

Data Science & Artificial Intelligence Engineering

General Structure (2022-26)

Year	Course Code	Semester-I	L	P	U	Course Code	Semester-II	L	P	U
I		Mathematics-I	3	0	3		Mathematics-II	3	0	3
		English Language Skills	2	2	3		Physics	3	2	4
		Introduction to Electrical and Electronics Sciences	3	2	4		Environment Sciences & SDGs	2	0	2
		Chemistry	3	2	4		Digital Signal Processing	3	0	3
		Introduction to DS and AI	3	0	3		Professional Communication	3	0	3
		Computer Programming	3	2	4		Digital Fabrication	0	6	3
		Essence of Indian Traditional Knowledge (Audit)	0	0	0		Data Structures	2	4	4
		Total No of Credits	21			Total No of Credits			22	
II	Semester-III					Semester-IV				
		Introduction to IOT	3	0	3		Computer Organization and Architecture	3	0	3
		Object Oriented Programming Concepts	3	2	4		Artificial Intelligence	3	0	3
		Mathematics-III	3	0	3		Operating System	3	0	3
		Design and Analysis of Algorithms	3	0	3		Data Science	3	0	3
		Database Management Systems	3	2	4		Web enabled Technologies	3	0	3
		Principles of Managerial Economics	3	0	3		Industry coding practice (Python and R)	2	2	3
		Discrete Mathematics	3	0	3		Digital Humanities Eective1	3	0	3
		CRT	0	2	1		CRT	0	2	1
		MOOC (Python Programming / Julia Programming)	0	0						
	Total No of Credits	24			Total No of Credits			22		
SUMMER INTERNSHIP PROGRAM I (for Internship option only)								5		
III	Semester-V					Semester-VI				
		Soft computing	3	0	3		Speech Processing	3	0	3
		Machine Learning	3	2	4		Deep Learning	3	0	3
		Blockchain Technology	3	0	3		Big Data systems	3	2	4
		Computer Networks	3	2	4		Autonomous Vehicles	3	0	3
		Data Wrangling and Visualization	2	2	3		Elective-II (Core)	3	0	3

	Elective-I (Core)	3	0	3		Special Project / TIP/Capstone Project	0	6	3
	Audit Course	0	0	0		CRT	0	2	1
	CRT	0	2	1					
Total No of Credits		21			Total No of Credits		24		
IV	Semester-VII				Semester-VIII				
		Internship Program II /				Internship Program II /			
		Thesis & Seminar /				Thesis & Seminar /			
		Electives (4)				Electives (4)			
		Humanities Elective (1)				Humanities Elective (1)			
Total No of Credits		20/18			Total No of Credits		20/18		
Total No of Credits							177		

The Program structure is tentative, subject to change (if required).

Discipline Elective I (V Semester)				
Course Code	Course Title	L	P	U
	Cyber Security	3	0	3
	Database Security and Privacy	3	0	3
	Ethical Hacking	3	0	3
Discipline Elective I (VI Semester)				
	Recommendation Systems	3	0	3
	Predictive Analytics	3	0	3
	Natural Language processing	3	0	3

Digital Humanities Electives I (VII/VIII Semester)				
Course Code	Course Title	L	P	U
	Social Innovation	3	0	3

Specialization Electives (VII/VIII Semester)

Data Science				
Course Code	Course Title	L	P	U
CS404	Deep Learning	3	0	3
CS405	Natural Language Processing	3	0	3
CS406	Information retrieval	3	0	3
CS407	Applied Time Series Analysis	3	0	3

Artificial Intelligence				
Course Code	Course Title	L	P	U
CS404	Human Computer Interaction	3	0	3
CS405	Intelligent Control and Cognitive Systems	3	0	3
CS406	Pattern Recognition	3	0	3
CS407	Robotics	3	0	3

Cloud Computing				
Course Code	Course Title	L	P	U
CS404	Distributed Cloud Computing	3	0	3
CS405	Security & Privacy in Cloud Computing	3	0	3
CS406	Cloud Administration	3	0	3
CS407	Real Time Data Analytics	3	0	3

Blockchain				
Course Code	Course Title	L	P	U
CS404	Blockchain with IoT	3	0	3
CS405	Information Extraction and Retrieval	3	0	3
CS406	Image and Video Processing	3	0	3
CS407	Supply Chain Analytics	3	0	3

Internet of Things				
Course Code	Course Title	L	P	U
CS401	Blockchain with IoT	3	0	3
CS402	Embedded Systems	3	0	3
CS403	AI & Humanities	3	0	3
CS404	Innovation & Entrepreneurship	3	0	3