DEPARTMENT OF ELECTRICAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code : **XXX M.Tech. (Electric Vehicle Technology)**
Department : **Department of Electrical Engineering**
Year : **I**
Model : **2**

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**
Semester-I (Autumn)									
1.	EEC-521	Electric Vehicles: Power Train and Drives	PCC	4	3	0	2	3	0
2.	EEC-523	Energy Storage Techniques	PCC	3	3	0	0	3	0
3.	EEC-525	Charging Infrastructure	PCC	4	3	0	2	3	0
4.	EEC-527	Control Systems for Electric Vehicle	PCC	4	3	0	2	3	0
5.		Social Science Course	SSC	2	-	-	-	-	-
		Total		**17**					
Semester-II (Spring)									
1.		Program Elective-I	PEC	4	-	-	-	-	-
2.		Program Elective-II	PEC	4	-	-	-	-	-
3.		Program Elective-III	PEC	4	-	-	-	-	-
4.		Program Elective-IV	PEC	4	-	-	-	-	-
5.		Science, Technology, and Advanced Research-tools	STAR	3	-	-	-	-	-
6.	EEC-700	Seminar	SEM	2	-	-	-	-	-
		Total		**21**					

DEPARTMENT OF ELECTRICAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code : **XXX M.Tech. (Electric Vehicle Technology)**
Department : **Department of Electrical Engineering**
Year : **II**
Model : **2**

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**
Semester-I (Autumn)									
1.	EEC-691	Internship Social Activity	ISA	3	-	-	-	-	-
2.	EEC-701A	Thesis Stage-I	THESIS	10	-	-	-	-	-
		Total		**13**					
Semester-II (Spring)									
1.	EEC-701B	Thesis Stage-II	THESIS	14	-	-	-	-	-
		Total		**14**					

Summary				
Semester	**1**	**2**	**3**	**4**
Semester-wise Total Credits	17	21	13	14
Total Credits	**65**			

M.Tech. (Electric Vehicle Technology)

Program Elective Courses

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
1.	EEL-641	Microcontroller and Its Applications to Power Converters	PEC	4	3	0	2	3	0
2.	EEL-542	Advanced Electric Drives	PEC	4	3	0	2	3	0
3.	EEL-643	Electric Drives for Hybrid Vehicles	PEC	4	3	1	0	3	0
4.	EEL-647	Control Techniques in Power Electronics for AC Drives	PEC	4	3	0	2	3	0
5.	EEL-648	Pulse Width Modulation for Power Converters	PEC	4	3	1	0	3	0
6.	EEL-650	Switch Mode Power Supply	PEC	4	3	1	0	3	0
7.	EEL-655	Special Machines	PEC	4	3	1	0	3	0
8.	EEL-611	FPGA Implementation of Signal Processing Systems	PEC	4	3	0	2	3	0
9.	EEL-673	Design of WBG Device based Power Converters	PEC	4	3	0	2	3	0
10.	EEL-508	Machine Learning	PEC	4	3	1	0	3	0
11.	EEL-682	Advanced Digital System Design	PEC	4	3	0	2	3	0
12.	EEL-697	Dynamics and Control of Autonomous Vehicles	PEC	4	3	1	2/2	3	0
13.	EEL-672	Smart Grid Technology	PEC	4	3	0	2	3	0
14.	EEL-510	Digital Control Implementation for Power Converters	PEC	4	3	0	2	3	0
15.	EEL-634	High Power Converters for EV	PEC	4	3	1	0	3	0
16.	EEL-695	Modelling and Control of Sustainable Energy Systems	PEC	4	3	1	0	3	0
17.	EEL-694	Advances in Model Order Reduction Techniques	PEC	4	3	1	0	3	0
18.	EEL-613	Sliding Mode Control and Observation	PEC	4	3	1	0	3	0
19.	EEL-512	Low Voltage Systems for EVs	PEC	4	3	1	0	3	0
20.	EEL-513	Microgrid Systems	PEC	4	3	0	2	3	0

M.Tech. (Electric Vehicle Technology)

Science, Technology, and Advanced Research-tools Basket

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**
1.	EET-502	Electric Vehicle Systems	STAR	3	3	0	0	3	0

DEPARTMENT OF ELECTRICAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code : **XXX Master of Science (by Research) in Electric Vehicle Technology**
Department : **Department of Electrical Engineering**
Year : **I**
Model : **3**

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**
Semester-I (Autumn)									
1.	EEC-521	Electric Vehicles: Power Train and Drives	PCC	4	3	0	2	3	0
2.	EEC-523	Energy Storage Techniques	PCC	3	3	0	0	3	0
3.	EEC-525	Charging Infrastructure	PCC	4	3	0	2	3	0
4.	EEC-527	Control Systems for Electric Vehicle	PCC	4	3	0	2	3	0
5.		Social Science Course	SSC	2	-	-	-	-	-
		Total		**17**					
Semester-II (Spring)									
1.		Program Elective-I	PEC	4	-	-	-	-	-
2.	EEC-751A	Thesis Stage-I	THESIS	14	-	-	-	-	-
		Total		**18**					

DEPARTMENT OF ELECTRICAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code : **XXX Master of Science (by Research) in Electric Vehicle Technology**
Department : **Department of Electrical Engineering**
Year : **II**
Model : **3**

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	**Subject Code**	**Course Title**	**Subject Area**	**Credits**	**L**	**T**	**P**	**Theory**	**Practical**
Semester-I (Autumn)									
1.	EEC-751B	Thesis Stage-II	THESIS	15	-	-	-	-	-
		Total		**15**					
Semester-II (Spring)									
1.	EEC-751C	Thesis Stage-III	THESIS	16	-	-	-	-	-
		Total		**16**					

Summary				
Semester	**1**	**2**	**3**	**4**
Semester-wise Total Credits	17	18	15	16
Total Credits	**66**			

Master of Science (by Research) in Electric Vehicle Technology

Program Elective Courses

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
1.	EEL-641	Microcontroller and Its Applications to Power Converters	PEC	4	3	0	2	3	0
2.	EEL-542	Advanced Electric Drives	PEC	4	3	0	2	3	0
3.	EEL-643	Electric Drives for Hybrid Vehicles	PEC	4	3	1	0	3	0
4.	EEL-647	Control Techniques in Power Electronics for AC Drives	PEC	4	3	0	2	3	0
5.	EEL-648	Pulse Width Modulation for Power Converters	PEC	4	3	1	0	3	0
6.	EEL-650	Switch Mode Power Supply	PEC	4	3	1	0	3	0
7.	EEL-655	Special Machines	PEC	4	3	1	0	3	0
8.	EEL-611	FPGA Implementation of Signal Processing Systems	PEC	4	3	0	2	3	0
9.	EEL-673	Design of WBG Device based Power Converters	PEC	4	3	0	2	3	0
10.	EEL-508	Machine Learning	PEC	4	3	1	0	3	0
11.	EEL-682	Advanced Digital System Design	PEC	4	3	0	2	3	0
12.	EEL-697	Dynamics and Control of Autonomous Vehicles	PEC	4	3	1	2/2	3	0
13.	EEL-672	Smart Grid Technology	PEC	4	3	0	2	3	0
14.	EEL-510	Digital Control Implementation for Power Converters	PEC	4	3	0	2	3	0
15.	EEL-634	High Power Converters for EV	PEC	4	3	1	0	3	0
16.	EEL-695	Modelling and Control of Sustainable Energy Systems	PEC	4	3	1	0	3	0
17.	EEL-694	Advances in Model Order Reduction Techniques	PEC	4	3	1	0	3	0
18.	EEL-613	Sliding Mode Control and Observation	PEC	4	3	1	0	3	0
19.	EEL-512	Low Voltage systems for EVs	PEC	4	3	1	0	3	0
20.	EEL-513	Microgrid Systems	PEC	4	3	0	2	3	0