

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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**PERIYAR
MANIAMMAI**
INSTITUTE OF SCIENCE & TECHNOLOGY
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FACULTY OF ENGINEERING AND TECHNOLOGY

B.TECH. ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

CURRICULUM (I – VIII SEMESTERS)

Regulation 2024

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SEMESTER I

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	U24EN101	Technical English	3	0	0	3
2	U24MA101	Matrices and Differential Calculus	3	1	0	4
3	U24PH101	Engineering Physics	3	0	0	3
4	U24GE101	Principles of Engineering	3	0	0	3
5	U24GE102	Biology for Engineers	3	0	0	3
6	U24EM101	Coding Techniques	3	0	0	3
Practical						
7	U24MA102	Mathematics Laboratory	0	0	2	1
8	U24PH102	Engineering Physics Laboratory	0	0	2	1
9	U24EM102	Coding Techniques Laboratory	0	0	2	1
Total			18	1	6	22

SEMESTER II

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	U24EN151	Technical Communication Skill Development	2	0	2	3
2	U24MA151	Vector Calculus and Laplace Transforms	3	1	0	4
3	U24CH151	Engineering Chemistry	3	0	0	3
4	U24GE151	Design Thinking	3	0	0	3
5	U24GE152	Engineering Graphics	2	1	0	3
6	U24EM151	Programming in Practice	3	0	0	3
Practical						
7	U24CH152	Engineering Chemistry Laboratory	0	0	2	1
8	U24GE153	Design Thinking Laboratory	0	0	4	2
9	U24GE154	Engineering Practices	0	0	2	1
10	U24EM152	Programming in Practice Laboratory	0	0	2	1
Total			16	2	12	24

SEMESTER III

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	U24MA201	Multivariate Calculus and Linear Algebra	3	1	0	4
2	U24SH201	Universal Human Values	2	1	0	3
3	U24AD201	Data Structures	3	0	0	3
4	U24AD202	Digital System Design	3	0	0	3
5	U24AD203	Sensors and Actuators	3	0	2	4
6	U24AD204	Database Management Systems	3	0	0	3
Practical						
7	U24AD205	Data Structures Laboratory	0	0	4	2
8	U24AD206	Database Management Systems Laboratory	0	0	4	2
Audit Course						
10	U24AUXXX	Audit Course - I	-	-	-	-
Total			17	2	10	24

SEMESTER IV

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	U24MA251	Discrete Mathematics	3	1	0	4
2	U24AD251	Time Complexity and Analysis of Algorithms	3	0	0	3
3	U24AD252	Foundations of Artificial Intelligence	3	0	0	3
4	U24AD253	Operating Systems	3	0	0	3
5	U24AD254	Software Engineering	3	0	0	3
6	U24AD751	Ancient Indian Innovations in Computer Technology (Open Elective - I)	3	0	0	3
Practical						
7	U24AD255	Algorithmics Laboratory	0	0	4	2
8	U24AD256	Operating Systems Laboratory	0	0	2	1
9	U24EM2XX	Internship / Practical Training / Value Added Course(s)	2	0	2	3
Audit Course						
10	U24AUXXX	Audit Course - II	-	-	-	-
Total			20	1	8	25

SEMESTER V

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	U24AD301	Data Communication and Networks	3	0	0	3
2	U24AD302	Exploratory Data Analytics	3	0	0	3
3	U24AD303	Machine Learning Algorithms	3	0	0	3
4	U24AD7XX	Open Elective - II	3	0	0	3
5	U24AD9XX	Professional Elective - I	3	0	0	3
6	U24AD9XX	Professional Elective - II	3	0	0	3
Practical						
7	U24AD304	Computer Networks Laboratory	0	0	2	1
8	U24AD305	Machine Learning Laboratory	0	0	4	2
9	U24EM301	Value Added Course – Community Engagement and Social Responsibility	1	0	2	2
Audit Course						
10	U24AUXXX	Audit Course - III	-	-	-	-
Total			19	0	8	23

SEMESTER VI

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	U24MA353	Advanced Statistical Techniques in Data Science	3	0	0	3
2	U24AD351	Data Warehousing and Mining	3	0	0	3
3	U24AD352	Neural Networks	3	0	0	3
4	U24AD7XX	Open Elective - III	3	0	0	3
5	U24AD8XX	Online Course - I	3	0	0	3
6	U24AD9XX	Professional Elective - III	3	0	0	3
7	U24AD9XX	Professional Elective - IV	3	0	0	3
Practical						
8	U24MA352	Computational Statistical Laboratory	0	0	4	2
9	U24EM3XX	Skill Enhancement / Value Added Course(s)	1	0	2	2
Audit Course						
10	U24AUXXX	Audit Course - IV	-	-	-	-
Total			22	0	6	25

SEMESTER VII

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	U24GE401	Professional Ethics	3	0	0	3
2	U24AD401	Cloud Computing and Virtualization Fundamentals	3	0	0	3
3	U24AD402	Data Visualization	3	0	0	3
4	U24AD403	Deep Learning Techniques	3	0	0	3
5	U24AD9XX	Professional Elective - V	3	0	0	3
6	U24AD9XX	Professional Elective - VI	3	0	0	3
Practical						
7	U24AD404	Data Visualization Laboratory	0	0	4	2
8	U24AD405	Deep Learning Laboratory	0	0	4	2
9	U24EM401	Project Phase - I	0	0	8	4
Total			18	0	16	26

SEMESTER VIII

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
Theory						
1	U24AD8XX	Online Course - II	3	0	0	3
Practical						
2	U24EM451	Project Phase - II	0	0	16	8
Total			3	0	16	11

Suggested List of Professional Elective Courses

Professional Elective - I

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24AD901	Advanced Python Programming	3	0	0	3
2	U24AD902	Recommender Systems	3	0	0	3
3	U24AD903	Data Modelling and Programming	3	0	0	3
4	U24AD904	Digital Image Processing	3	0	0	3
5	U24AD905	Object Oriented Analysis and Design	3	0	0	3

Professional Elective - II

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24AD906	Cognitive Science	3	0	0	3
2	U24AD907	Soft Computing	3	0	0	3
3	U24AD908	Business Analytics	3	0	0	3
4	U24AD909	Text Analytics	3	0	0	3
5	U24AD910	Decision Support Systems	3	0	0	3

Professional Elective - III

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24AD951	Unix Internals	3	0	0	3
2	U24AD952	Internet of Things	3	0	0	3
3	U24AD953	Big Data Analytics	3	0	0	3
4	U24AD954	Time Series Analysis	3	0	0	3
5	U24AD955	Data Engineering	3	0	0	3

Professional Elective - IV

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24AD956	Functional Programming Methods for Analytics	3	0	0	3
2	U24AD957	Natural Language Processing	3	0	0	3
3	U24AD958	Optimization Techniques	3	0	0	3
4	U24AD959	Social Media Analytics	3	0	0	3
5	U24AD960	Human Computer Interaction	3	0	0	3

Professional Elective - V

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24AD911	Immersive Technologies	3	0	0	3
2	U24AD912	Advanced Machine Learning	3	0	0	3
3	U24AD913	Reinforcement Learning	3	0	0	3
4	U24AD914	Health Care Analytics	3	0	0	3
5	U24AD915	Prompt Engineering	3	0	0	3

Professional Elective – VI

Sl. No.	Course Code	Course Name	Credits			
			L	T	P	C
1	U24AD916	Cryptography and Network Security	3	0	0	3
2	U24AD917	Advanced Deep Learning and Computer Vision	3	0	0	3
3	U24AD918	Explainable Artificial Intelligence	3	0	0	3
4	U24AD919	Robotics and Intelligent Systems	3	0	0	3
5	U24AD920	Generative AI Models	3	0	0	3