UNIVERSITY SCHOOL
OF
INFORMATION AND COMMUNICATION TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PROGRAMME STRUCTURE

B.Tech. in Artificial Intelligence
2019-2023

GAUTAM BUDDHA UNIVERSITY
GAUTAM BUDH NAGAR, GREATER NOIDA, U.P.

SEMESTER I

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MA101	Engineering Mathematics-I	3	1	0	4	GE1
2	CY101	Engineering Chemistry	3	1	0	4	GE2
3	CS101	Fundamentals of Computer Programming	3	1	0	4	C1
4	CS105	Introduction of Artificial Intelligence	2	0	0	2	C2
5	EC101	Basic Electronics Engineering	3	1	0	4	GE3
6	EN101	English Proficiency	2	0	0	2	GE4
7	CE103	Engineering Graphics	1	0	2	2	GE5
8	CY103	Engineering Chemistry Lab	0	0	2	1	GE L1
9	CS181	Computer Programming Lab	0	0	2	1	L1
10	EC181	Basic Electronics Engineering Lab	0	0	2	1	GE L2
11	GP	General Proficiency	Non Credit				
		Total Hours and Credits	**17**	**4**	**8**	**25**	

SEMESTER II

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MA102	Engineering Mathematics-II	3	1	0	4	GE6
2	PH102	Engineering Physics	3	1	0	4	GE7
3	EE102	Basic Electrical Engineering	3	1	0	4	GE8
4	ME101	Engineering Mechanics	3	1	0	4	GE9
5	ES101	Environmental Studies	3	1	0	4	GE10
6	AI102	Introduction to Python	2	0	0	2	C3
7	PH104	Engineering Physics Lab	0	0	2	1	GE L3
8	EE104	Basic Electrical Engineering Lab	0	0	2	1	GE L4
9	EN151	Language Lab	0	0	2	1	GE L5
10	ME102	Workshop Practice	1	0	2	2	GE L6
11	AI182	Python Lab	0	0	2	1	L2
12	GP	General Proficiency	Non Credit				
		Total Hours and Credits	**18**	**5**	**10**	**28**	

SEMESTER III

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	AI201	Software Engineering	3	0	0	3	C4
2	AI203	Intelligent Systems	3	0	0	3	C5
3	AI205	Theory of Autometa	3	0	0	3	C6
4	AI207	Database Management Systems	3	0	0	3	C7
5	AI209	Computer Vision	3	0	0	3	C8
6	AI211	Introduction to R Programming	3	1	0	4	C9
7	AI281	Database Management Systems Lab	0	0	3	2	L3
8	AI283	Computer Vision Lab	0	0	3	2	L4
9	AI285	R Programming Lab	0	0	3	2	L5
10	GP	General Proficiency	Non Credit				
		Total Hours and Credits	**18**	**1**	**9**	**25**	

SEMESTER IV

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	AI202	Machine Learning	3	1	0	4	C10
2	AI204	Operating System	3	0	0	3	C11
3	AI206	Biometric Security	3	0	0	3	C12
4	AI208	Introduction to MATLAB	3	0	0	3	C13
5	AI210	Quantum Computing	3	0	0	3	C14
6	AI212	Compter Networks	3	0	0	3	C15
7	AI282	Machine Learning using Python Lab	0	0	3	2	L6
8	AI284	Operating System Lab	0	0	3	2	L7
9	AI286	MATLAB	0	0	3	2	L8
10	GP	General Proficiency	Non Credit				
		Total Hours and Credits	**18**	**1**	**9**	**25**	

SEMESTER V

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	AI301	Big Data Analytics	3	0	0	3	C16
2	AI303	Compiler Design	3	0	0	3	C17
3	AI305	Deep Learning and Reinforcement Learning	3	0	0	3	C18
4	AI307	Operational Information Security Management and Biometrics	3	1	0	4	C19
5		Elective 1	3	0	0	3	E1
6		Elective 2	3	0	0	3	E2
7	AI381	Deep Learning Lab using Python	0	0	3	2	L9
8	AI383	Compiler Design Lab	0	0	3	2	L10
9	AI385	Big Data Analytics Lab	0	0	3	2	L11
10	GP	General Proficiency	Non Credit				
		Total Hours and Credits	**18**	**1**	**9**	**25**	

SEMESTER VI

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	AI302	IoT and Its Applications	3	0	0	3	C20
2	AI304	Expert Systems	3	0	0	3	C21
3	AI306	Robot Kinematics	3	0	0	3	C22
4	AI308	Convex Optimization	3	1	0	4	C23
5		Elective 3	3	0	0	3	E3
6		Elective 4	3	0	0	3	E4
7	AI382	Internet of Things Lab	0	0	3	2	L12
8	AI384	Expert Systems Lab	0	0	3	2	L13
9	AI386	Robot Kinematics Lab	0	0	3	2	L14
10	GP	General Proficiency	Non Credit				
		Total Hours and Credits	**18**	**1**	**9**	**25**	

Industrial Training will be done by candidate after third year during the summer break and it will be of minimum 4 weeks. It will be evaluated as per University Examination in VII semester.

SEMESTER VII

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MA402	Modeling and Simulation	3	0	0	3	GE11
2	AI401	Computational Intelligence	3	0	0	3	C24
3	AI403	Robotics and Drones	3	0	0	3	C25
4	AI405	Natural Language Processing	3	0	0	3	C26
5		Elective 5	3	0	0	3	E5
6	AI481	Robotics and Drones Lab	0	0	3	2	L15
7	AI491	Industrial Traning	0	0	6	3	IT1
8	AI493	Minor Project	0	0	10	5	MP1
9	GP	General Proficiency	Non Credit				
		Total Hours and Credits	**15**	**0**	**19**	**25**	

SEMESTER VIII

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	AI490	Seminar	0	0	3	2	S1
2	AI492	Intenship	0	0	30	15	I1
3	AI494	Major Project	0	0	16	8	MP2
4	GP	General Proficiency	Non Credit				
		Total Hours and Credits	**0**	**0**	**49**	**25**	

GRAND TOTAL OF CREDITS   =   203

In the **Seminar**, students need to study and present in the group, any latest topic of their specialized area and It will be evaluated as per University Examination Rules.

The **Internship** in Industry will be done by candidate during the 8th semester and it will be for a minimum of 4 (-6) months. It will be evaluated as per University Examination Rules.

Minor and Major Project will be in a group and It will be evaluated as per University Examination Rules.

USICT will provide a mentor/supervisor for industrial training, seminar, internship, minor and major projects.

ELECTIVES FROM USICT

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	AI309	Computer Graphics	3	0	0	3	E1
2	AI311	Introduction to Brain and Neuroscience	3	0	0	3	E1
3	AI313	Stochastic Processes	3	0	0	3	E1
4	AI315	Computer Based Numerical & Statistical Techniques	3	0	0	3	E1
5	AI317	Seuence Models	3	0	0	3	E1
6	AI319	Bayesian Data Theory	3	0	0	3	E2
7	AI321	Speech Analysis and Systems	3	0	0	3	E2
8	AI323	Graph Theory	3	0	0	3	E2
9	AI325	Distributed Database	3	0	0	3	E2
10	AI327	Embedded Systems	3	0	0	3	E2
11	AI310	Digital Image Processing	3	0	0	3	E3
12	AI312	Gaming	3	0	0	3	E3
13	AI314	Knowledge Engineering	3	0	0	3	E3
14	AI316	Predictive Analysis	3	0	0	3	E3
15	AI318	Digital Fabrication	3	0	0	3	E3
16	AI320	AI Enabled Cyber Security	3	0	0	3	E4
17	AI322	Evolutionary Computation	3	0	0	3	E4
18	AI324	Fuzzy logic	3	0	0	3	E4
19	AI326	Distributed Operating System	3	0	0	3	E4
20	AI328	Pattern Recognition	3	0	0	3	E4
21	AI407	Automation and Robotics	3	0	0	3	E5
22	AI409	Optimization Techniques	3	0	0	3	E5
23	AI411	3D Printing	3	0	0	3	E5
24	AI413	Parallel Distributed Systems	3	0	0	3	E5
25	AI415	Time Series Analysis and Applications	3	0	0	3	E5

AI	Artificial Intelligence	**L**	Lab from USICT
GE	General Elective from other Deptt./School	**IT1**	Industrial Training
GE L	General Elective Lab from other Deptt./School	**MP**	Minor / Major Project
C	Compulsary Course from USICT	**S1**	Seminar
E	Elective from USICT	**I1**	Internship