

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in ARTIFICIAL INTELLIGENCE & MACHINE LEARNING
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	Advanced Engineering Physics	3	0	0	3
	MEC	Computer Aided Engineering Graphics	2	0	2	3
		Basic Electrical Engineering	3	0	0	3
3	CSC	Programming for Problem Solving	3	0	0	3
6	BSC	Advanced Engineering Physics Lab	0	0	2	1
7	CSC	Programming for Problem Solving Lab	0	0	2	1
		IT Workshop	0	0	2	1
8	HSC	Basic Electrical Engineering Lab	0	0	2	1
9		Induction Program				
		Total Credits	14	1	10	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	Engineering Chemistry	3	0	0	3
3	HSC	English for Skill Enhancement	3	0	0	3
4		Electronic Devices and Circuits	3	0	0	3
5		Data Structures	3	0	0	3
6	BSC	Chemistry Lab	0	0	2	1
7		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
		Python Programming Lab	0	0	2	1
		Total Credits	15	0	10	20

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
	BSC	Computational Mathematics Lab	0	0	2	1
6		Object Oriented Programming through java Lab	0	0	2	1
7		Software Engineering Lab	0	0	2	1
8		Data Base Management Systems Lab	0	0	2	1
9	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		Design and Analysis of Algorithms	3	0	0	3
5		Machine Learning	3	0	0	3
		Innovation and Entrepreneurship	2	0	0	2
6		Operating Systems Lab	0	0	2	1
7		Computer networks lab	0	0	2	1
8		Machine Learning Lab	0	0	2	1
9	SDC	Skill Development Course – 2(Data Visualization- R/ Python/ Power BI)	0	0	2	1
10	*MC	Indian Knowledge System	1	0	0	1
		Total Credits	18	0	08	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 R25 Academic Regulations for more information.

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Artificial Intelligence	3	0	0	3
2		Automata theory and Compiler Design	3	0	0	3
3		Data Analytics and Visualization	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		Compiler Design Lab	0	0	2	1
8		Data Analytics and Visualization Lab	0	0	2	1
		Field Based Project/ Internship	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	1
		Total Credits	15	0	10	21

***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.

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	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		Natural Language Processing Lab	0	0	2	1
7		Deep Learning Lab	0	0	2	1
8		Chatbots Lab	0	0	2	1
9	HSC	Advanced English Communication Skills	0	0	2	1

		Laboratory				
10	SDC	Skill Development Course – 4 Prompt Engineering	0	0	2	1
11	MC*	Environmental Science	1	0	0	1
		Total Credits	15	0	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	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	4	2
		Total Credits	17	0	08	21

IV YEAR II SEMESTER

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

1	Computer Graphics
2	Introduction to Data Science
3	Software Testing Methodologies
4	Data Mining
5	Web Programming
6	Distributed Systems

Professional Elective - II

1	Image Processing
2	Blockchain Technology
3	Software Project Management
4	Mining Massive Datasets
5	Full Stack Development
6	Devops

Professional Elective-III

1	Computer Vision
2	Cryptography and Network Security

3	Penetration Testing and Incident Response
4	Data Stream Mining
5	Cloud Computing
6	Information Retrieval Systems

Professional Elective-IV

1	Augmented Reality & Virtual Reality
2	Agile Methodology
3	Big Data Technologies
4	Quantum Computing
5	Robotic Process Automation
6	Cyber Forensics

Professional Elective-V

1	Social Media Mining
2	Nature Inspired Computing
3	Internet of Things
4	Game Theory
5	Mobile Application Development
6	Human Computer Interaction

Professional Elective-VI

1	High Performance Computing
2	Edge Computing
3	Graph Theory
4	Adhoc & Sensor Networks
5	Sustainable Engineering
6	Distributed Databases

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