R 25 Regulations
Course Structures
Computer Science and Engineering
Academic Year: 2025-26

I-Year, Semester-I

S.No	Course Code	Course Title	L	T	P	Credits
1		Matrices and Calculus	3	1	0	4
2		Engineering Chemistry	3	0	0	3
3		English for Skill Enhancement	3	0	0	3
4		Electronic Devices and Circuits	3	0	0	3
5		Programming for Problem Solving	3	0	0	3
6		Engineering Chemistry Lab	0	0	2	1
7		Programming for Problem Solving Lab	0	0	2	1
8		Engineering Workshop	0	0	2	1
9		English Language and Communication Skills Lab	0	0	2	1
10		Induction Program				
		Total Credits	**15**	**1**	**8**	**20**

I-Year, Semester-II

S.No	Course Code	Course Title	L	T	P	Credits
1		Ordinary Differential Equations and Vector Calculus	3	1	0	4
2		Advanced Engineering Physics	3	0	0	3
3		Engineering Drawing and Computer Aided Drafting	2	0	2	3
4		Basic Electrical Engineering	3	0	0	3
5		Data Structures	3	0	0	3
6		Advanced Engineering Physics Lab	0	0	2	1
7		Data Structures Lab	0	0	2	1
8		Basic Electrical Engineering Lab	0	0	2	1
9		IT Workshop	0	0	2	1
		Total Credits	**14**	**1**	**10**	**20**

II-Year, Semester-I

S.No	Course Code	Course Title	L	T	P	Credits
1		Discrete Mathematics	3	0	0	3
2		Computer Organization and Architecture	3	0	0	3
3		Object Oriented Programming through Java	3	0	0	3
4		Software Engineering	3	0	0	3
5		Database Management System	3	0	0	3
6		Computational Mathematics Lab	0	0	2	1
7		Object Oriented Programming through Java Lab	0	0	2	1
8		Database Management Systems Lab	0	0	2	1
9		Data Visualization- Tableau	0	0	2	1
10		Environmental Science	1	0	0	1
		Total Credits	**16**	**0**	**8**	**20**

II-Year, Semester-II

S.No	Course Code	Course Title	L	T	P	Credits
1		Computer Oriented Statistical Methods	3	0	0	3
2		Operating Systems	3	0	0	3
3		Python Programming	3	0	0	3
4		Computer Networks	3	0	0	3
5		Web Technologies	3	0	0	3
6		Innovation and Entrepreneurship	2	0	0	2
7		Operating Systems Lab	0	0	2	1
8		Computer Networks Lab	0	0	2	1
9		Python Programming Lab	0	0	2	1
10		Web Technologies Lab	0	0	2	1
11		UI Design – Flutter	0	0	2	1
		Total Credits	**17**	**0**	**10**	**22**

Note: Students who wish to exit after **II Year II Semester** has to register for this optional course and acquire the credits allotted by doing 6 weeks Work-based Vocational Course/ Internship or Apprenticeship. Please refer **R 25 Academic Regulations** for more information.

III-Year, Semester-I

S.No	Course Code	Course Title	L	T	P	Credits
1		Automata Theory and Compiler Design	3	0	0	3
2		Machine Learning	3	0	0	3
3		Algorithm Design and Analysis	3	0	0	3
4		Professional Elective-I	3	0	0	3
5		Open Elective-I	2	0	0	2
6		Machine Learning Lab	0	0	2	1
7		Professional Elective-I Lab	0	0	2	1
8		Algorithm Design and Analysis Lab	0	0	2	1
9		Field-Based Research Project	0	0	4	2
10		Node JS/React JS/Django	0	0	2	1
11		Indian Knowledge System	1	0	0	1
		Total Credits	**15**	**0**	**12**	**21**

III-Year, Semester-II

S.No	Course Code	Course Title	L	T	P	Credits
1		Cryptography and Networks Security	3	0	0	3
2		Deep Learning	3	0	0	3
3		Business Economics and Financial Analysis	3	0	0	3
4		Professional Elective-II	3	0	0	3
5		Open Elective–II	2	0	0	2
6		Cryptography and Networks Security Lab	0	0	2	1
7		Deep Learning Lab	0	0	2	1
8		Advanced Data Structures using Python Lab	0	0	2	1
9		Advanced English Communication Skills Laboratory	0	0	2	1
10		Prompt Engineering	0	0	2	1
11		Gender Sensitization Lab*/Human Values and Professional Ethics*	1	0	0	1
		Total Credits	**15**	**0**	**10**	**20**

Note: For the courses Gender Sensitization Lab and Human Values and Professional Ethics – one hour of instruction will be conducted on alternate weeks. For example, if a one-hour class for Gender Sensitization Lab is conducted this week, then a one-hour class for Human Values and Professional Ethics will be conducted in the following week.

IV-Year, Semester-I

S.No	Course Code	Course Title	L	T	P	Credits
1		Natural Language Processing	3	0	0	3
2		Cyber Security	3	0	0	3
3		Fundamentals of Management	3	0	0	3
4		Professional Elective-III	3	0	0	3
5		Professional Elective–IV	3	0	0	3
6		Open Elective–III	2	0	0	2
7		Natural Language Processing Lab	0	0	2	1
8		Cyber Security Lab	0	0	2	1
9		Industry Oriented Mini Project/Internship	0	0	4	2
		Total Credits	**17**	**0**	**8**	**21**

IV-Year, Semester-II

S.No	Course Code	Course Title	L	T	P	Credits
1		Professional Elective–V	3	0	0	3
2		Professional Elective–VI	3	0	0	3
3		Project Work	0	0	28	14
		Total Credits	**6**	**0**	**28**	**20**

Professional Electives

Professional Elective-I

Course Code	Course Title
	Artificial Intelligence
	Introduction to Data Science
	Software Testing Methodologies
	Data Mining
	Devops
	Full Stack Development

Professional Elective Lab-I

Course Code	Course Title
	Artificial Intelligence using Python Lab
	Introduction to Data Science Lab
	Software Testing Methodologies Lab
	Data Mining Lab
	Devops Lab
	Full Stack Development Lab

Professional Elective-II

Course Code	Course Title
	Image Processing
	Mining Massive Datasets
	Software Project Management
	Block chain Technology
	Distributed Systems
	Generative AI

Professional Elective-III

Course Code	Course Title
	Computer Vision
	Data Stream Mining
	Information Retrieval Systems
	Scripting Languages
	Cloud Computing
	Vulnerability and Penetration Testing

Professional Elective-IV

Course Code	Course Title
	Augmented Reality & Virtual Reality
	Big Data Analytics
	Agile Methodology
	Quantum Computing
	Robotic Process Automation
	Cyber Forensics

Professional Elective-V

Course Code	Course Title
	Game Theory
	Social Media Mining
	Internet of Things
	Nature Inspired Computing
	Mobile Application Development
	Human Computer Interaction

Professional Elective-VI

Course Code	Course Title
	High Performance Computing
	Distributed Databases
	Graph Theory
	Adhoc and Sensor Networks
	Sustainable Engineering
	Edge Computing

Open Electives

Open Elective-I

Course Code	Course Title
	Operating Systems
	Database Management Systems

Open Elective-II

Course Code	Course Title
	Introduction to Computer Networks
	Software Engineering

Open Elective-III

Course Code	Course Title
	Algorithms Design and Analysis
	Fundamentals of Cyber Security