DEPARTMENT OF ELECTRICAL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code : **XXX M.Tech. (Advanced Instrumentation and Artificial Intelligence)**
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-531	Intelligent Sensors and Instrumentation	PCC	4	3	0	2	3	0
2.	EEC-533	Advances in Signal and Image Processing	PCC	4	3	0	2	3	0
3.	EEC-535	Concepts of Artificial Intelligence and Machine Learning	PCC	4	3	1	0	3	0
4.	EEC-537	Data Science and Instrumentation	PCC	4	3	0	2	3	0
5.		Social Science Course	SSC	2	-	-	-	-	-
		Total		**18**					
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
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Program Code : **XXX M.Tech. (Advanced Instrumentation and Artificial Intelligence)**
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	18	21	13	14
Total Credits	**66**			

M.Tech. (Advanced Instrumentation and Artificial Intelligence)

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-514	AI Applications in Signal Processing	PEC	4	3	1	0	3	0
2.	EEL-515	AI Applications in Image Processing	PEC	4	3	1	0	3	0
3.	EEL-516	Bioelectric Signals and Processing	PEC	4	3	1	0	3	0
4.	EEL-517	FPGA Implementation of Signal Processing Systems	PEC	4	3	1	0	3	0
5.	EEL-518	Medical Robotics	PEC	4	3	1	0	3	0
6.	EEL-519	Introduction to AI and ML tools	PEC	4	3	1	0	3	0

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-503	Medical Image Processing	STAR	3	2	0	2	3	0

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Program Code : **XXX Master of Science (by Research) in Advanced Instrumentation and Artificial Intelligence**
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-531	Intelligent Sensors and Instrumentation	PCC	4	3	0	2	3	0
2.	EEC-533	Advances in Signal and Image Processing	PCC	4	3	0	2	3	0
3.	EEC-535	Concepts of Artificial Intelligence and Machine Learning	PCC	4	3	1	0	3	0
4.	EEC-537	Data Science and Instrumentation	PCC	4	3	0	2	3	0
5.		Social Science Course	SSC	2	-	-	-	-	-
		Total		**18**					
Semester-II (Spring)									
1.		Program Elective-I	PEC	4	-	-	-	-	-
2.	EEC-751A	Thesis Stage-I	THESIS	14	-	-	-	-	-
		Total		**18**					

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Program Code : **XXX Master of Science (by Research) in Advanced Instrumentation and Artificial Intelligence**
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	18	18	15	16
Total Credits	**67**			

Master of Science (by Research) in Advanced Instrumentation and Artificial Intelligence

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-514	AI Applications in Signal Processing	PEC	4	3	1	0	3	0
2.	EEL-515	AI Applications in Image Processing	PEC	4	3	1	0	3	0
3.	EEL-516	Bioelectric Signals and Processing	PEC	4	3	1	0	3	0
4.	EEL-517	FPGA Implementation of Signal Processing Systems	PEC	4	3	1	0	3	0
5.	EEL-518	Medical Robotics	PEC	4	3	1	0	3	0
6.	EEL-519	Introduction to AI and ML tools	PEC	4	3	1	0	3	0