School of Artificial Intelligence

Scheme For Bachelor of Science (B.Sc) Artificial Intelligence In Agritech and Smart Farming									
Semester – I									
S.No.	Code	Title	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	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		Statistics for Data Science	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	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	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	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	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 (Hounors)									
S.No.	Code	Title	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	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 (Hounors with Reseach)									
S.No.	Code	Title	L	T	P	S	H	Cr	
1		Undergraduate Research in Artificial Intelligence	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 Society	4	0	0	0	4	4	DSM
	Credits in Semester-VII		14	0	0	6	26	20	
Semester – VIII									
S.No.	Code	Title	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 Reality)**								
	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:									
S.No.	Code	Title	L	T	P	S	H	Cr	
		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