

**DEPARTMENT OF ELECTRICAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

Program Code: XXX **M.Tech. (Electric Vehicle Technology)**
Department: EE **Department of Electrical Engineering**
Year: I

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight(%)				
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
Semester-I(Autumn)														
1.	EEN-501	Electric Vehicles: Power Train & Drives	PCC	4	3	0	2	3	-	10-25	25	15-25	30-40	-
2.	EEN-503	Energy Storage Techniques	PCC	4	3	0	0	3	-	20-35	-	20-30	40-50	-
3.	EEN-505	Charging Infrastructure	PCC	4	3	0	2	3	-	10-25	25	15-25	30-40	-
4.	EEN-507	Control Systems for Electric Vehicle	PCC	4	3	0	2	3	-	10-25	25	15-25	30-40	-
5.	EEN-509	Automobile Engineering for Electric Vehicles	PCC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
		Total		20										
Semester-II(Spring)														
1.	EEN-700	Seminar	SEM	2	-	-	-	-	-	-	-	-	100	-
2.		Program Elective-I	PEC	4	-	-	-	-	-	-	-	-	-	-
3.		Program Elective-II	PEC	4	-	-	-	-	-	-	-	-	-	-
4.		Program Elective-III	PEC	4	-	-	-	-	-	-	-	-	-	-
5.		Program Elective-IV	PEC	4	-	-	-	-	-	-	-	-	-	-
		Total		18										

**DEPARTMENT OF ELECTRICAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

Program Code: XXX **M.Tech. (Electric Vehicle Technology)**
Department: EE **Department of Electrical Engineering**
Year: II

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight(%)				
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
Semester-I(Autumn)														
1.	EEN-701A	Thesis Stage-I (to be continued next semester)	DIS	12	-	-	-	-	-	-	-	-	100	-
		Total		12										
Note: Students can take 1or 2audit courses as advised by the supervisor, if required.														
Semester-II(Spring)														
1.	EEN-701B	Thesis Stage-II (continued from III semester)	DIS	18	-	-	-	-	-	-	-	-	100	-
		Total		18										

Summary				
Semester	1	2	3	4
Semester-wise Total Credits	20	18	12	18
Total Credits	68			

Program Elective Courses for M.Tech. (Electric Vehicle Technology)

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight(%)				
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1.	EEN-540	Advanced Power Electronics	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
2.	EEN-542	Power Electronic Controlled Electric Drives	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
3.	EEN-641	Microcontroller and Its Applications to Power Converters	PEC	4	3	0	2	3	-	10-25	25	15-25	30-40	-
4.	EEN-642	DSP Controlled Electric Drives	PEC	4	3	0	2	3	-	10-25	25	15-25	30-40	-
5.	EEN-643	Electric Drives for Hybrid Vehicles	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
6.	EEN-644	Design of Electric Drives	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
7.	EEN-645	Instrumentation in Electric Drives	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
8.	EEN-646	Drive System in Electric Traction	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
9.	EEN-647	Control Techniques in Power Electronics for AC Drives	PEC	4	3	0	2	3	-	10-25	25	15-25	30-40	-
10.	EEN-648	Pulse Width Modulation for Power Converters	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
11.	EEN-650	Switch Mode Power Supply	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
12.	EEN-655	Special Machines	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
13.	EEN-521	Digital Signal and Image Processing	PEC	4	3	0	2	3	-	10-25	25	15-25	30-40	-
14.	EEN-524	Intelligent Sensors and Instrumentation	PEC	4	3	0	2	3	-	10-25	25	15-25	30-40	-
15.	EEN-611	FPGA Implementation of Signal Processing Systems	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-

16.	EEN-621	Noise and Interference in Instrumentation	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
17.	EEN-673	Design of WBG Device based Power Converters	PEC	4	3	0	2/2	3	-	15-30	20	15-25	30-40	-
18.	EEN-668	Digital Protection of Power Systems	PEC	4	3	0	2	3	-	10-25	25	15-25	30-40	-
19.	EEN-680	Machine Learning	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
20.	EEN-682	Advanced Digital System Design	PEC	4	3	0	2	3	-	10-25	25	15-25	30-40	-
21.	EEN-697	Dynamics and Control of Autonomous Vehicles	PEC	4	3	1	2/2	3	-	15-30	20	15-25	30-40	-
22.	EEN-699	Smart Grid for EVs	PEC	4	3	0	0	3	-	20-35	-	20-30	40-50	