

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
University Constituent Engineering Colleges
B.Tech. (IDDMP) (AI & ML)
Course Structure & Syllabus (R25 Regulations)
Applicable from AY 2025-2026 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	Engineering Graphics and Computer Aided Drafting	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		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 Systems	3	0	0	3
6		Innovation and Entrepreneurship	2	0	0	2
7		Object Oriented Programming through Java Lab	0	0	2	1
8		Software Engineering Lab	0	0	2	1
9		Database Management Systems Lab	0	0	2	1
10	SDC	Skill Development Course – 1 (NodeJS/ReactJS/Django)	0	0	2	1
11	MC	Environmental Science	1	0	0	0
		Total Credits	18	0	08	21

II YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	BSC	Computer Oriented Statistical Methods	3	0	0	3
2		Operating Systems	3	0	0	3
3		Business Economics and Financial Analysis	3	0	0	3
4		Computer Networks	3	0	0	3
5		Machine Learning	3	0	0	3
6		Computational Mathematics Lab	0	0	2	1
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
		Total Credits	15	0	10	20

***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		Formal Languages and Automata Theory	3	0	0		3
2		Artificial Intelligence	3	0	0		3
3		Design and Analysis of Algorithms	3	1	0		4
4		Professional Elective-I	3	0	0		3
5		Open Elective-I	2	0	0		2
6		Artificial Intelligence with Python Lab	0	0	2		1
7		Advanced Data Structures Lab	0	0	2		1
8		Prompt Engineering	0	0	2		1
9		Field-Based Project/Internship	0	0	0	4	2
10	SDC	Skill Development Course – 3(UI Design –Flutter/Android Studio)	0	0	2		1
11	MC	Indian Knowledge System	1	0	0		0
12		Natural Language Processing	3	0	0		3
		Total Credits	15	1	8	4	24

III YEAR II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1		Cryptography and Networks Security	3	0	0	3
2		Deep Learning	3	1	0	4
3		Compiler Design	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		Compiler Design 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	Gender Sensitization Lab*/ Human Values and Professional Ethics*	1	0	0	0
12		Soft Computing	3	0	0	3
		Total Credits	15	1	10	23

***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.	UG/PG	CourseCode	CourseTitle	L	T	P	Credits
1.	UG	Project	UG Major Project	0	0	-	(9*+5)14
2.			Professional Elective III	3	0	0	3
3.	UG		Cyber Security	3	0	0	3
4.	UG	Lab	Cyber Security Lab	0	0	2	1
5.	PG	Professional Core I	Artificial Intelligence and Intelligent Systems	3	1	0	4
6.	PG	Professional Core II	Statistical Foundations for Artificial Intelligence	3	0	0	3
7.	PG	PG Professional Elective I	1. Advanced Data Structures 2. Database Programming with PL/SQL 3. Large Language Models	3	0	0	3
8.	PG	PG Professional Elective II	1. Cognitive Systems 2. Game Theory and Applications 3. Computer Vision and Robotics	3	0	0	3
9.	PG	Lab	Artificial Intelligence and Intelligent Systems Lab	0	0	4	2
Total Credits							36 21 UG+15 PG

PROFESSIONAL ELECTIVES**Professional Elective - I**

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

Professional Elective - II

1	Blockchain Technology
2	Software Project Management
3	Mining Massive Datasets
4	Scripting Languages
5	Generative AI

Professional Elective-III

1	Computer Vision
2	Full Stack Development
3	Data Stream Mining
4	Cloud Computing
5	Informational Retrieval Systems

Professional Elective-IV

1	Augmented Reality & Virtual Reality
2	Agile Methodology

3	Big Data Technologies
4	Quantum Computing
5	Robotic Process Automation

Professional Elective-V

1	Social Media Mining
2	Nature Inspired Computing
3	Internet of Things
4	Mobile Application Development
5	UI/UX Design

Professional Elective-VI

1	High Performance Computing
2	Edge Computing
3	Adhoc and Sensor Networks
4	Sustainable Engineering
5	Distributed Databases

OPEN ELECTIVES

Open Elective-I:

1	Operating Systems Principles
2	Structured Query Language - SQL

Open Elective-II:

1	Core Java Programming
2	Software Testing Techniques

Open Elective-III:

1	MERN Stack Development
2	Fundamentals of Cyber Security