JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in Internet of Things
Course Structure & Syllabus (R25 Regulations)
Applicable from AY 2025-26 Batch

I Year I Semester (26 Hours)

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 (27 Hours)

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	Engineering 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		Algorithm Design and Analysis	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**	**8**	**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		Automata theory and Compiler Design	3	0	0	3
2		Microprocessors & Microcontrollers	3	0	0	3
3		Sensors and Devices	3	0	0	3
4		Professional Elective-I	3	0	0	3
5		Open Elective-I	2	0	0	2
6		Compiler Design Lab	0	0	2	1
7		Microprocessors & Microcontrollers Lab	0	0	2	1
8		Sensors and Devices 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		Wireless Sensor Networks	3	0	0	3
2		Embedded Systems	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		Wireless Sensor Networks Lab	0	0	2	1
7		Embedded Systems Lab	0	0	2	1
8		Web Technologies Lab	0	0	2	1
9	HSC	Advanced English Communication Skills Laboratory	0	0	2	1
10	SDC	Skill Development Course – 4 (prompt Engineering with chatbots Lab)	0	0	2	1
11	MC*	Environmental Science	1	0	0	1
		Total Credits	**14**	**0**	**14**	**21**

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		IoT Security	3	0	0	3
2		IoT Automation	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		IoT Security Lab	0	0	2	1
8		IoT Automation with Raspberry Pi	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 Elective-I

1	Graph Theory
2	Advanced Computer Architecture
3	Web Programming
4	Image Processing
5	Full stack Development

Professional Elective - II

1	Artificial Intelligence and Ethics
2	Information Retrieval Systems
3	Pattern Recognition
4	Computer Vision and Robotics
5	Data Warehousing and Business Intelligence

Professional Elective - III

1	Internet of Things
2	Data Mining
3	Scripting Languages

4	Mobile Application Development
5	Cryptography and Network Security

 # Courses in PE - III and PE - III Lab must be in 1-1 correspondence.

Professional Elective -IV

1	Quantum Computing
2	Expert Systems
3	Cloud Computing
4	Game Theory
5	Knowledge Representation and Reasoning

Professional Elective - V

1	Social Network Analysis
2	Federated Machine Learning
3	Augmented Reality & Virtual Reality
4	Web Security
5	Prompt Engineering

Professional Elective – VI

1	Speech and Video Processing
2	Robotic Process Automation
3	Randomized Algorithms
4	Cognitive Computing
5	Semantic Web