

**TABLE 3: PROGRAM STRUCTURE FOR BACHELOR OF
TECHNOLOGY (ELECTRICAL AND ELECTRONICS ENGINEERING)
DEGREE COURSE**

SL. No.	Course Category	Course Code	Number of Courses
1	Basic Applied Sciences	BAS	9
2	Engineering Sciences	ES	10
3	Professional Core	PC	13
4	Professional Electives -Program Specific Specialized Elective Courses	PE	11
5	Ability Enhancement Courses	AEC	6
6	Skill Enhancement courses (Technical and Soft skills)	SEC	10
7	Value Added Courses	VAC	3
8	Practical / Workshop	P/W	10
9	Live Project & Industrial Visit and Summer Internship	LP/SI	8
10	Multidisciplinary (Humanities and Social Sciences Courses) Courses	MDC	3
TOTAL NUMBER OF COURSES			83

SRM UNIVERSITY DELHI-NCR, SONEPAT

TABLE 4: PROGRAM CREDIT STRUCTURE SEMESTERWISE FOR BACHELOR OF TECHNOLOGY (ELECTRICAL & ELECTRONICS ENGINEERING)

SL. No	Course Category	Course Code	Credits Per Semester								Total Credits	% AG E
			I	II	III	IV	V	VI	VII	VIII		
1	Basic Applied Sciences	BAS	9	9	3	3	3	-	-	-	27	14.91
2	Engineering Sciences	ES	9	9	-	-	-	-	-	-	18	9.94
3	Professional Core	PC	-	-	12	9	6	6	6	-	39	21.54
4	Professional Electives -Program Specific Specialized Elective Courses	PE	-	-	3	3	9	9	9	-	33	18.25
5	Ability Enhancement Courses	AEC	5	2	-	-	-	-	-	-	7	3.86
6	Skill Enhancement courses (Technical and Soft skills)	SEC	-	-	2	2	2	2	2	-	10	5.52
7	Value Added Courses	VAC	2	2	2	-	-	-	-	-	6	3.31
8	Practical / Workshop	P/W	-	-	2	3	2	2	1	-	10	5.52
9	Live Project & Industrial Visit and Summer Internship	LP/SI	-	-	-	1	2	1	6	12	22	12.15
10	Multidisciplinary (Humanities and Social Sciences Courses) Courses	MDC	-	-	-	3	3	3	-	-	9	5
TOTAL			25	22	24	24	27	23	24	12	181	100

**BACHELOR OF TECHNOLOGY (ELECTRICAL AND ELECTRONICS
ENGINEERING) DEGREE COURSE**
TABLE 5: PROGRAM COURSE'S CREDIT STRUCTURE SEMESTER WISE

Semester-I

SL.No	Code	Category	Course Name	Hours per week				Credits
				L	T	P	Total Hours	
Theory								
1	23AS101	(BAS)	Engineering Mathematics-I	3	1	0	4	4
2	23AS102/23AS103	(BAS)	Engineering Physics/Engineering Chemistry	3	1	0	4	4
3	23EE101/23E C101	(ES)	Basic Electrical Engineering /Basic Electronics Engineering	3	0	0	3	3
4	23ME101/23 CS101	(ES)	Engineering Mechanics / Fundamentals of Computer & C Programming	3	0	0	3	3
5	23AEC101	(AEC)	Professional English (*50% of students will be offered)	2*	0	0	2*	2*
6	23AEC102/23AEC 103/23AEC104	(AEC)	Hindi-I/German-I/French-I	2	0	0	2	2
7	23ESEB101/23VAC102	(VAC)	Environmental Bioengineering / Indian Constitution and Polity	2	0	0	2	2
Total Credits (Theory)				16/18	2	0	18/20	18/20
Practical								
8	23AS152/23AS153	(BAS)	Engineering Physics Lab/Engineering Chemistry Lab	0	0	2	2	1
9	23EE151/23E C151	(ES)	Basic Electrical Engineering Lab /Basic Electronics Engineering Lab	0	0	2	2	1
10	23ME151/23 CS151	(ES)	Basic Mechanical Engineering Lab/ C Programming Lab	0	0	2	2	1
11	23ME152/23 ME153	(ES)	Mechanical Workshop Lab/Engineering Graphics & Design Lab	0	0	2	2	1
12	23AEC151*	(AEC)	Professional English Lab (50% of students will be offered)	0	0	2*	2*	1*
Total Credits (Practical)				0	0	8/10	8/10	4/5
	Total Credits (Theory + Practical)			16/18	2	8/10	26/30	22/25

[L= Lecture, T = Tutorials, P = Practical's & C = Credits]

*3 Week long Induction Programme right at the start of the 1st Semester. Normal class start only after the induction programme is over.

Semester-II

SL.No	Code	Category	Course Name	Hours per week				Credits
				L	T	P	Total Hours	
Theory								
1	23AS201	(BAS)	Engineering Mathematics-II	3	1	0	4	4
2	23AS0202/23AS0203	(BAS)	Engineering Physics/Engineering Chemistry	3	1	0	4	4
3	23EE0201/23EC0201	(ES)	Basic Electrical Engineering /Basic Electronics Engineering	3	0	0	3	3
4	23ME0201/23CS0201	(ES)	Engineering mechanics / Fundamentals of Computer & C Programming	3	0	0	3	3
5	23AEC0201	(AEC)	Professional English (*50% of students will be offered)	2*	0	0	2*	2*
6	23AEC 202/23AEC203/AEC204	(AEC)	Hindi-II/German-II/French-II	2	0	0	2	2
7	23ESEB201/23VAC 202	(VAC)	Environmental Bioengineering / Indian Constitution and Polity	2	0	0	2	2
Total Credits (Theory)				16/18	2	0	18/20	18/20
Practical								
8	23AS0252/23 AS0253	(BAS)	Engineering Physics Lab/Engineering Chemistry Lab	0	0	2	2	1
9	23EE0251/23EC0251	(ES)	Basic Electrical Engineering Lab /Basic Electronics Engineering Lab	0	0	2	2	1
10	23ME251/23 CS251	(ES)	Basic Mechanical Engineering Lab/ C Programming Language Lab	0	0	2	2	1
11	23ME0251/21ME0252	(ES)	Mechanical Workshop Lab/Engineering Graphics & Design Lab	0	0	2	2	1
12	23AEC251*	(AEC)	Professional English Lab (50% of students will be offered)	0	0	2*	2*	1*
Total Credits (Practical)				0	0	8/10	8/10	4/5
Total Credits (Theory + Practical)				16/18	2	8/10	26/30	22/25

[L= Lecture, T = Tutorials, P = Practical's & C = Credits]

Semester-III

SL.No	Code	Category	Course Name	Hours per week				Credits
				L	T	P	Total Hours	
Theory								
1	23AS301	(BAS)	Engineering Mathematics-III	3	0	0	3	3
2	23EE0203	(PC)	Electrical Machines-I	3	0	0	3	3
3	23EE0205	(PC)	Electromagnetic Theory	3	0	0	3	3
4	23EE0207	(PC)	Digital System Design	3	0	0	3	3
5	23EEPEXX	(PE)	Professional Elective- I	3	0	0	3	3
6	23EE0209	(PC)	Network Analysis and Synthesis	3	0	0	3	3
Total Credits (Theory)				18	0	0	18	18
Practical								
7	23EE0253	(P)	Electrical Machines Laboratory-I	0	0	2	2	1
8	23EE0257	(P)	Digital Electronics Lab	0	0	2	2	1
9	23VAC 103	(VAC)	Sports, Yoga & Fitness	1	0	2	3	2
Total Credits (Practical)				1	0	6	7	4
Skill Enhancement								
10	23CS0201	(SEC)	Essentials of Blockchain and Internet of Things	0	0	2	2	1
11	23SS351	(SEC)	Effective Communication Skills	0	0	2	2	1
Total Credits (Skill Enhancement)				0	0	4	4	2
Total Credits (Theory + Practical + Skill Enhancement)				19	1	10	29	24

[L= Lecture, T = Tutorials, P = Practical's & C = Credits]

Semester-IV

SL.No	Code	Category	Course	Hours per week				Credits
				L	T	P	Total Hours	
Theory								
1	23MDC4XX	(MDC)	Multidisciplinary Elective-I	3	0	0	3	3
2	23AS401	(BAS)	Numerical Methods	3	0	0	3	3
3	23EE0201	(PC)	Electrical Machines II	3	0	0	3	3
4	23EE0206	(PC)	Control Engineering	3	0	0	3	3
5	23EE0208	(PC)	Linear Integrated Circuits	3	0	0	3	3
6	*23EEPE XX	(PE)	Professional Elective - II	3	0	0	3	3
Total Credits (Theory)				18	0	0	18	18
Practical								
7	23EE0254	(P)	Electrical Machines Laboratory II	0	0	2	2	1
8	23EE0256	(P)	Electrical Measurement & Control Laboratory	0	0	2	2	1
9	23EE0258	(P)	Linear Integrated Circuits Laboratory	0	0	2	2	1
10	23EE0260	(LP/SI)	#Live Project-I & Industrial Visits	0	0	1	1	1
Total Credits (Practical)				0	0	7	7	4
Skill Enhancement								
11	23SS452	(SEC)	Teamwork & Interpersonal Skills	0	0	2	2	1
12	23CS0202	(SEC)	Artificial Intelligence and Machine Learning	0	0	2	2	1
	Total Credits (Skill Enhancement)			0	0	4	4	2
Total Credits (Theory + Practical + Skill Enhancement)				18	0	11	29	24

[L= Lecture, T = Tutorials, P = Practical's & C = Credits]

#To be carried out after 3rd Semester during semester break. Evaluation to be carried out in 4th Semester.

Semester – V

SL.No	Code	Category	Course Name	Hours per week				Credits
				L	T	P	Total Hours	
Theory								
1	23MDC5XX	(MDC)	Multidisciplinary Elective-II	3	0	0	3	3
2	23AS502	(BAS)	Discrete Mathematics	3	0	0	3	3
3	23EE0305	(PC)	Power Electronics	3	0	0	3	3
4	23EE0307	(PC)	Generation, Transmission and Distribution	3	0	0	3	3
5	*23EEPEX X	(PE)	Professional Elective - III	3	0	0	3	3
6	*23EEPEX X	(PE)	Professional Elective - IV	3	0	0	3	3
7	*23EEPEX X	(PE)	Professional Elective-V	3	0	0	3	3
Total Credits (Theory)				21	0	0	21	21
Practical								
8	23EE0355	(P)	Power Electronics Lab	0	0	2	2	1
9	23EE0357/ 23EE0363	(P)	Electrical Simulation and Programming Lab-II/ Computer Aided Manufacturing (CNC) Laboratory	0	0	2	2	1
10	23EE0359	(LP/SI)	Live Project II & Industrial Visit	0	0	1	1	1
11	23EE0361	(LP/SI)	#Industrial Training-I	0	0	1	1	1
Total Credits (Practical)				0	0	6	6	4
Skill Enhancement								
12	23SS553	(SEC)	Presentation Skills	0	0	2	2	1
13	23CS0301	(SEC)	Design Thinking and Augmented Virtual Reality/	0	0	2	2	1
Total Credits (Skill Enhancement)				0	0	4	4	2
Total Credits (Theory + Practical + Skill Enhancement)				21	0	10	31	27

[L= Lecture, T = Tutorials, P = Practical's & C = Credits]

***The XX part of the course code will depend upon the elective chosen by the student**
#To be carried out after 4th semester during semester break. Evaluation to be carried out in 5th Semester.

Semester – VI

SL.No	Code	Category	Course	Hours per week				Credits
				L	T	P	Total Hours	
Theory								
1	23MDC6XX	(MDC)	Multidisciplinary Elective-III	3	0	0	3	3
2	23EE0306	(PC)	Power System Protection	3	0	0	3	3
3	23EE0308	(PC)	Microprocessor and Microcontroller	3	0	0	3	3
4	*23EEPEXX	(PE)	Professional Elective- VI	3	0	0	3	3
5	*23EEPEXX	(PE)	Professional Elective- VII	3	0	0	3	3
6	*23EEPEXX	(PE)	Professional Elective- VIII	3	0	0	3	3
Total Credits (Theory)				18	0	0	18	18
Practical								
7	23EE0356	(P)	Power System Simulation Laboratory	0	0	2	2	1
8	23EE0358	(P)	Microprocessors and Microcontrollers Lab	0	0	2	2	1
9	23EE0360	(LP/SI)	#Live Project III & Industrial Visit	0	0	1	1	1
Total Credits (Practical)				0	0	5	5	3
Skill Enhancement								
10	23SS654	(SEC)	Professional Skills	0	0	2	2	1
11	23CS0302	(SEC)	Big Data Analytics, Tools and Techniques	0	0	2	2	1
Total Credits (Skill Enhancement)				0	0	4	4	2
Total Credits (Theory + Practical + Skill Enhancement)				18	0	9	27	23

[L= Lecture, T = Tutorials, P = Practical's & C = Credits]

***The XX part of the course code will depend upon the elective chosen by the student**
#To be carried out after 5th semester during semester break. Evaluation to be carried out in 6th Semester

Semester – VII

SL.No	Code	Category	Course	Hours per week				Credits
				L	T	P	Total Hours	
Theory								
1	23EE0407	(PE)	Professional Elective -IX	3	0	0	3	3
2	23EE0409	(PE)	Professional Elective -X	3	0	0	3	3
3	*23EEPEXX	(PE)	Professional Elective -XI	3	0	0	3	3
4	23EE0405	(PC)	Solid State Electrical Drives and Control	3	0	0	3	3
5	23EE0411	(PC)	Power System Analysis	3	0	0	3	3
Total Credits (Theory)				15	0	0	15	15
Practical								
6	23EE0455	(P)	Electric Drives and Renewable Energy Laboratory	0	0	2	2	1
7	23EE0457	(LP/SI)	**Minor Project	0	0	8(4) **	4	4
8	23EE0459	(LP/SI)	Live Project-IV & Industrial Visits	0	0	1	1	1
9	23EE0461	(LP/SI)	#Industrial Training-II	0	0	1	1	1
Total Credits (Practical)				0	0	8	8	7
Skill Enhancement								
10	23SS755	(SEC)	Aptitude & Reasoning	0	0	2	2	1
11	23CS0401	(SEC)	Data Structure and Algorithms using C++	0	0	2	2	1
Total Credits (Skill Enhancement)				0	0	4	4	2
Total Credits (Theory + Practical + Skill Enhancement)				15	0	12	27	24

[L= Lecture, T = Tutorials, P = Practical's & C = Credits]

***The XX parts of the course code will depend upon the elective chosen by the student.**

****To be monitored at the Institute Level. Teaching Load for ERP**

#To be carried out after 6th semester during semester break. Evaluation to be carried out in 7th Semester

Semester – VIII

SL.No	Code	Category	Course	Hours per week				Credits
				L	T	P	Total Hours	
Practical								
1	23EE0430	(LP/SI)	*Major Project (Industrial Internship)	0	0	24	24(6) **	12
Total Credits (Practical)				0	0	24	24(6) **	12

* To Be Monitored at The Institute Level

** Teaching Load

Department Elective Courses of Specialization in Major Degree of Electrical and Electronics Engineering

Department Professional Elective Courses

1.Specialization in Electrical and Electronics Engineering

SLNo	Code	Category	Course	L	T	P	C
1	23EEPE01	(PE)	Data acquisition and Telemetry	3	0	0	3
2	23EEPE02	(PE)	Instrumentation System	3	0	0	3
3	23EEPE03	(PE)	Sensors and Transducers	3	0	0	3
4	23EEPE04	(PE)	Wind and Solar Energy Systems	3	0	0	3
5	23EEPE05	(PE)	Python Programming	3	0	0	3
6	23EEPE06	(PE)	Solar Photovoltaic System	3	0	0	3
7	23EEPE07	(PE)	Design of Hydro Power Station	3	0	0	3
8	23EEPE08	(PE)	PLC, DCS and SCADA	3	0	0	3
9	23EEPE09	(PE)	Programming with Java	3	0	0	3
10	23EEPE10	(PE)	Mechatronics	3	0	0	3
11	23EEPE11	(PE)	Advanced Topics in Electrical Insulation	3	0	0	3
12	23EEPE12	(PE)	Reactive Power control & FACT Devices	3	0	0	3
13	23EEPE13	(PE)	Micro Electro Mechanical Systems	3	0	0	3
14	23EEPE14	(PE)	Electrical Power Utilization and Illumination	3	0	0	3
15	23EEPE15	(PE)	Design of Electrical Machines	3	0	0	3
16	23EEPE16	(PE)	Special Electrical Machines	3	0	0	3
17	23EEPE17	(PE)	Electrical Safety and Safety Management	3	0	0	3
18	23EEPE18	(PE)	Electrical Systems Design for Building	3	0	0	3
19	23EEPE19	(PE)	Communication Systems	3	0	0	3
20	23EEPE20	(PE)	Wireless Communication Systems	3	0	0	3
21	23EEPE21	(PE)	Switched Mode Power Conversion	3	0	0	3
22	23EEPE22	(PE)	Power Converter Analysis and Design	3	0	0	3
23	23EEPE23	(PE)	Advanced Control Theory	3	0	0	3
24	23EEPE24	(PE)	Aircraft Electronic Systems	3	0	0	3
25	23EEPE25	(PE)	Power System Harmonics	3	0	0	3
26	23EEPE26	(PE)	Vehicular Power Systems	3	0	0	3
27	23EEPE27	(PE)	Industrial Power System	3	0	0	3
28	23EEPE28	(PE)	Smart Grid	3	0	0	3
29	23EEPE29	(PE)	Micro Grid	3	0	0	3
30	23EEPE30	(PE)	Power System Deregulation	3	0	0	3
31	23EEPE31	(PE)	Modern Power System Analysis	3	0	0	3
32	23EEPE32	(PE)	High Voltage Engineering	3	0	0	3
33	23EEPE33	(PE)	Power Quality	3	0	0	3
34	23EEPE34	(PE)	Power System Optimization	3	0	0	3
35	23EEPE35	(PE)	Energy Storage Technology	3	0	0	3
36	23EEPE36	(PE)	Power Electronics for Renewable Energy Systems	3	0	0	3
37	23EEPE37	(PE)	Substation Design	3	0	0	3
38	23EEPE38	(PE)	Hybrid Electric Vehicles	3	0	0	3
39	23EEPE39	(PE)	Energy Management and Audit	3	0	0	3
40	23EEPE40	(PE)	Power System operation and Control	3	0	0	3
41	23AS701	(PE)	Operation Research	3	0	0	3
42	23EEPE42	(PE)	Modern Optimization Techniques	3	0	0	3
43	23EEPE43	(PE)	Soft Computing	3	0	0	3
44	23EEPE44	(PE)	Production to Robotics & Industrial Automation	3	0	0	3
45	23EEPE45	(PE)	Cyber Security	3	0	0	3
46	23EEPE46	(PE)	Smart Grid Technologies & IoT	3	0	0	3
47	23EEPE47	(PE)	Distributed Generation and Microgrids	3	0	0	3
48	23EEPE48	(PE)	Infrastructure For Smart Cities	3	0	0	3
49	23EEPE49	(PE)	Electric Vehicle Machines and Drives.	3	0	0	3

50	23EEPE50	(PE)	Real-Time Control of Power Systems and Energy Management	3	0	0	3
51	23EEPE51	(PE)	Distributed System Planning and Automation	3	0	0	3
52	23EEPE52	(PE)	Digital Communication	3	0	0	3
53	23EEPE53	(PE)	Optical Fiber Communication	3	0	0	3
54	23EEPE54	(PE)	Mobile Communication	3	0	0	3
55	23EEPE55	(PE)	Data Communication Networks	3	0	0	3
56	23EEPE56	(PE)	Wireless Communication	3	0	0	3
57	23EEPE57	(PE)	Satellite Communication	3	0	0	3
58	23EEPE58	(PE)	Embedded Systems Design	3	0	0	3
59	23EEPE59	(PE)	Radar and Imaging systems	3	0	0	3
60	23EEPE60	(PE)	Virtual Instrumentation	3	0	0	3
61	23EEPE61	(PE)	Microelectronics	3	0	0	3
62	23EEPE62	(PE)	Computer Architecture and very large-scale Integration	3	0	0	3
63	23EEPE63	(PE)	Biomedical Engineering	3	0	0	3
64	23EEPE64	(PE)	Computer Aided Design and Manufacturing	3	0	0	3
65	23EEPE65	(PE)	Electrical & Electronics, Measurements and Instrumentation	3	0	0	3
66	23EEPE66	(PE)	Electron Device s and Circuits	3	0	0	3
67	23EEPE67	(PE)	Discrete Transform and Signal Processing	3	0	0	3
68	23EEPE68	(PE)	Renewable Energy Sources	3	0	0	3
69	23EEPE69	(PE)	Modern Control Systems				

2. Specialization in Hybrid Electric Vehicle and Energy Management

SLN o	Code	Category	Course	L	T	P	C
			Professional Elective- I/II/III/IV/V				
1	23EEPE65	(PE)	Electronic Measurements and Instrumentation	3	0	0	3
2	23EEPE66	(PE)	Electron Device s and Circuits	3	0	0	3
3	23EEPE67	(PE)	Discrete Transform and Signal Processing	3	0	0	3
4	23EEPE60	(PE)	Virtual Instrumentation	3	0	0	3
5	23EEPE09	(PE)	Programming with Java	3	0	0	3
6	23EEPE68	(PE)	Renewable Energy Sources	3	0	0	3
7	23EEPE03	(PE)	Sensors and Transducers	3	0	0	3
8	23EEPE51	(PE)	Distributed System Planning and Automation	3	0	0	3
9	23EEPE45	(PE)	Cyber Security	3	0	0	3
10	23AS701	(PE)	Operation Research	3	0	0	3
			Professional Elective- VI/VII/VIII				
1	23EEPE38	(PE)	Hybrid Electric Vehicles	3	0	0	3
2	23EEPE35	(PE)	Energy Storage Technology	3	0	0	3
3	23EEPE49	(PE)	Electric Vehicle Machines and Drives.	3	0	0	3
4	23EEPE26	(PE)	Vehicular Power Systems	3	0	0	3
5	23EEPE18	(PE)	Electrical Systems Design for Building	3	0	0	3
6	23EEPE21	(PE)	Switched Mode Power Conversion	3	0	0	3
7	23EEPE39	(PE)	Energy Management and Audit	3	0	0	3
8	23EEPE64	(PE)	Computer Aided Design and Manufacturing	3	0	0	3
9	23EEPE17	(PE)	Electrical Safety and Safety Management	3	0	0	3
			Professional Elective- IX/X/XI				
1	23EEPE05	(PE)	Python Programming	3	0	0	3
2	23EEPE42	(PE)	Modern Optimization Techniques	3	0	0	3
3	23EEPE48	(PE)	Energy Management for Smart cities	3	0	0	3
4	23EEPE50	(PE)	Real-Time Control of Power Systems and Energy Management	3	0	0	3
	23EEPE08	(PE)	PLC, DCS and SCADA	3	0	0	3

3.

3.Specialization in Renewable & Sustainable Energy Engineering

SL No	Code	Category	Course	L	T	P	C
			Professional Elective- I/II/III/IV/V				
1	23EEPE65	(PE)	Electronic Measurements and Instrumentation	3	0	0	3
2	23EEPE66	(PE)	Electron Device s and Circuits	3	0	0	3
3	23EEPE67	(PE)	Discrete Transform and Signal Processing	3	0	0	3
4	23EEPE60	(PE)	Virtual Instrumentation	3	0	0	3
5	23EEPE09	(PE)	Programming with Java	3	0	0	3
6	23EEPE68	(PE)	Renewable Energy Sources	3	0	0	3
7	23EEPE03	(PE)	Sensors and Transducers	3	0	0	3
8	23EEPE51	(PE)	Distributed System Planning and Automation	3	0	0	3
9	23EEPE45	(PE)	Cyber Security	3	0	0	3
10	23AS701	(PE)	Operation Research	3	0	0	3
			Professional Elective- VI/VII/VIII				
1	23EEPE06	(PE)	Solar Photovoltaic System	3	0	0	3
2	23EEPE35	(PE)	Energy Storage Technology	3	0	0	3
3	23EEPE36	(PE)	Power Electronics for Renewable Energy Systems	3	0	0	3
4	23EEPE42	(PE)	Modern Optimization Techniques	3	0	0	3
5	23EEPE05	(PE)	Solar Energy system and Maintenance	3	0	0	3
6	23EEPE29	(PE)	Micro Grid	3	0	0	3
7	23EEPE50	(PE)	Programming with JAWA	3	0	0	3
8	23EEPE47	(PE)	Distributed Generation and Microgrids	3	0	0	3
9	23EEPE28	(PE)	Smart Grid	3	0	0	3
10	23EEPE49	(PE)	Electric Vehicle Machines and Drives.	3	0	0	3
			Professional Elective- IX/X/XI				
1	23EEPE07	(PE)	Design of Hydro Power Station	3	0	0	3
2	23EEPE04	(PE)	Wind and Solar Energy Systems	3	0	0	3
3	23EEPE50	(PE)	Real-Time Control of Power Systems and Energy Management	3	0	0	3
4	23EEPE39	(PE)	Energy Management and Audit	3	0	0	3
5	23EEPE46	(PE)	Smart Grid Technologies & IoT	3	0	0	3
6	23EEPE48	(PE)	Infrastructure For Smart Cities	3	0	0	3
7	23EEPE48	(PE)	Python Programming	3	0	0	3

4. Specialization in IoT based Industrial Automation & Smart Grid

SL.No	Code	Category	Course	L	T	P	C
Professional Elective- I/II/III/IV/V							
1	23EEPE65	(PE)	Electronic Measurements and Instrumentation	3	0	0	3
2	23EEPE66	(PE)	Electron Device s and Circuits	3	0	0	3
3	23EEPE67	(PE)	Discrete Transform and Signal Processing	3	0	0	3
4	23EEPE60	(PE)	Virtual Instrumentation	3	0	0	3
5	23EEPE09	(PE)	Programming with Java	3	0	0	3
6	23EEPE68	(PE)	Renewable Energy Sources	3	0	0	3
7	23EEPE03	(PE)	Sensors and Transducers	3	0	0	3
8	23EEPE51	(PE)	Distributed System Planning and Automation	3	0	0	3
9	23EEPE45	(PE)	Cyber Security	3	0	0	3
10	23AS701	(PE)	Operation Research	3	0	0	3
Professional Elective- VI/VII/VIII/ IX/X/XI							
1	23EEPE44	(PE)	Introduction to Robotics & Industrial Automation	3	0	0	3
2	23EEPE46	(PE)	Smart Grid Technologies & IoT	3	0	0	3
3	23EEPE48	(PE)	Energy Management for Smart cities	3	0	0	3
4	23EEPE10	(PE)	Mechatronics	3	0	0	3
5	23EEPE18	(PE)	Electrical Systems Design for Building	3	0	0	3
6	23EEPE51	(PE)	Distributed System Planning and Automation	3	0	0	3
7	23EEPE42	(PE)	Modern Optimization Techniques	3	0	0	3
8	23EEPE43	(PE)	Python Programming	3	0	0	3
9	23EEPE45	(PE)	Programming with JAWA	3	0	0	3
10	23EEPE47	(PE)	Industrial Power System	3	0	0	3
11	23EEPE33	(PE)	Power Quality	3	0	0	3
12	23EEPE29	(PE)	Micro Grid	3	0	0	3
13	23EEPE50	(PE)	Real-Time Control of Power Systems and Energy Management	3	0	0	3

Ability Enhancement Courses

SL. No	Code	Category	Course	L	T	P	C
1	23AEC101/23AEC0201	(AEC)	Professional English	2	0	0	2
2	23AEC151/23AEC251	(AEC)	Professional English Lab	0	0	2	1
3	23AEC102/23AEC103/23AEC104	(AEC)	Hindi-I/German-I/French-I	2	0	0	2
4	23AEC202/23AEC203/AEC204	(AEC)	Hindi-II/German-II/French-II	2	0	0	2

List of Skill Enhancement Courses

SL.No	Subject Code	Course	Category	L	T	P	Credits
Technical Training							
1	23CS0201	Essentials of Blockchain and IoT	SEC	0	0	2	1
2	23CS0202	Artificial Intelligence and Machine Learning	SEC	0	0	2	1
3	23CS0301	Design Thinking and Augmented Virtual Reality – Level	SEC	0	0	2	1
4	23CS0302	Big Data Analytics, Tools and Techniques	SEC	0	0	2	1
5	23CS0401	Data Structure and Algorithms using C++	SEC	0	0	2	1
Soft Skill							
6	23SS351	Effective Communication Skills	SEC	0	0	2	1
7	23SS452	Teamwork & Interpersonal Skills	SEC	0	0	2	1
8	23SS553	Presentation Skills	SEC	0	0	2	1
9	23SS654	Professional Skills	SEC	0	0	2	1
10	23AR755	Aptitude & Reasoning	SEC	0	0	2	1

Value Added Courses

SL.No	Code	Category	Course	L	T	P	C
1	23ESEB10 1/201	(VAC)	Environment Bioengineering	2	0	0	2
2	23VACXX	(VAC)	Indian Constitution and Polity	2	0	0	2
3	23VACXX	(VAC)	Sports, Yoga and Fitness	1	0	2	2

Multidisciplinary (Humanities and Social Sciences Courses) Courses (MDC))

Code	Category	Course	L	T	P	C
23MDC401/ 23MDC402/ 23MDC403/ 23MDC404/ 23MDC405	(MDC-I)	Statistical Methods	3	0	0	3
		Environmental Geosciences & Disaster Management	3	0	0	3
		IPR in Business	3	0	0	3
		Library Information Sciences & Media Literacy	3	0	0	3
		Management Process & Organizational Behaviour	3	0	0	3
23MDC501/ 23MDC502/ 23MDC503/ 23MDC504/ 23MDC505	(MDC-II)	Photonics	2	0	2	3
		Chemistry & Society	3	0	0	3
		Psychology and Emotional Intelligence	3	0	0	3
		Indian Economy	3	0	0	3
		Creating an Entrepreneurial Mind	3	0	0	3
23MDC601/ 23MDC602/ 23MDC603/ 23MDC604	(MDC-III)	Life Sciences & Public Health	3	0	0	3
		Electoral Literacy in India	3	0	0	3
		Personal Financial Planning	3	0	0	3
		Interior Design	3	0	0	3