Maulana Azad National Institute of Technology, Bhopal - 462003

SCHEME FOR B.TECH. (Electrical Engineering)
(2024 Admitted Batch Onwards)

First Year Credits (Cumulative) 41

2nd Year -THIRD SEMESTER:

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
MTH24231	Applied Numerical Methods	3	1	-	4
ME24252	Fundamentals of Design Methods	2	1	-	3
EE24211	EM Fields and Materials	3	-	-	3
EE24212	EMEC-I	3	-	-	3
EE24213	Network Analysis	3	-	-	3
EE24214	Measurement and Instrumentation	3	-	-	3
EE24215	EMEC-I Lab	-	-	2	1
EE24216	Network Lab	-	-	2	1
EE24217	Measurement and Instrumentation Lab	-	-	2	1
EE24218	Professional Practices	-	2	-	2
	Minor-1	3*	-	-	3*
	Total Hours =27	**17**	**4**	**6**	**24**
				Total Credits (Cumulative)	**65**
Additional Subject: - National Cadet Corps (NCC)					
NCC24251	National Cadet Corps III	**1**	**5**	**1**	**7**
				Total Credits (Cumulative)	**11**

FOURTH SEMESTER:

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
HUM24251	Fundamentals of Entrepreneurship	3	-	-	3
EE24221	Power System	3	-	-	4
EE24222	EMEC-II	3	1	-	3
EE24223	Electronic Devices & Circuits	3	-	-	3
EE24224	Generation of Electrical Power	3	-	-	3
EE24225	Signals and Systems	3	-	-	3
EE24226	EMEC-II Lab	-	-	2	1
EE24227	Electronic Devices & Circuits Lab	-	-	2	1
EE24228	Project Based Lab-1	-	-	2	1
	Minor-2	3*	-	-	3*
	Total Hours =25	**18**	**1**	**6**	**22**
				Total Credits (Cumulative)	**87**
Additional Subject: - National Cadet Corps (NCC)					
NCC24252	National Cadet Corps IV	**2**	**-**	**1**	**3**
				Total Credits (Cumulative)	**14**

3rd Year-FIFTH SEMESTER:

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
CS24352	Data Structures and Algorithm	3	1	-	4
EE24311	Power System Protection	3	1	-	4
EE24312	Power Electronics	3	-	-	3
EE24313	Linear Control system	3	-	-	3
EE24314	Utilization of Electrical Energy	3	-	-	3
EE24351-24362	Department Elective-1	3	-	-	3
EE24315	Power System Protection Lab	-	-	2	1
EE24316	Power Electronics Lab	-	-	2	1
EE24317	Linear Control System Lab	-	-	2	1
EE24318	Internship/Industrial Training	-	-	2	1
EE24319	Skill based learning	-	-	2*	1*
	Minor-3	3*	-	-	3*
Total Hours =28		**18**	**2**	**8**	**24**
Total Credits (Cumulative)					**111**
Additional Subject: - National Cadet Corps (NCC)					
NCC24351	National Cadet Corps V	**1**	**5**	**1**	**7**
Total Credits (Cumulative)					**21**

SIXTH SEMESTER:

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
ME24351	Engineering Management	3	-	-	3
EE24321	Electrical Drives	3	1	-	4
EE24322	Microprocessor and Microcontrollers	3	-	-	3
EE24323	Modern Control System	3	-	-	3
EE24351-24362	Department Elective-2	3	-	-	3
EE24324	Electrical Drives Lab	-	-	2	1
EE24325	Microprocessor and Microcontroller Lab	-	-	2	1
EE24326	Modern Control System Lab	-	-	2	1
EE24327	Project Based Learning (Minor project)	-	-	2	1
	Minor-4	3*	-	-	3*
Total Hours =24		**15**	**1**	**8**	**20**
Total Credits (Cumulative)					**131**
Additional Subject: - National Cadet Corps (NCC)					

NCC24352	National Cadet Corps VI	**2**	**-**	**1**	**3**
				Total Credits (Cumulative)	**24**

4th Year-SEVENTH SEMESTER:

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
HUM24451	Engineering Economics and IPR	3	-	-	3
EE24411	EMEC-III	3	-	-	3
EE24451-24460	Department Elective-3	3	-	-	3
EE24451-24460	Department Elective-4	3	-	-	3
	Open Elective	3	-	-	3
EE24412	EMEC-III Lab	-	-	2	1
EE24413	Project Based Lab-2 (Major Project)	-	-	4	2
EE24414	Industrial/ Field Training	-	-	2	1
EE24415	Skill based learning	-	-	2*	1*
	Minor-5	3*	-	-	3*
	Total Hours =23	**15**	**-**	**8**	**19**
				Total Credits (Cumulative)	**150**

EIGHTH SEMESTER:

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
EE24451-24460	Department Elective-5 (NPTEL/SWAYAM Courses only)	3	-	-	3
EE24451-24460	Department Elective-6 (NPTEL/SWAYAM Courses only)	3	-	-	3
EE24421	Internship/ Major Project	-	-	16	8
EE24422	General Proficiency	-	-	-	1
	Total Hours =22	**6**	**-**	**16**	**15**
				Total Credits (Cumulative)	**165**

List of Electives

Departmental Electives

Third Year:

S. No.	Subject Code	Subject Name
1.	EE24351	EHV AC & DC
2.	EE24352	Machine Design
3.	EE24353	Digital Electronics
4.	EE24354	AI Techniques
5.	EE24355	Power Quality
6.	EE24356	Integrated Energy System
7.	EE24357	Reactive Power Control
8.	EE24358	Power System Reliability
9.	EE24359	IoT in Energy and Industry
10.	EE24360	System Engineering
11.	EE24361	Electronic Instrumentation
12.	EE24362	Smart Grids

Fourth Year:

S. No.	Subject Code	Subject Name
1.	EE24451	DSP and Its Applications
2.	EE24452	Power System Deregulation
3.	EE24453	Power System Stability & Control
4.	EE24454	Energy Management
5.	EE24455	Power System Restructuring, Economics and Power Markets
6.	EE24456	Solar PV Technology and Applications
7.	EE24457	Electrical Vehicle Technology
8.	EE24458	Application of Power Electronics to Power System
9.	EE24459	Industrial Power System Design and Analysis
10.	EE24460	Industrial Electronics

(A) Guideline for Professional Practice: -

1. Historical background and Evolution of the Discipline.
2. Government Policies and Schemes relevant to the Discipline.
3. Study of Codes/ Standards/ Schedule of Rates/ Manuals relevant to the Discipline.
4. Electrical Engineering Workshop
5. Avenues for outreach activities and scope in Discipline.

(B) **Project Based Labs-1 & 2 (Minor and Major Project)**

Design and development of innovation projects on real life/ industrial/ state-National level hackathon problems.

Evaluation Guidelines: -

Theory	**Practical**
Sessional Marks – 50 1. Mini Test-10 2. Mid Term Exam -20 3. Attendance -10 4. Assignment/Quiz -10	**Sessional Marks – 60** 1. Lab Record/ Lab Performance-20 2. Mid Term Viva -30 3. Attendance -10
End Term Marks– 50 1. End Term Examination – 50	**End Term Marks – 40** 1. Experiment conduction and write-up – 20 2. Viva-voce - 20