UNIVERSITY SCHOOL

OF

INFORMATION AND COMMUNICATION TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PROGRAMME STRUCTURE

MASTER OF COMPUTER APPLICATIONS (MCA)

WITH SPECIALIZATION IN ARTIFICIAL INTELLIGENCE

2 YEAR PROGRAMME

2024-26

GAUTAM BUDDHA UNIVERSITY
GAUTAM BUDH NAGAR,GREATER NOIDA,UP,INDIA

Master of Computer Applications (MCA) - Artificial intelligence   **Effective from 2024(Batch 2024-26)**

Passed B.Sc/ B.Com/ B.A with Mathematics at 10+2 level or at Graduation level with having at least 50% marks (45% for SC/ST candidates of Haryana only) in aggregate, along with the students admitted with this eligibility will have to simultaneously undertake additional *bridge course as prescribed by the University during the first semester.

Note: * It is compulsory for each student to pass out bridge course (three additional theory papers and one practical as prescribed in scheme of examination of bridge course) as per University norms during the 1st year of MAI-2 year course and the degree will be awarded after the completion of bridge course. However, these papers under bridge course will be taught only in the 1st semester of the course.

OR

Passed BCA/B.Sc.(Hons.)Computer Science/ B.E. or B.Tech.(CSE/IT)/ B.Voc.(Software Development/IT) or an

equivalent degree with having at least 50% marks (45% for SC/ST candidates of Haryana only) in aggregate.

BRIDGE COURSE

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MCB001	Computer Fundamental and Programming	3	1	0	4	BC1
2	MCB003	Introduction to Internet Technology	3	0	0	3	BC2
3	MCB005	Fundamental of Operating Systems	3	0	0	3	BC3
4	MCB081	Operating System Lab	0	0	3	2	BC-L1
5	MCB083	Internet Technology Lab	0	0	3	2	BC-L2
		Total Hours and Credits	9	1	6	14	

SEMESTER I

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MAI101	Computer Fundamental and C Programming	3	0	0	3	CC1 / FC
2	MAI103	Software Engineering	3	0	0	3	CC2
3	MAI105	Artificial Intelligence	3	0	0	3	CC3 / FC
4	MAI107	Discrete Mathematics	3	0	0	3	CC4
5	MAI109	Theory of Automata	3	0	0	3	CC5
6	MAI111	Operating System	3	0	0	3	CC6
7	MAI113	Data Base Management System	3	0	0	3	CC7
8	ES401	Fundamental of Environmental Science	3	0	0	3	OE1 / AECC
9	MAI181	C Programming Lab	0	0	3	2	CC-L1 / SEC
10	MAI183	Data Base Management System Lab	0	0	3	2	CC-L2 / SEC
11	GP	General Proficiency		Non Credit			
		Total Hours and Credits	24	0	6	28	

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SEMESTER II

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MAI102	JAVA Programming	3	0	0	3	CC8 / SEC
2	MAI104	Data Structure and Algorithms	3	0	0	3	CC9 / SEC
3	MAI106	Compiler Design	3	0	0	3	CC10
4	MAI108	Expert System Design	3	0	0	3	CC11
5	MAI110	Natural Language Processing	3	0	0	3	CC12
6		Elective-1	3	0	0	3	E1 / DSE
7		Elective-2 NPTEL	3	0	0	3	E2 / DSE
8	EN532	Fundamental of Language Science	3	0	0	3	OE2 / AECC
9	MAI182	Data Structure and Algorithms Lab	0	0	3	2	CC-L3 / SEC
10	MAI184	JAVA Programming Lab	0	0	3	2	CC-L4 / SEC
11	GP	General Proficiency	Non Credit				
		Total Hours and Credits	24	0	6	28	

SEMESTER III

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MAI201	Analysis and Design of Algorithm	3	0	0	3	CC13
2	MAI203	Machine Learning	2	0	0	2	CC14
3	MAI205	Soft Computing Techniques	3	0	0	3	CC15
4	MAI207	Python Programming	2	0	0	2	CC16 / SEC
5		Elective-3	3	0	0	3	E3 / DSE
6		Elective-4 (NPTEL)	3	0	0	3	E4 / DSE
7	MAI227	Algorithms for Deep Learning	3	0	0	3	CC17
8	MAI291	Minor Project	0	0	10	5	MP1 / E
9	MAI281	Analysis and Design of Algorithm Lab	0	0	3	2	CC-L5 / SEC
10	MAI283	Machine Learning using Python Lab	0	0	3	2	CC-L6 / SEC
11	GP	General Proficiency	Non Credit				
		Total Hours and Credits	19	0	16	28	

SEMESTER IV

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MAI290	Seminar	0	0	3	2	S / E
2	MAI292	Major Project	0	0	20	10	MP2 / E
3	MAI294	Internship	0	0	32	16	I / E
4	GP	General Proficiency	Non Credit				
		Total Hours and Credits	0	0	55	28	

GRAND TOTAL OF CREDITS   =   112

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Swayam/NPTEL courses will also be offered as **Discipline Specific Elective** during the II and III semester and Swayam/NPTEL courses list will be provided by the deptt. OR if USICT will offer the course as an Discipline Specific Elective, students will complete it through regular class. It will be evaluated as per University Examination Rules.

In the **Seminar**, student need to study and present individually, on latest research paper of their specialized area and It will be evaluated as per University Examination Rules.

The **Internship** in Industry will be done by candidate individually during the 4th 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 seminar, internship, minor and major projects.

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ELECTIVES FROM USICT

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S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MAI112	Pattern Matching	3	0	0	3	E1
2	MAI114	Robot Kinematics	3	0	0	3	E1
3	MAI116	Knowledge Engineering	3	0	0	3	E1
4	MAI118	Computer Vision	3	0	0	3	E1
5	MAI120	Fuzzy Logic	3	0	0	3	E2
6	MAI122	Evolutionary Computing	3	0	0	3	E2
7	MAI124	Speech Processing	3	0	0	3	E2
8	MAI126	Convex Optimization	3	0	0	3	E2
9	MAI209	Computational Intelligence	3	0	0	3	E3
10	MAI211	Parallel Distributed Systems	3	0	0	3	E3
11	MAI213	AI Enabled Cyber Security	3	0	0	3	E3
12	MAI215	Deep Learning and Reinforcement Learning	3	0	0	3	E3
13	MAI217	Pattern Matching	3	0	0	3	E4
14	MAI219	Neural Network	3	0	0	3	E4
15	MAI221	Brain and Neuroscience	3	0	0	3	E4
16	MAI223	Speech Analysis and Systems	3	0	0	3	E4
18	MAI 229	Mobile Computing	3	0	0	3	E4
18	ES401	Fundamentals of Environmental Science	3	0	0	3	OE1
19	ES507	Energy and Environment	3	0	0	3	OE1
20	EN532	Fundamental of Language Science	3	0	0	3	OE1

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CC Core Course from USICT for Course Type   DSE Discipline Specific Course

FC Foundation Course   BC Brige Course

 CC-L Core Course