School of Computing Science and Engineering	
B.Tech in Artificial Intelligence and Data Science	
Academic year 2020-2024	

B.Tech in AI & DS		B.Tech in AI & DS	
Semester I		**Semester II**	
Name of the course	**Credits**	**Name of the course**	**Credits**
Differential and Vector calculus	2	Integral & Multiple Calculus	2
Matrices	2	Ordinary & Partial Differential Equations	2
AI Fundamentals	2	Data Structure Using C	3
Energy Sources and Audit	1	Embedded Technology and IoT	2
Communuication skills	3	Introduction to Machine Learning	2
Python Programing I and Data Visualization	2	Introduction to Digital Systems	3
Bio-System in Engineering	2	Digital Fabrication	1
Data Analytics (Excel and Tableu)	1	Waste Management	1
Programing for Problem Solving	3	Environmental Science	0.5
Engineering Physics	2	Liberal and Creative Arts)	0.5
Engineering Physics Lab	1	Creativity Innovation and Entrepreneurship	2
	21	Signal Processing and Applications	2
			21

Semester III		Semester IV	
Name of the course	**Credits**	**Name of the Course**	**Credits**
Discrete Mathematics	2	AI Knowledge Representation and Reasoning	3
Graph Theory and Number System	2	Optimization in Machine Learning	2
Probability and Statisctics using R	2	Problem Identification & Design Thinking	2
Data Communication and Networking	2	Program Elective-I	3
Python Programming II	3	Analysis and Design of Algorithms	3
Data Base management System	2	Java Programming	2
Operating System	3	Predictive Analytics	2
Managerial Communication Effectiveness Lab	1	Engineering Clinic-2 AI in Agriculture	2
Design and Engineering	2	Logical and Critical reasoning	1
Engineering Clinic-I-Chatbot Applications	2	MOOC	1
	21		21

Semester V		Semester VI	
Name of the Course	**Credits**	**Name of the Course**	**Credits**
Bayesian Data Analysis	2	Sensors & Actuators	2
Theory of Computation	2	Product Design & IPR	2
English Proficiency and Aptitude Building	3	Campus to Corporate program	3
Computer Vision & Image Processing	2	Natural Language Processing	2
Software Engineering & Testing	2	Program Electives-III	3
Program Elective-II	1	Professional Ethics and Human Values	1
Soft Computing	2	MOOC (Domain Related Courses)	1
Effective Leadership and Decision Making Skills	1	Design and Innovation Project(Communication Based)	1
Engineering Clinic-3(Industrial Internship)	2	Elective 3	2
Cloud Computing	2	Information Sciences	2
Big Data Tools and Technique	2	Deep Learning	3
Mini Project -Educational Data Mining	1	Mini Project-Geo Spatial,GIS	1
Foreign Language - 1 (German, Japanese, French) *Optional	0	Applications of AI in Finance	1
Total	22		24

Semester VII		Semester VIII	
Name of the Course	**Credits**	**Name of the Course**	**Credits**

Program Elective-IV	3
Program Elective-IV	3
Deployment and Capstone Projects-Phase 1	6
Technical Training-V	3
	15

MOOC	3
Deployment and Capstone Projects-Phase -II	6
Industrial Internship	6
	15

S.No.	Professional Elective-I	C
1	Cryptographic Fundamentals	3
2	Software Project Management	3
3	Cyber Security	3
4	Optimization Techniques	3
5	Artificial Intelligence	3

S.No.	Professional Elective-II	C
1	Internet of Things	3
2	Data Sciences	3
3	Data Mining and Warehousing	3
4	Bio Informatics	3
5	Network Design and Management	3

S.No.	Professional Elective-III	C
1	Microprocessor	3
2	Quantum Computing	3
3	Soft Computing	3
4	Machine Learning	3
5	Modeling and Simulation	3

S.No.	Professional Elective-IV	C
1	Cloud Application Development	3
2	Adhoc & Sensors Netwoks	3
3	Statistical Analysis using R	3
4	Block Chain	3
5	Software Defined Network	3

S.No.	Professional Elective-V	C
1	Digital Signal Processing	3
2	Object Oriented Analysis & Design	3
3	E-Business	3
4	Network Operating System	3
5	Robotics Process automation	3

S.No.	Professional Elective-VI	C
1	Digital System Design using VHDL	3
2	Advanced Computer Networks	3
3	Enterprise Resource Planning	3
4	Deep Learning	3
5	UI&UX	3

S.No.	University Elective/Management elective-I	C
1	Enterpreneurship	3
2	Project Management	3
3	Managerial Economics	3
4	Equity & Portfolio Management	3

S.No.	University Elective/Management elective-II	C
1	Banking system	3
2	Corporate Laws and Policy	3
3	Export and Import Policy	3

Maths Basket		
S.No.	Basket	C
1	Discrete Mathematics	2
2	Numerical Analysis	2
3	Concept of Probability	2
4	Probability for Data Science	2
5	Transforms	2
6	Linear Algebra	2
7	Statistics	2
8	Numerical Analysis	2
9	Optimisation	2