop	ESC	1	0	3	2.5	30	70	100
5	2020371	Engineering Drawing Practice	ESC	1	0	4	3	30	70	100
6	2020071	Applied Physics Lab	BSC	0	0	3	1.5	30	70	100
7	2020273	Basic Electrical Engineering Workshop Lab	PCC	0	0	2	1	30	70	100
Total Credits				**11**	**2**	**12**	**19**	**210**	**490**	**700**

II YEAR I SEMESTER

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2030003	Laplace Transforms Series Solutions And Complex Variables	BSC	3	1	0	4	30	70	100
2	2030204	Network Analysis	PCC	3	0	0	3	30	70	100
3	2030205	Electrical Machines-I	PCC	3	1	0	4	30	70	100
4	2030402	Analog Electronics	PCC	3	0	0	3	30	70	100
5	2030502	Data Structures	BSC	2	0	0	2	30	70	100
6	2030274	Network Analysis Lab	PCC	0	0	2	1	30	70	100
7	2030484	Analog Electronics Lab	PCC	0	0	2	1	30	70	100
8	2030572	Data Structures Lab	BSC	0	0	2	1	30	70	100
9	2030321	Environmental Science	*MC	2	0	0	0	-	-	-
Total Credits				**16**	**2**	**6**	**19**	**240**	**560**	**800**

II YEAR II SEMESTER

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2040206	Electro Magnetic Fields	PCC	3	1	0	4	30	70	100
2	2040207	Electrical Machines-II	PCC	3	0	0	3	30	70	100
3	2040407	Digital Electronics & IC Applications	PCC	3	0	0	3	30	70	100
4	2040412	Signals & Systems	PCC	3	0	0	3	30	70	100
5	2040509	Java Programming	ESC	2	0	0	2	30	70	100
6	2040275	Electrical Machines-I Lab	PCC	0	0	2	1	30	70	100
7	2040485	Digital Electronics & IC Applications Lab	PCC	0	0	2	1	30	70	100
8	2040484	Signals & Systems Lab	PCC	0	0	2	1	30	70	100
9	2040570	Java Programming Lab	ESC	0	0	2	1	30	70	100
10		NSS/NCC	*MC	2	0	0	0	-	-	-
Total Credits				**16**	**1**	**8**	**19**	**270**	**630**	**900**

III YEAR I SEMESTER

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2050208	Power Systems-I	PCC	3	0	0	3	30	70	100
2	2050209	Control Systems	PCC	3	0	0	3	30	70	100
3	2050403	Microprocessors and Microcontrollers	ESC	3	0	0	3	30	70	100
4	2050010	Business Economics and Financial Analysis	HSMC	3	0	0	3	30	70	100
5	2050505	Python Programming	ESC	2	0	0	2	30	70	100
6		Open Elective-I	OEC	3	0	0	3	30	70	100
7	2050276	Electrical Machines-II Lab	PCC	0	0	2	1	30	70	100
8	2050472	Microprocessors and Microcontrollers Lab	ESC	0	0	2	1	30	70	100
9	2050575	Python Programming Lab	ESC	0	0	2	1	30	70	100
10	-------	Internship*	PS	0	0	2	1	30	70	100
Total Credits				**17**	**0**	**8**	**21**	**300**	**700**	**1000**

III YEAR II SEMESTER

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2060210	Power Systems-II	PCC	3	0	0	3	30	70	100
2	2060211	Electrical Measurements & Instrumentation	PCC	3	0	0	3	30	70	100
3	2060212	Power Electronics	PCC	3	0	0	3	30	70	100
4	2060011	Fundamentals Of Management	HSMC	3	0	0	3	30	70	100
5		Open Elective-II	OEC	3	0	0	3	30	70	100
6		Professional Elective-I	PEC	3	0	0	3	30	70	100
7	2060277	Control Systems Lab	PCC	0	0	2	1	30	70	100
8	2060278	Electrical Systems Simulation Lab	PCC	0	0	2	1	30	70	100
9	2060075	Advanced English Language and Communication Skills Lab	HSMC	0	0	2	1	30	70	100
10		Applications of AI	*MC	0	2	0	0	-	-	-
Total Credits				**18**	**2**	**6**	**21**	**270**	**630**	**900**

***Students have to complete internship in II Year- II Semester Summer break, Evaluation is carried in III-I semester.**

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1	2070213	Switchgear & Protection	PCC	3	0	0	3	30	70	100
2	2070214	Power System Operation & Control	PCC	3	0	0	3	30	70	100
3	2070215	Power Semiconductor Drives	PCC	3	0	0	3	30	70	100
4		Professional Elective-II	PEC	3	0	0	3	30	70	100
5		Professional Elective-III	PEC	3	0	0	3	30	70	100
6		Open Elective-III	OEC	3	0	0	3	30	70	100
7	2070279	Power Systems Lab	PCC	0	0	2	1	30	70	100
8	2070280	Electrical Measurements & Instrumentation Lab	PCC	0	0	2	1	30	70	100
9	2070281	Power Electronics Lab	PCC	0	0	2	1	30	70	100
10		Industry Oriented Mini Project**	PS	0	0	4	2	30	70	100
Total Credits				**18**	**0**	**10**	**23**	**300**	**700**	**1000**

IV YEAR II SEMESTER

S. No.	Course Code	Course Title	Course Area	Hours Per Week			Credits	Scheme of Examination Maximum Marks		
				L	T	P		Internal (CIE)	External (SEE)	Total
1		Professional Elective-IV	PEC	3	0	0	3	30	70	100
2		Professional Elective-V	PEC	3	0	0	3	30	70	100
3		Professional Elective-VI	PEC	3	0	0	3	30	70	100
4		Technical Seminar	PS	0	0	2	1	30	70	100
5		Major Project	PS	0	0	20	10	30	70	100
Total Credits				**9**	**0**	**22**	**20**	**150**	**350**	**500**

****Students have to complete industry oriented mini project in III Year- II Semester Summer break, Evaluation is carried in IV-I semester.**

PE I - Professional Elective I

S.No	Course Code	Course Title
1	2060216	Renewable Energy Sources
2	2060217	High Voltage Engineering
3	2060218	Advanced Control Systems
4	2060219	Special Machines

PE II - Professional Elective II

S.No	Course Code	Course Title
1	2070220	Electrical Distribution Systems
2	2070221	Digital Control Systems
3	2070419	VLSI Design
4	2070222	Modern Power Electronics

PE III – Professional Elective III

S.No	Course Code	Course Title
1	2070418	Digital Signal Processing
2	2070223	Control System Design
3	2070224	Flexible AC Transmission System
4	2070225	Utilization of Electrical Energy

PE IV - Professional Elective IV

S.No	Course Code	Course Title
1	2080226	Power Quality
2	2080227	Industrial Electrical Systems
3	2080228	Electrical Machine Design
4	2080229	Electrical & Hybrid Vehicles

PE V - Professional Elective V

S.No	Course Code	Course Title
1	2080230	IOT With Electrical Applications
2	2080231	Smart Grid Technologies
3	2080232	AI Techniques In Electrical Engineering
4	2080233	HVDC Transmission System

PE VI - Professional Elective VI

S.No	Course Code	Course Title
1	2080234	Advanced Control of Electric Drives
2	2080235	Estimation & Costing of Electrical Systems
3	2080236	Ml Techniques to Power System Security
4	2080238	Programmable Logic Controllers

Open Electives

S.No	Course Code	Course Title
1	Open Elective 1	2060216- Renewable Energy Sources
2	Open Elective 2	2070225- Utilization of Electrical Energy
3	Open Elective 3	2080229- Electrical & Hybrid Vehicles