

**UNIVERSITY SCHOOL  
OF  
INFORMATION AND COMMUNICATION TECHNOLOGY**  
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

**PROGRAMME STRUCTURE**

**MASTER OF COMPUTER APPLICATIONS (MCA)  
3 YEAR PROGRAMME  
2019-22**



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

## SEMESTER I

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MCA101	Computer Fundamental and C Programming	3	0	0	3	CC1 /FC
2	MCA103	Computer Organization and Architecture	3	0	0	3	CC2
3	MCA105	Artificial Intelligence	3	0	0	3	CC3
4	MCA107	Discrete Mathematics	3	1	0	4	CC4
5	MCA109	Concepts of Operating System	3	0	0	3	CC5 / FC
6	MCA111	Computer Networks	3	0	0	3	CC6
7	MCA181	C Programming Lab	0	0	3	2	CC-L1 / SEC
8	MCA183	Operating System Lab	0	0	3	2	CC-L2
9	GP	General Proficiency	Non Credit				
<b>Total Hours and Credits</b>			<b>18</b>	<b>1</b>	<b>6</b>	<b>23</b>	

## SEMESTER II

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MCA102	Object Oriented Analysis and Design	3	0	0	3	CC7
2	MCA104	Data Structure and Algorithms	3	0	0	3	CC8 / SEC
3	MCA106	Data Base Management System	3	0	0	3	CC9
4	MCA108	Computer Graphics & Animation Modeling	3	0	0	3	CC10
5	MCA110	Theory of Automata	3	0	0	3	CC11
6	MCA112	E-Commerce	3	0	0	3	CC12
7	MCA182	Data Structure and Algorithms Lab	0	0	3	2	CC-L3 / SEC
8	MCA184	Data Base Management System Lab	0	0	3	2	CC-L4 / SEC
9	GP	General Proficiency	Non Credit				
<b>Total Hours and Credits</b>			<b>18</b>	<b>0</b>	<b>6</b>	<b>22</b>	

## SEMESTER III

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MCA201	JAVA Programming	3	0	0	3	CC13 / SEC
2	MCA203	Software Engineering	3	0	0	3	C14
3	MCA205	Data Communication and Networks	3	0	0	3	C15
4	MCA207	Analysis and Design of Algorithm	3	0	0	3	C16
5	MCA209	Compiler Design	3	0	0	3	C17
6	MCA211	Software Architecture and Design	3	0	0	3	C18
7	MCA281	JAVA Programming Lab	0	0	3	2	CC-L5 / SEC
8	MCA283	Analysis and Design of Algorithm Lab	0	0	3	2	CC-L6 / SEC
9	GP	General Proficiency	Non Credit				
<b>Total Hours and Credits</b>			<b>18</b>	<b>0</b>	<b>6</b>	<b>22</b>	

## SEMESTER IV

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MCA202	Soft Computing Techniques	3	0	0	3	CC19
2	MCA204	Python	3	0	0	3	CC20
3	MCA206	Compiler Design	3	0	0	3	CC21
4	MCA208	Software Reliability	3	0	0	3	CC22
5		Elective-1	3	0	0	3	E1 / DSE
6		Elective-2	3	0	0	3	E2 / DSE
7	MCA282	Python Lab	0	0	3	2	CC-L7 / SEC
8	MCA292	Minor Project	0	0	10	5	MP1 / E
9	GP	General Proficiency	Non Credit				
<b>Total Hours and Credits</b>			<b>18</b>	<b>0</b>	<b>13</b>	<b>25</b>	

## SEMESTER V

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MCA301	Big Data Analytics	3	0	0	3	C23
2	MCA303	Machine Learning	3	0	0	3	C24
3	MCA305	Information Security	3	0	0	3	C25
4		Elective-3	3	0	0	3	E3 / DSE
5		Elective-4	3	0	0	3	E4 / DSE
6	EN532	Fundamental of Language Science	3	0	0	3	OE1 / AECC
7	ES401	Fundamental of Environmental Science	3	0	0	3	OE2 / AECC
8	MCA381	Big Data Analytics Lab	0	0	3	2	CC-L8 / SEC
9	MCA383	Machine learning Lab	0	0	3	2	CC-L9 / SEC
10	GP	General Proficiency	Non Credit				
<b>Total Hours and Credits</b>			<b>21</b>	<b>0</b>	<b>6</b>	<b>25</b>	

## SEMESTER VI

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MCA390	Seminar	0	0	3	2	S / E
2	MCA392	Major Project	0	0	20	10	MP2 / E
3	MCA394	Intenship	0	0	32	16	I / E
4	GP	General Proficiency	Non Credit				
<b>Total Hours and Credits</b>			<b>0</b>	<b>0</b>	<b>55</b>	<b>28</b>	

**GRAND TOTAL OF CREDITS = 145**

## ELECTIVES FROM DCSE

S.No.	Course Code	Course Name	L	T	P	Credits	Types
1	MCA210	Pattern Matching	3	0	0	3	E1
2	MCA212	Natural Language Processing	3	0	0	3	E1
3	MCA214	Software Project Management	3	0	0	3	E1
4	MCA216	Blockchain Fundamentals	3	0	0	3	E1
5	MCA218	Fuzzy Logic	3	0	0	3	E2
6	MCA220	Evolutionary Computing	3	0	0	3	E2
7	MCA222	Knowledge Engineering	3	0	0	3	E2
8	MCA224	Expert System	3	0	0	3	E2
9	MCA307	Speech Processing	3	0	0	3	E3
10	MCA309	Digital Image Processing	3	0	0	3	E3
11	MCA311	Pattern Matching	3	0	0	3	E3
12	MCA313	Neural Network	3	0	0	3	E3
13	MCA315	Computer Vision	3	1	0	4	E4
14	MCA317	Data Science	3	0	0	3	E4
15	MCA319	Cloud Computing	3	0	0	3	E4
16	MCA321	Next Generation Network	3	0	0	3	E4

Swayam/NPTEL courses will also be offered as **Discipline Specific Elective** during the IV and V 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 6th 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.

**MCA** Master of Computer Applications

**CC** Core Course from USICT for Type of Course

**FC** Foundation Course

**CC-L** Core Course Lab from USICT for Type of Course

**GE** General Elective from related discipline of other Deptt./School

**AECC** Ability Enhancement Compulsary Course

**OE** Open Elective from other discipline of other Deptt./School

**SEC** Skill Enhancement Course

**DSE** Discipline Specific Course

**OE** Open Elective

**MP1** Minor Project

**MP2** Major Project

**S** Seminar

**I** Industrial Training / Internship