JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech. in ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING COURSE
STRUCTURE & YEAR SYLLABUS (R22 Regulations)
Applicable from AY 2022-23 Batch

I YEAR I SEMESTER

S. No.	Course Code	Course	L	T	P	Credits
1.		Matrices and Calculus	3	1	0	4
2.		Applied Physics	3	1	0	4
3.		Programming for Problem Solving	3	0	0	3
4.		Engineering Workshop	0	1	3	2.5
5.		English for Skill Enhancement	2	0	0	2
6.		Elements of Computer Science & Engineering	0	0	2	1
7.		Applied Physics Laboratory	0	0	3	1.5
8.		Programming for Problem Solving Laboratory	0	0	2	1
9.		English Language and Communication Skills Laboratory	0	0	2	1
10.		Environmental Science	3	0	0	0
		Induction Program				
		Total	**14**	**3**	**12**	**20**

I YEAR II SEMESTER

S. No.	Course Code	Course	L	T	P	Credits
1.		Ordinary Differential Equations and Vector Calculus	3	1	0	4
2.		Engineering Chemistry	3	1	0	4
3.		Computer Aided Engineering Graphics	1	0	4	3
4.		Basic Electrical Engineering	2	0	0	2
5.		Electronic Devices and Circuits	2	0	0	2
6.		Python Programming Laboratory	0	1	2	2
7.		Data Analysis Using Excel Laboratory	0	0	2	1
8.		Basic Electrical Engineering Laboratory	0	0	2	1
9.		IT Workshop	0	0	2	1
		Total	**11**	**3**	**12**	**20**

II YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Mathematical and Statistical Foundations	3	1	0	4
2		Data Structures	3	0	0	3
3		Computer Organization and Architecture	3	0	0	3
4		Software Engineering	3	0	0	3
5		Operating Systems	3	0	0	3
6		Introduction to Data Structures Lab	0	0	2	1
7		Operating Systems Lab	0	0	2	1
8		Software Engineering Lab	0	0	2	1
9		Node JS/ React JS/ Django	0	0	2	1
		Constitution of India	3	0	0	0
		Total	**18**	**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		Automata Theory and Compiler Design	3	0	0	3
3		Database Management Systems	3	0	0	3
4		Introduction to Artificial Intelligence	3	0	0	3
5		Object Oriented Programming through Java	3	0	0	3
6		Database Management Systems Lab	0	0	2	1
7		Java Programming Lab	0	0	2	1
8		Real-time Research Project/Field-Based Research Project	0	0	4	2
9		Prolog/ Lisp/ Pyswip	0	0	2	1
10		Gender Sensitization Lab	0	0	2	0
		Total	**15**	**0**	**12**	**20**

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Design and Analysis of Algorithms	3	1	0	4
2		Machine Learning	3	0	0	3
3		Computer Networks	3	0	0	3
4		Business Economics & Financial Analysis	3	0	0	3
5		Professional Elective-I	3	0	0	3
6		Machine Learning Lab	0	0	2	1
7		Computer Networks Lab	0	0	2	1
8		Advanced English Communication Skills Lab	0	0	2	1
9		UI design- Flutter	0	0	2	1
10		Intellectual Property Rights	3	0	0	0
		Total	**18**	**01**	**08**	**20**

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Knowledge Representation and Reasoning	3	0	0	3
2		Data Analytics	3	0	0	3
3		Natural Language Processing	3	0	0	3
4		Professional Elective – II	3	0	0	3
5		Open Elective-I	3	0	0	3
6		Natural Language Processing Lab	0	0	3	1.5
7		Data Analytics Lab	0	0	3	1.5
8		Industrial Oriented Mini Project/ Internship/Skill Development Course (DevOps)	0	0	4	2
9		Environmental Science	3	0	0	0
		Total	**18**	**0**	**10**	**20**

Environmental Science in III Yr II Sem Should be Registered by Lateral Entry Students Only.

IV YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1		Deep Learning	3	0	0	3
2		Nature Inspired Computing	2	0	0	2
3		Professional Elective -III	3	0	0	3
4		Professional Elective -IV	3	0	0	3
5		Open Elective - II	3	0	0	3
6		Professional Practice, Law & Ethics	2	0	0	2
7		Professional Elective - III Lab	0	0	2	1
8		Project Stage - I	0	0	6	3
		Total Credits	**16**	**0**	**8**	**20**

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		Open Elective – III	3	0	0	3
4		Project Stage – II including Seminar	0	0	22	11
		Total Credits	**9**	**0**	**22**	**20**

*MC – Satisfactory/Unsatisfactory

Professional Elective-I

Professional Elective - II

	Software Testing Methodologies
	Information Retrieval Systems
	Pattern Recognition
	Computer Vision and Robotics
	Data Warehousing and Business Intelligence

Professional Elective - III

	Internet of Things
	Data Mining
	Scripting Languages
	Mobile Application Development
	Cloud Computing

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

Professional Elective -IV

	Quantum Computing
	Expert Systems
	Semantic Web
	Game Theory
	Mobile Computing

Professional Elective - V

	Social Network Analysis
	Federated Machine Learning
	Augmented Reality & Virtual Reality
	Web Security
	Ad-hoc & Sensor Networks

Professional Elective – VI

	Speech and Video Processing
	Robotic Process Automation
	Randomized Algorithms
	Cognitive Computing
	Conversational AI

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. Evolutionary Computing