

JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY
DEPARTMENT OF COMPUTER APPLICATIONS
M.Sc. AI/ML

Course Curriculum

M.Sc. AI &ML							
First Semester							
S. No.	Course Code	Course Title	Credit Structure				Contact Hours
			L	T	P	Credits	
1	25M21CA111	Artificial Intelligence	3	0	0	3	3
2	25M21CA112	Python Programming	2	1	0	3	3
3	25M21CA113	Data Structure and Algorithms	3	1	0	4	4
4	25M11MA112	Mathematics for AI & ML -I	3	0	0	3	3
5	25M22CA111	PEC-I	3	0	0	3	3
6	25M25CA111	Artificial intelligence Lab	0	0	1	1	2
7	25M25CA112	Python Programming Lab	0	0	2	2	4
8	25M25CA113	Data Structure and Algorithms lab	0	0	1	1	2
Total credits						20	24

M.Sc. AI &ML							
Second Semester							
S. No.	Course Code	Course Title	Credit Structure				Contact Hours
			L	T	P	Credits	
1	25XXXXXXX	Machine Learning	3	0	0	3	3
2	25XXXXXXX	Natural Language Processing (NLP)	3	0	0	3	3
3	25XXXXXXX	Ethical Implications of AI (SEC-I)	2	0	0	2	2
4	25XXXXXXX	Mathematics for AI & ML- II	3	0	0	3	3
5	25XXXXXXX	Personality Development & Decision-making skills (HSC)	2	0	0	2	2
6	25XXXXXXX	PEC-II	3	0	0	3	3
7	25XXXXXXX	PEC-III	3	0	0	3	3
8	25XXXXXXX	Machine Learning lab	0	0	1	1	2
9	25XXXXXXX	Natural Language Processing (NLP) Lab	0	0	1	1	2
Total credits						21	23

M.Sc. AI & ML							
Third Semester							
			Credit Structure				
S. No.	Course Code	Course Title	L	T	P	Credits	Contact Hours
1	25XXXXXX	Neural Network & Deep learning	3	0	0	3	3
2	25XXXXXX	Generative AI	2	0	0	2	2
3	25XXXXXX	Information Rertrieval & Semantic Web	3	0	0	3	3
4	25XXXXXX	PEC-IV	3	0	0	3	3
5	25XXXXXX	PEC-V	3	0	0	3	3
6	25XXXXXX	Entrepreneurship and Start-up ecosystem(SEC-II)	2	0	0	2	2
7	25XXXXXX	Neural Network & Deep learning lab	0	0	1	1	1
8	25XXXXXX	Generative AI Lab	0	0	1	1	2
9	25XXXXXX	Information Rertrieval & Semantic Web Lab	0	0	1	1	2
Total credits						19	21

Fourth Semester							
			Credit Structure				
S. No.	Course Code	Course Title	L	T	P	Credits	Contact Hours
1	25XXXXXX	Capstone Project/ Master Thesis	0	0	15	15	30
2	25XXXXXX	Term Paper	0	0	0	5	0
Total credits						20	30
Overall Total Credits in Programme			80				

List of Subjects

Sr. No.	PCC: Professional Core Courses	Category
1	Artificial Intelligence	PCC-I
2	Python Programming	PCC-II
3	Data structures & Algorithm	PCC-III
4	Machine Learning	PCC-V
5	Natural Language Processing (NLP)	PCC-VI
6	Neural Network & Deep learning	PCC-VI
7	Natural Language Processing (NLP)	PCC-VIII
8	Generative AI	PCC-IX
9	Information Retrieval & Semantic web	PCC-X
10	Artificial intelligence Lab	PCC-XI (Lab -I)
11	Python Programming Lab	PCC-XII (Lab -II)
12	Data structures & Algorithm lab	PCC-XIII (Lab-III)
13	Machine Learning lab	PCC-XIV(Lab-IV)
14	Natural Language Processing (NLP) Lab	PCC-XV (Lab-V)
15	Neural Networks and Deep Learning lab	PCC-XVI (Lab-VI)
16	Generative AI Lab	PCC-XVII (Lab-VII)
17	Information Retrieval & Semantic web Lab	PCC-XVIII (Lab-VIII)
	PEC: Professional Elective Course	Category
1	Data Mining & Warehousing	PEC
2	Data Reduction & Visualization	PEC
3	Reinforcement Learning	PEC
4	Principles of Explainable AI	PEC
5	FATE in AI models	PEC
6	Quantum Machine Learning	PEC
7	Responsible AI	PEC
8	Deep Learning for Language And Speech Technologies	PEC
9	Deep Learning for Computer Vision	PEC
10	Robotics Process Automation	PEC
11	3D Graphics and Animation	PEC
12	Soft Computing	PEC
13	Data Engineering and Management	PEC
14	Big Data Frameworks	PEC
15	Cloud Computing Ecosystem	PEC
16	Image Processing and Video analytics	PEC
17	Computer vision	PEC
18	Social Network Analysis	PEC
19	Internet of Things(IOT)	PEC
20	Cyber Security	PEC

21	Ethical Hacking and Prevention	PEC
	Multidisciplinary Core(MDC)	Category
1	Mathematics for AI & ML -I	PCC-IV
2	Mathematics for AI & ML -II	PCC-VII
	Skill Enhancement Core (SEC)	Category
1	Ethical Implications of AI	SEC-I
2	Entrepreneurship and Start-up ecosystem	SEC-II
3	Design Thinking and Innovation	SEC
4	Professional ethics	SEC
5	Technical Communication	SEC
	Humanities & Social Science Course (HSC)	Category
1	Personality Development & Decision-making Skills	HSC