

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
University Constituent Engineering Colleges
B.Tech. in COMPUTER SCIENCE AND ENGINEERING (AI & ML)
Applicable From AY 2025-26 Batch

I Year I Semester

S. No.	Course Code	Course Title	L	T	P	Credits
1	BSC	Matrices and Calculus	3	1	0	4
2	BSC	Engineering Chemistry	3	0	0	3
3	ESC	Basic Electrical Engineering	3	0	0	3
4	CSC	Programming for Problem Solving	3	0	0	3
5	ESC	Electronic Devices and Circuits	3	0	0	3
6	BSC	Engineering Chemistry Lab	0	0	2	1
7	ESC	Basic Electrical Engineering Lab	0	0	2	1
8	CSC	Programming for Problem Solving Lab	0	0	2	1
9	HSC	IT Workshop	0	0	2	1
10		Induction Program				
		Total Credits	15	1	8	20

I Year II Semester

S. No.	Course Code	Course Title	L	T	P	Credits
1	BSC	Ordinary Differential Equations and Vector Calculus	3	0	0	3
2	BSC	Applied Physics	3	0	0	3
3	MEC	Computer Aided Engineering Graphics	2	0	2	3
4	ESC	Data Structures	3	0	0	3
5	HSC	English for Skill Enhancement	3	0	0	3
6	BSC	Applied Physics Lab	0	0	2	1
7	ESC	Data Structures Lab	0	0	2	1
8	HSC	English Language and Communication Skills Lab	0	0	2	1
9	MEC	Engineering Workshop	0	0	2	1
10	CSC	Python Programming Lab	0	1	2	2
		Total Credits	14	1	12	21

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	BSC	Mathematical and Statistical Foundations	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		Data Base Management System	3	0	0	3
6	BSC	Computational Mathematics Lab	0	0	2	1
7		Object Oriented Programming through Java Lab	0	0	2	1
8		Software Engineering Lab	0	0	2	1
9		Data Base Management Systems Lab	0	0	2	1
10	SDC	Skill Development Course – 1 (Node Js/React JS/Django)	0	0	2	1
		Total Credits	15	0	10	20

II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Discrete Mathematics	3	0	0	3
2		Operating Systems	3	0	0	3
3		Computer Networks	3	0	0	3
4		Algorithm Design and Analysis	3	0	0	3
5		Machine Learning	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		Machine Learning Lab	0	0	2	1
10	SDC	Skill Development Course – 2(Data Visualization- R/ Python/ Power BI)	0	0	2	1
11	*MC	Indian Knowledge System	1	0	0	0
		Total Credits	18	0	08	21

***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 R25 Academic Regulations for more information.

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	F	Credits
1		Artificial Intelligence	3	1	0		4
2		Data Warehousing and Data Mining	3	0	0		3
3		Computer Vision	3	0	0		3
4		Professional Elective-I	3	0	0		3
5		Open Elective-I	2	0	0		2
6		Artificial Intelligence Lab	0	0	2		1
7		Data Warehousing and Data Mining Lab	0	0	2		1
8		Computer Vision Lab	0	0	2		1
		Field Based Project/ Internship	0	0	0	4	2
9	SDC	Skill Development Course – 3 (UI Design – Flutter/ Android Studio)	0	0	2		1
10	MC*	Gender Sensitization Laboratory*/ Human Values and Professional Ethics*	1	0	0		0
		Total Credits	15	1	8	4	21

III YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1		Natural Language Processing	3	0	0	3
2		Deep Learning	3	1	0	4
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		Natural Language Processing Lab	0	0	2	1
7		Deep Learning Lab	0	0	2	1
8		Prompt Engineering Lab	0	0	2	1
9	HSC	English for Employability Skills Laboratory	0	0	2	1
10	SDC	Skill Development Course – 4 (DevOps)	0	0	2	1
11	MC*	Environmental Science	1	0	0	0
		Total Credits	15	1	10	20

***Note:** Students who wish to exit after III 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 R25 Academic Regulations for more information.

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	F	Credits
1		Reinforcement Learning	3	0	0		3
2		Generative AI	3	0	0		3
3		Fundamentals of Management for Engineers	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		Reinforcement Learning Lab	0	0	2		1
8		Generative AI Lab	0	0	2		1
9		Industry Oriented Mini Project/ Summer Internship	0	0	0	4	2
		Total Credits	17	0	04	4	21

IV YEAR II SEMESTER

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

PROFESSIONAL ELECTIVES

Professional Elective - I

1	Computer Graphics
2	Introduction to Data Science
3	Web Programming

Professional Elective - II

1	Cryptography and Network Security
2	Knowledge Representation and Reasoning
3	Information Retrieval Systems

Professional Elective-III

1	Blockchain Technology
2	Agentic AI
3	Large Language Models

Professional Elective-IV

1	Robotics
2	Big Data Technologies
3	Quantum Computing

Professional Elective-V

1	Nature Inspired Computing
2	Robotic Process Automation
3	Game Theory

Professional Elective-VI

1	High Performance Computing
2	Data Stream Mining
3	Sustainable Engineering

OPEN ELECTIVES

Open Elective I:

1. Fundamentals of AI
2. Machine Learning Basics

Open Elective II:

1. Introduction to Natural Language Processing
2. AI applications

Open Elective III:

1. Chatbots
2. Computer Vision with Open CV