HINDUSTAN
INSTITUTE OF TECHNOLOGY & SCIENCE
(DEEMED TO BE UNIVERSITY)

M.C.A - Master of Computer Applications

(Duration: 2 Years)

CURRICULUM & SYLLABI

(Inline with NEP)

Applicable for candidates admitted from 2022-23

DEPARTMENT OF COMPUTER APPLICATIONS

HINDUSTAN INSTITUTE OF TECHNOLOGY AND SCIENCE

MCA - Master of Computer Applications

Curriculum

SEMESTER I									
SL. NO	**COURSE CATEGORY**	**COURSE CODE**	**NAME OF THE COURSE**	**L**	**T**	**P**	**C**	**S**	**TCH**
1	BS	CMA42001	Statistics for Computer Science	3	1	0	4	0	4
2	BS	CCM42001	Basics of Accounting	1	1	0	2	0	2
3	PC	CCA42001	Object Oriented Programming	3	0	2	4	0	5
4	PC	CCA42002	Data Communication and Networking	2	1	0	3	1	3
5	PC	CCA42003	Software Engineering Concepts	3	0	0	3	1	3
6	PC	CCA42004	Advanced Data Structures and Algorithms	3	0	2	4	0	5
7	PC	CCA42005	Python Programming	2	0	2	3	0	4
Total				**17**	**3**	**6**	**23**	**2**	**26**
L – Lecture; T – Tutorial; P – Practical; C – Credit; S- Self Study; TCH- Total Contact Hours									

SEMESTER II									
SL. NO	**COURSE CATEGORY**	**COURSE CODE**	**NAME OF THE COURSE**	**L**	**T**	**P**	**C**	**S**	**TCH**
1	PC	CCA42006	Machine Learning	3	0	2	4	0	5
2	PC	CCA42007	Full Stack Web Development	2	0	2	3	0	4
3	PC	CCA42008	Advanced Database Technologies	2	0	2	3	1	4
4	BS	CCA42009	Research Methodology and IPR	3	0	0	3	1	3
5	DE	CCA425**	DE-1	3	0	0	3	0	3
6	DE	CCA425**	DE-2	2	0	2	3	0	4
7	PC	CCA42400	Software Design Project	0	0	4	2	1	4
Total				**15**	**0**	**12**	**21**	**3**	**27**
L – Lecture; T – Tutorial; P – Practical; C – Credit; S- Self Study; TCH- Total Contact Hours									

SEMESTER III									
SL. NO	**COURSE CATEGORY**	**COURSE CODE**	**NAME OF THE COURSE**	**L**	**T**	**P**	**C**	**S**	**TCH**
1	PC	CCA42010	Software Testing and Quality Assurance	2	1	2	4	0	5
2	PC	CCA42011	Cryptography and Network Security	3	0	2	4	1	5
3	PC	CCA425**	Open Online Courses*	3	0	0	3	0	3
	BS	CEL42001	Communication Skills and Professional Development	2	0	2	3	0	3
4	DE	CCA425**	DE-3	2	0	2	3	0	4
5	DE	CCA425**	DE-4	2	0	2	3	0	4
6	PC	CCA42800	Research Paper Review	0	0	6	3	1	6
7	PC	CCA42801	Internship**	0	0	0	2	0	-
Total				**14**	**1**	**16**	**25**	**2**	**30**
L – Lecture; T – Tutorial; P – Practical; C – Credit; S- Self Study; TCH- Total Contact Hours									

*To be chosen at the time of offering the course **Internship carried out in the end of II Semester and evaluated in the III Semester

SEMESTER IV									
SL. NO	**COURSE CATEGORY**	**COURSE CODE**	**NAME OF THE COURSE**	**L**	**T**	**P**	**C**	**S**	**TCH**
1	PC	CCA42802	Project Work	0	0	40	20	4	40
Total				**0**	**0**	**40**	**20**	**4**	**40**
L – Lecture; T – Tutorial; P – Practical; C – Credit; S- Self Study; TCH- Total Contact Hours									

Total Credits: 89

M.C.A-Master of Computer Applications

LIST OF DEPARTMENT ELECTIVES

SEM	COURSE CATEGORY	COURSE CODE	NAME OF THE COURSE	L	T	P	C	S	TCH
DEPARTMENT ELECTIVE-1(DE-1)									
2	DE	CCA42500	Cloud Computing Concepts	3	0	0	3	0	3
2	DE	CCA42501	Internet of Things	3	0	0	3	0	3
2	DE	CCA42502	Big data Framework	3	0	0	3	0	3
2	DE	CCA42503	Virtualization Techniques	3	0	0	3	0	3
DEPARTMENT ELECTIVE-2(DE-2)									
2	DE	CCA42504	Data Analysis and Visualization Techniques	2	0	2	3	0	4
2	DE	CCA42505	BlockChain Technology	2	0	2	3	0	4
2	DE	CCA42506	R Programming	2	0	2	3	0	4
2	DE	CCA42507	Cloud Application Development	2	0	2	3	0	4
2	DE	CCA42508	Cloud Managed Services	2	0	2	3	0	4
DEPARTMENT ELECTIVE-3(DE-3)									
3	DE	CCA42509	Natural Language Processing	2	0	2	3	0	4
3	DE	CCA42510	Principles of Deep Learning	2	0	2	3	0	4
3	DE	CCA42511	Data Classification Methods and Evaluation	2	0	2	3	0	4
3	DE	CCA42512	Cloud Computing with Web Services	2	0	2	3	0	4
DEPARTMENT ELECTIVE-4(DE-4)									
3	DE	CCA42513	Augmented and Virtual Reality	2	0	2	3	0	4
3	DE	CCA42514	Big Data Analytics	2	0	2	3	0	4
3	DE	CCA42515	Predictive Analytics	2	0	2	3	0	4
3	DE	CCA42516	Cloud Security	2	0	2	3	0	4
3	DE	CCA42517	Cloud Platform Essentials	2	0	2	3	0	4

M.C.A-Master of Computer Applications (Specialization in Big Data Analytics)

LIST OF DEPARTMENT ELECTIVES

	COURSE CATEGORY	COURSE CODE	NAME OF THE COURSE	L	T	P	C	S	TCH
DEPARTMENT ELECTIVE-1(DE-1)									
2	DE	CCA42500	Cloud Computing Concepts	3	0	0	3	0	3
2	DE	CCA42502	Big data Framework	3	0	0	3	0	3
DEPARTMENT ELECTIVE-2(DE-2)									
2	DE	CCA42504	Data Analysis and Visualization Techniques	2	0	2	3	0	4
2	DE	CCA42506	R Programming	2	0	2	3	0	4
DEPARTMENT ELECTIVE-3(DE-3)									
3	DE	CCA42510	Principles of Deep Learning	2	0	2	3	0	4
3	DE	CCA42511	Data Classification Methods and Evaluation	2	0	2	3	0	4
DEPARTMENT ELECTIVE-4(DE-4)									
3	DE	CCA42514	Big data Analytics	2	0	2	3	0	4
3	DE	CCA42515	Predictive Analytics	2	0	2	3	0	4

M.C.A-Master of Computer Applications - (Specialization in Cloud Computing)

LIST OF DEPARTMENT ELECTIVES

SEM	COURSE CATEGORY	COURSE CODE	NAME OF THE COURSE	L	T	P	C	S	TCH
DEPARTMENT ELECTIVE-1(DE-1)									
2	DE	CCA42500	Cloud Computing Concepts	3	0	0	3	0	3
2	DE	CCA42503	Virtualization Techniques	3	0	0	3	0	3
DEPARTMENT ELECTIVE-2(DE-2)									
2	DE	CCA42507	Cloud Application Development	2	0	2	3	0	4
2	DE	CCA42508	Cloud Managed Services	2	0	2	3	0	4
DEPARTMENT ELECTIVE-3(DE-3)									
3	DE	CCA42510	Principles of Deep Learning	2	0	2	3	0	4
3	DE	CCA42512	Cloud Computing with Web Services	2	0	2	3	0	4
DEPARTMENT ELECTIVE-4(DE-4)									
3	DE	CCA42516	Cloud Security	2	0	2	3	0	4
3	DE	CCA42517	Cloud Platform Essentials	2	0	2	3	0	4