Scheme For B.Sc. (AI) Honours

Semester – I

S. No.	Code	Title	Pre-requisite	L	T	P	S	H	C	Category
1		Computational Thinking with Python		2	0	1	0	4	3	SEC
2		Mathematics for Intelligent System		3	0	0	0	3	3	IDC
3		Database Management System		3	0	1	0	5	4	DSM
4		Foundation of Artificial Intelligence		3	0	1	0	5	4	DSC
5		Data Preprocessing and Exploratory Data Analysis		1	0	1	0	3	2	VAC
6		Communication Skills		2	0	0	0	2	2	AEC
7		Innovation Lab		0	0	2	0	4	2	VAC
	Credits in Semester-I			14	0	6	0	26	20	

Semester – II

S. No.	Code	Title	Pre-requisite	L	T	P	S	H	C	
1		Problem Solving using C programming		3	0	1	0	5	4	DSM
2		Machine Learning		3	0	1	0	5	4	DSC
3		Fundamentals of Operating Systems		2	0	1	0	4	3	IDC
4		Next Generation application Lab		0	0	2	0	4	2	AEC
5		Environment and Sustainability		2	0	0	0	2	2	VAC
6		Data Visualization and Dashboards		2	0	1	0	4	3	SEC
7		Indian Knowledge system		2	0	0	0	2	2	VAC
	Credits in Semester-II			14	0	6	0	26	20	

Note: Students who choose to exit after the second semester and have earned 40 credits will be eligible for the award of a "Certificate in Artificial Intelligence", subject to successful completion of an additional 4-credit vocational course offered during the summer term.

Semester – III

S. No.	Code	Title	Pre-requisite	L	T	P	S	H	C	
1		Problem Solving using Data Structures		3	0	1	0	5	4	DSC
2		Deep Learning		3	0	1	0	5	4	DSC
3		Natural Language Processing		2	0	1	0	4	3	DSC
4		General Elective 1		2	0	1	0	4	3	SEC
5		Specialization Core 1		3	0	1	0	5	4	DSC
6		Ethics, Patents, Copyrights and IPR		2	0	0	0	2	2	AEC
	Credits in Semester-III			15	0	5	0	25	20	

Semester – IV

S. No.	Code	Title	Pre-requisite	L	T	P	S	H	C	
1		Generative AI		3	0	1	0	5	4	DSC
2		Cloud Computing fundamentals for AI		3	0	1	0	5	4	DSC
3		Design and Analysis of Algorithms		3	0	1	0	5	4	DSC
4		General Elective 2		2	0	1	0	4	3	DSM
5		Specialization Core 2		3	0	1	0	5	4	DSC
6		Industry Certification		0	0	0	1	2	1	AEC
	Credits in Semester-IV			14	0	5	2	26	20	

Students exiting at the end of the fourth semester and earning 80 credits will be awarded a "Diploma in Artificial Intelligence," provided they successfully complete the additional 4 credits of vocational courses offered during the summer term.										
Semester – V										
S. No.	Code	Title	Pre-requisite	L	T	P	S	H	Cr	
1		MLOPs		3	0	1	0	5	4	DSC
2		Computer Network		2	0	1	0	4	3	DSC
3		Comptitive Programming		2	0	1	0	4	3	DSM
4		Specialization Elective 1		3	0	1	0	5	4	DSC
5		Specialization Elective 2		3	0	1	0	5	4	DSC
6		Summer Internship		0	0	0	2	4	2	SI
	Credits in Semester-V			13	0	5	2	27	20	
Semester – VI										
S. No.	Code	Title	Pre-requisite	L	T	P	S	H	Cr	
1		Industrial Project/R&D Project/Start-up Project		0	0	5	5	10	10	Project
2		Specialization Elective 3		3	0	1	0	5	4	DSC
3		Open Elective 1		2	0	1	0	4	3	IDC
4		Open Elective 2		2	0	1	0	4	3	IDC
	Credits in Semester-VI			7	0	8	0	23	20	
Students exiting at the end of the sixth semester and earning 120 credits will be awarded a "Bachelor of Science (Artificial Intelligence)" degree.										
Semester – VII (Honours)										
S. No.	Code	Title	Pre-requisite	L	T	P	S	H	Cr	
1		Reinforcement Learning Concepts and Applications		3	0	1	0	5	4	DSC
2		AI for Computer Vision		3	0	1	0	5	4	DSC
3		Intelligent Model Design using AI		3	0	1	0	5	4	DSC
4		Emerging Topics in Artificial Intelligence		4	0	0	0	4	4	DSC
5		Seminar on Emerging AI Technology for Society		2	0	0	2	6	4	DSM
	Credits in Semester-VII			15	0	3	2	25	20	
Semester – VIII										
S. No.	Code	Title	Pre-requisite	L	T	P	S	H	Cr	
1		Capstone Project / Professional Internship		0	0	0	12	24	12	Project/ Internship
2		AI for Agriculture		4	0	0	0	4	4	DSC
3		AI for Healthcare		4	0	0	0	4	4	DSC
	Credits in Semester-VIII			8	0	0	20	40	20	
Total credits from semester I to VIII									160	
Semester – VII (Honours with Research)										

S.	Cod	Title	Pre-	L	T	P	S	H	Cr	
1		Undergraduate Research in Artificial		0	0	0	6	12	6	DSC
2		Research Methodology		4	0	0	0	4	4	DSC
3		AI in Healthcare		3	0	0	0	3	3	DSC
4		AI for Society		3	0	0	0	3	3	DSC
5		Seminar on Emerging AI Technology for		4	0	0	0	4	4	DSM
	Credits in Semester-VII			14	0	0	6	26	20	
Semester – VIII										
S.	Cod	Title	Pre-	L	T	P	S	H	Cr	
1		Research Project		0	0	0	12	24	12	Research
2		AI for Agriculture		4	0	0	0	4	4	DSC
3		AI for Robotics		4	0	0	0	4	4	DSC
	Credits in Semester-VIII			8	0	40	12	32	20	
Total Credits at the end of Fourth year for Bachelor of Science (Artificial Intelligence)-Honours – 160										
1	**Specilization- Digital Twin and XR (Extended**									
	Course			**L**	**T**	**P**	**S**	**H**	C	
	1	Foundations of Digital Twin Systems		3	0	1	0	5	4	CORE1
	2	Extended Reality (XR) Technologies and Applications		3	0	1	0	5	4	CORE2
	3	IoT and Edge Computing for Digital Twins		3	0	1	0	5	4	Elective 1
	4	3D Modelling and Simulation for XR		3	0	1	0	5	4	Elective 1
	5	Unity/Unreal Engine for XR Development		3	0	1	0	5	4	Elective 2
	6	AI and Machine Learning for Predictive Digital Twins		3	0	1	0	5	4	Elective 2
	7	Human-Computer Interaction in Immersive Environments		3	0	1	0	5	4	Elective 3
	8	Ethics, Privacy, and Security in XR and Digital Twin Systems		3	0	1	0	5	4	Elective 3
2	**Specilization- Agentic AI**									
	1	Foundations of Agentic AI Systems		3	0	1	0	5	4	CORE1
	2	Design and Development of Autonomous Agents		3	0	1	0	5	4	CORE2
	3	Multi-Agent Systems and Collaboration		3	0	1	0	5	4	Elective 1
	4	Cognitive Architectures for Intelligent Agents		3	0	1	0	5	4	Elective 1
	5	Reinforcement Learning for Agentic Behavior		3	0	1	0	5	4	Elective 2
	6	Human-Agent Interaction and Trustworthy AI Agents		3	0	1	0	5	4	Elective 2
	7	Agentic AI in Digital Twins and Simulated Environments		3	0	1	0	5	4	Elective 3
	8	Ethics, Governance, and Regulation of Autonomous Agents		3	0	1	0	5	4	Elective 3
3	**Specialization: Robotics and Intelligent Systems**									

	1	Microcontroller & Robot Operation System		3	0	1	0	5	4	CORE1
	2	Artificial Intelligence for Robotics		3	0	1	0	5	4	CORE2
	3	Mobile Robots		3	0	1	0	5	4	Elective 1
	4	Humanoid Robots		3	0	1	0	5	4	Elective 1
	5	Cognitive Robotics		3	0	1	0	5	4	Elective 2
	6	Bio-Inspired Robotics		3	0	1	0	5	4	Elective 2
	7	Robot Vision and Perception		3	0	1	0	5	4	Elective 3
	8	Assistive Robotics		3	0	1	0	5	4	Elective 3
4	**Specialization : Data Science and Advanced Analytics**									
	1	Data Visualization and Dashboards		3	0	1	0	5	4	CORE1
	2	Time Series Analysis		3	0	1	0	5	4	CORE2
	3	Big Data Analytics and Business Intelligence		3	0	1	0	5	4	Elective 1
	4	Optimization Theory		3	0	1	0	5	4	Elective 1
	5	Data Analytics using R		3	0	1	0	5	4	Elective 2
	6	Geo-Spatial Data Analysis		3	0	1	0	5	4	Elective 2
	7	Social Network Analysis		3	0	1	0	5	4	Elective 3
	8	Cloud Platforms for Data Science		3	0	1	0	5	4	Elective 3
5	**Specialization : Agritech and Smart Farming**									
	1	AI for Precision Agriculture		3	0	1	0	5	4	CORE1
	2	IoT and Remote Sensing in Agriculture		3	0	1	0	5	4	CORE2
	3	Climate-Smart Agriculture		3	0	1	0	5	4	Elective 1
	4	Data Analytics for Crop Yield Prediction		3	0	1	0	5	4	Elective 1
	5	Blockchain and Supply Chain Management in Agritech		3	0	1	0	5	4	Elective 2
	6	Agri-Biotech and AI Applications		3	0	1	0	5	4	Elective 2
	7	Financial Technologies (Fintech) in Agriculture		3	0	1	0	5	4	Elective 3
	8	Agricultural Robotics and Automation		3	0	1	0	5	4	Elective 3
6	**Specialization : Healthcare AI and Bioinformatics**									
	1	AI for Medical Diagnosis and Decision Support		3	0	1	0	5	4	CORE1
	2	Healthcare Data Analytics and Informatics		3	0	1	0	5	4	CORE2
	3	Medical Imaging and Computer Vision		3	0	1	0	5	4	Elective 1
	4	Wearable Devices and Remote Patient Monitoring		3	0	1	0	5	4	Elective 1
	5	Natural Language Processing in Healthcare		3	0	1	0	5	4	Elective 2
	6	AI in Drug Discovery and Personalized Medicine		3	0	1	0	5	4	Elective 2
	7	Robotics in Surgery and Rehabilitation		3	0	1	0	5	4	Elective 3
	8	Ethical, Legal, and Regulatory Aspects in Healthcare AI		3	0	1	0	5	4	Elective 3
General Electives:										
		Soft Computing		2	0	1	0	4	3	Elective 1
		Prompt Engineering		2	0	1	0	4	3	Elective 1

		Advances in AI		2	0	1	0	4	3	Elective 2
		Image and Video Processing		2	0	1	0	4	3	Elective 2
		Big Data Analytics and Business Intelligence		2	0	1	0	4	3	Elective 3
		AI and Society		2	0	1	0	4	3	Elective 3
School's Open Elective : (Other schools' students can opt)										
		Applications of AI		3	0	0	0	3	3	Open Elective
		AI Tools for society		3	0	0	0	3	3	Open Elective

Course Summery

Course Category	**Credits**
DSC (Disipiline Specific Core)	82
DSM (Disipiline Specific Minor)	18
AEC (Ability Enhancement Course)	7
SEC (Skill Enhancement Course)	9
IDC (Multidiciplinary)	12
VAC (Value Added Course)	8
SI(Summer Internship)	2
Project	10
Professional Internship/ Research	12
Total	160