MEHTA FAMILY SCHOOL OF DATA SCIENCE AND ARTIFICIAL INTELLIGENCE
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code : **XXX M.Tech. (Artificial Intelligence)**
Department : **Mehta Family School of Data Science and Artificial Intelligence**
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.	DAC-501	Machine Learning	PCC	4	3	1	0	3	0
2.	DAC-503	Essential Mathematics for AI	PCC	4	3	1	0	3	0
3.	DAC-505	Advanced Data Structures and Algorithms	PCC	4	3	1	0	3	0
4.	DAC-507	Programming for AI	PCC	3	0	0	6	0	3
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.	DAC-700	Seminar	SEM	2	-	-	-	-	-
		Total		**21**					

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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.	DAC-691	Internship Social Activity	ISA	3	-	-	-	-	-
2.	DAC-701A	Thesis Stage-I	THESIS	10	-	-	-	-	-
		Total		**13**					
Semester-II (Spring)									
1.	DAC-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. (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.	DAL-501	Convex Optimization in Machine Learning	PEC	4	3	1	0	3	0
2.	DAL-502	Deep Learning	PEC	4	3	1	0	3	0
3.	MAL-551	Numerical Optimization	PEC	4	3	1	0	3	0
4.	DAL-503	Introduction to Compressive Sensing	PEC	4	3	1	0	3	0
5.	DAL-504	Neuromorphic Computing with Emerging Memories and Architectures	PEC	4	3	1	0	3	0
6.	DAL-558	Data Stream Mining	PEC	4	3	1	0	3	0
7.	DAL-559	Stochastic Processes and their Applications	PEC	4	3	1	0	3	0
8.	DAL-522	Computer Architecture for AI	PEC	4	3	1	0	3	0
9.	DAL-505	Artificial Intelligence for Decision Making	PEC	4	3	1	0	3	0
10.	DAL-561	AI for Earth Observations	PEC	4	3	1	0	3	0
11.	DAL-506	Applications of AI in Physics	PEC	4	3	1	0	3	0
12.	DAL-565	Computer Vision	PEC	4	3	1	0	3	0
13.	DAL-507	Game Theory	PEC	4	3	1	0	3	0
14.	DAL-567	Introduction to Materials Informatics	PEC	4	3	1	0	3	0
15.	ECL-526	Statistical Machine Learning for Variation-Aware Electronic Device and Circuit Simulation	PEC	4	3	1	0	3	0
16.	EEL-581	Intelligent Control Techniques	PEC	4	3	0	2	3	0
17.	DAL-508	Applications of AI in Biology	PEC	4	3	1	0	3	0
18.	DAL-509	VLSI Architectures for AI in CMOS Technology	PEC	4	3	1	0	3	0
19.	DAL-584	Product and Process Optimization	PEC	4	3	1	0	3	0
20.	DAL-585	Natural Language Processing	PEC	4	3	1	0	3	0
21.	DAL-586	Generative AI	PEC	4	3	1	0	3	0
22.	DAL-587	Internet of Things	PEC	4	3	1	0	3	0

M.Tech. (Artificial Intelligence)

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.	DAT-501	Applications of AI/ML	STAR	3	3	0	0	3	0