

Department of **Computer Science and Engineering**  
 B. Tech. in **Artificial Intelligence and Data Science**

<b>Semester I</b>					
<b>Sl. No.</b>	<b>Code</b>	<b>Course Name</b>	<b>Category</b>	<b>L-T-P</b>	<b>Credit</b>
1	AD101T	Calculus	BSC	3-0-0	3
2	AD102T	Linear Algebra	PEC	4-0-0	4
3	AD103T	Introduction to Problem Solving and Computer Programming	PEC	3-0-0	3
4	AD104T	Concepts in Engineering Design	PEC	3-0-0	3
5	AD105T	Technical and Professional Communication	HMC	2-0-0	2
6	AD106T	Earth, Environment & Design	DES	2-0-0	P/F
7	AD107T	Basic Electrical and Electronics Engineering	PEC	3-0-0	3
8	AD108P	Problem Solving and Computer Programming Practice	PEC	0-1-3	3
9	AD109P	Engineering Graphics	DES	0-0-3	2
Total					23

<b>Semester II</b>					
<b>Sl. No.</b>	<b>Code</b>	<b>Course Name</b>	<b>Category</b>	<b>L-T-P</b>	<b>Credit</b>
1	AD111T	Managerial Economics and Financial Accountancy	HMC	3-0-0	3
2	AD112T	Engineering Electromagnetics	BSC	3-0-0	3
3	AD113T	Design History	DES	2-0-0	2
4	AD114T	Python Programming	PEC	3-0-0	3
5	AD115T	Professional Ethics for Engineers	HMC	2-0-0	P/F
6	AD116T	Tools and Data Management	PEC	1-0-2	3
7	AD117P	Industrial Design Sketching	BEC	0-0-3	2
8	AD118P	Design Realization	DES	0-0-3	2
9	AD119P	Engineering Electromagnetics Practice	BEC	0-0-3	2
10	AD120P	Python Programming Practice	DES	0-0-3	2
Total					22

**Semester III**

Sl. No.	Code	Course Name	Category	L-T-P	Credit
1	AD201T	Probability and Statistics	PEC	3-0-0	3
2	AD202T	Data Structures and Algorithms	PEC	3-0-0	3
3	AD203T	Programming Languages	PEC	3-0-0	3
4	AD204T	Discrete Mathematics	PEC	3-0-0	3
5	AD205T	Digital Circuits Design	PEC	3-0-0	3
6	AD206T	Advanced Python Programming Practice	PEC	0-0-3	2
7	AD207P	Data Structures and Algorithms Practice	PEC	0-0-3	2
8	AD208P	Programming Practice	PEC	0-0-3	2
Total					21

**Semester IV**

Sl. No.	Code	Course Name	Category	L-T-P	Credit
1	AD209T	Introduction to Artificial Intelligence and Data Science	PEC	3-0-0	3
2	AD210T	Design and Analysis of Algorithms	PEC	3-0-0	3
3	AD211T	Database Management Systems	PEC	3-0-0	3
4	AD212T	Data Analysis and Visualization	PEC	3-0-0	3
5	AD213T	Data Mining	PEC	3-0-2	3
6	AD214T	Design and Analysis of Algorithms Practice	PEC	0-0-3	2
7	AD215P	Data Mining Practice	PEC	0-0-3	2
8	AD216P	Data Analysis and Visualization Practice	PEC	0-0-3	2
Total					21

**Semester V**

Sl. No.	Code	Course Name	Category	L-T-P	Credit
1	AD301T	Operating Systems	PEC	3-0-0	3
2	AD302T	Data Communication and Networking	PEC	3-0-0	3
3	AD303T	Soft Computing	PEC	3-0-0	3
4	AD304T	Software Engineering	PEC	3-0-0	3
5	AD305T	Machine Learning	PEC	2-0-2	4
6	AD306P	Hadoop and Map Reduce Programming Practice	PEC	0-0-3	2
7	AD307P	Operating Systems Practice	PEC	0-0-3	2
8	AD308P	Data Communication and Networking Practice	PEC	0-0-3	2
Total					22

Semester VI					
Sl. No.	Code	Course Name	Category	L-T-P	Credit
1	AD309T	Game Theory	PEC	3-0-0	3
2	AD310T	Big Data Analytics	PEC	3-0-0	3
3	AD311T	Internet of Things	PEC	3-0-0	3
4	AD312T	High Performance Computing	PEC	3-0-0	3
5	ADxxxT	Elective – I	PEC	3-0-0	3
6	ADxxxT	Elective – II	PEC	3-0-0	3
7	AD313P	Big Data Analytics Practice	PEC	0-0-3	2
8	AD314P	Internet of Things Practice	PEC	0-0-3	2
Total					22

Semester VII					
Sl. No.	Code	Course Name	Category	L-T-P	Credit
1	AD401T	Elective – III	PEC	3-0-0	3
3	AD402	Internship / Engineering Projects in Community Services (EPICS)	PCD	0-0-25	5
4	AD403	Artificial Intelligence / Data Science Project	DES	0-0-25	5
Total					13

Semester VIII					
Sl. No.	Code	Course Name	Category	L-T-P	Credit
1	AD404T	Security, Privacy and Trust in Data Science	PEC	3-0-0	3
2	ADxxxT	Elective – IV	PEC	3-0-0	3
3	AD405T	Innovation and Entrepreneurship	PEC	3-0-0	3
4	AD406	Project	DES	0-0-25	10
Total					19

**Tentative List of Electives for I, II, III and IV (L-T-P-C: 3-0-0-3)**

<b>Sl. No.</b>	<b>Code</b>	<b>Course Name</b>	<b>Category</b>
1	AD407T	Quantum Computing	PEC
2	AD408T	Advance Decision Modeling Techniques	PEC
3	AD409T	Design Patterns	PEC
4	AD410T	Optimization Techniques	PEC
5	AD411T	Parallel and Distributed Computing	PEC
6	AD412T	Service Oriented Architecture	PEC
7	AD413T	Digital Image Processing	PEC
8	AD414T	Real Time Systems	PEC
9	AD415T	Mobile Computing	PEC
10	AD416T	Graph Theory	PEC
11	AD417T	Information Retrieval	PEC
12	AD418T	Probabilistic and Graphical Models for Data Science	PEC
13	AD419T	Robotics and Intelligent Systems	PEC
14	AD420T	Business Analytics	PEC
15	AD421T	Natural Language Processing	PEC
16	AD422T	Principles of Data Analytics	PEC
17	AD423T	Advanced Data Structures and Algorithms	PEC
18	AD424T	Computer Vision and Image Processing	PEC
19	AD425T	Social Media and Network Analysis	PEC
20	AD426T	Decision Sciences	PEC
21	AD427T	Information Theory and Coding	PEC
22	AD428T	Fault-Tolerant Systems	PEC
23	AD429T	Blockchain Architecture and Design	PEC
24	AD430T	Large Scale Integration Systems	PEC
25	AD431T	Approximation and Randomized Algorithms	PEC
26	AD432T	Computer Graphics and Multimedia	PEC
27	AD433T	Marketing Science and Predictive Analysis	PEC
28	AD434T	Cyber Forensics	PEC
29	AD435T	Health Care Analytics	PEC
30	AD436T	Semantic Web	PEC
31	AD437T	Advanced Statistical Learning	PEC
32	AD438T	Financial Analytics	PEC
33	AD439T	Cloud Computing	PEC
34	AD440T	Parallel Algorithms	PEC