SCHOOL OF BASIC AND APPLIED SCIENCES

DEPARTMENT OF COMPUTER APPLICATIONS

CURRICULUM 2026

(in line with NEP 2020)

M.C.A - Master of Computer Applications

Specialization in

General/Cloud Computing / Big Data Analytics

(2 YEARS)

Under Choice Based Credit system

(In line with NEP 2020)

CURRICULUM and SYLLABUS

Regulation 2026

(Applicable for Students admitted from Academic Year 2026-2027)

DEPARTMENT OF COMPUTER APPLICATIONS

SCHOOL OF BASIC & APPLIED SCIENCE

MCA- Curriculum 2026 - 2027 (General / Big Data Analytics / Cloud Computing)											
SEMESTER I											
S.No	**COURSE CATEGORY**	**COURSE TYPE**	**COURSE CODE**	**Learning Approach AI/PBL**	**NAME OF THE COURSE**	**L**	**T**	**P**	**C**	**S**	**TCH**
1	PC	TH	BCA52001		Data Communication and Networking	3	0	0	3	3	3
2	PC	TH	BCA52002	AI	Software Engineering and Quality Automation	3	1	0	4	3	4
3	PC	TP	BCA52003	PBL	Object Oriented Programming Approach	2	1	2	4	4	5
4	PC	TP	BCA52004		Advanced Data Structures and Algorithms	3	0	2	4	4	5
5	SE	TP	BCA52005	AI & PBL Integration	Industry Coding Standard with Web Script Automation	1	0	2	2	2	3
6	BS	TH	BMA52001		Statistical Methods and Data Analysis	3	1	0	4	2	4
7	HS	TH	GLS62001		Academic and Research Writing	2	0	0	2	2	2
					Total	**17**	**3**	**6**	**23**	**20**	**26**
L – Lecture; T – Tutorial; P – Practical; C – Credit; S- Self Study; TCH- Total Contact Hours											

SEMESTER II											
S.No	**COURSE CATEGORY**	**COURSE TYPE**	**COURSE CODE**	**Learning Approach AI/PBL**	**NAME OF THE COURSE**	**L**	**T**	**P**	**C**	**S**	**TCH**
1	PC	TP	BCA52006		Advanced Database Technologies	3	0	2	4	3	5
2	PC	TP	BCA52007	AI	Machine Learning and AI	3	0	2	4	4	5
3	PC	TP	BCA52008	AI	Data Analysis and ETL	2	1	2	4	4	5
4	PE	TP	BCA52***	AI & PBL Integration	Professional Elective I	3	0	2	4	3	5
5	PE	TP	BCA52***	AI & PBL Integration	Professional Elective II	3	0	2	4	3	5
6	SE	DP	BCA52800	PBL	Design Project	0	0	2	1	5	2
7	HS	PR	GLS62400		Communication Skills and Professional Development	0	0	2	1	1	2
8	BS	TH	GGE12001		Advanced Quantitative Aptitude	1	0	0	1	4	1
					Total	**15**	**1**	**14**	**23**	**27**	**30**

L – Lecture; T – Tutorial; P – Practical; C – Credit; S- Self Study; TCH- Total Contact Hours ; *- Non Credit Course

SEMESTER III											
S.No	**COURSE CATEGORY**	**COURSE TYPE**	**COURSE CODE**	**Learning Approach AI/PBL**	**NAME OF THE COURSE**	**L**	**T**	**P**	**C**	**S**	**TCH**
1	PC	TH	BCA52009		Open Elective (MOOC / Interdisciplinary)	3	0	0	3	5	3
2	PC	TH	BCA52010		Quantum Computing	3	0	0	3	3	3
3	PC	TP	BCA52011		UI/UX Engineering	3	0	2	4	3	5

4	PE	TP	BCA52***	AI & PBL Integration	Professional Elective III	3	0	2	4	3	5
5	PE	TP	BCA52***	AI & PBL Integration	Professional Elective IV	3	0	2	4	3	5
6	AE	TP	GGE12002	AI	IPR and Research Methodology	2	0	2	3	4	4
7	SE	PR	BCA52801	PBL	Internship	0	0	4	2	5	-
					Total	**17**	**0**	**12**	**23**	**26**	**25**

L – Lecture; T – Tutorial; P – Practical; C – Credit; S- Self Study; TCH- Total Contact Hours ; *- Non Credit Course

SEMESTER IV

S.No	COURSE CATEGORY	COURSE TYPE	COURSE CODE	Learning Approach AI/PBL	NAME OF THE COURSE	L	T	P	C	S	TCH
1	SE	PJ	BCA52802	PBL	Project Work	0	0	24	12	25	24
					Total	**0**	**0**	**24**	**12**	**25**	**24**

LIST OF DEPARTMENT ELECTIVES

Elective	Sem	Specialization	Course Code		Name of the Course	L	T	P	C	S	TCH
DE1	II	**General**	BCA52500		Advanced Java & Enterprise Development	3	0	2	4	3	5
			BCA52501		Smart Device Application Development	3	0	2	4	3	5
DE2	II		BCA52502		Blockchain Technology and Applications	3	0	2	4	3	5
			BCA52503		Industry 5.0 and IOT	3	0	2	4	3	5
DE3	III		BCA52504		Prompt Engineering & AI Agents	3	0	2	4	3	5
			BCA52505		Low-Code-No-Code Automation	3	0	2	4	3	5

DE4	III		BCA52506		Image Processing Technique	3	0	2	4	3	5
			BCA52507		Computer Vision	3	0	2	4	3	5
DE1	II	**Big Data Analytics**	BCA52508		Business Analytics and Data Visualization	3	0	2	4	3	5
			BCA52509		Big Data Ecosystems (Hadoop/Spark)	3	0	2	4	3	5
DE2	II		BCA52510		Data Engineering	3	0	2	4	3	5
			BCA52511		Deep Learning for Analytics	3	0	2	4	3	5
DE3	III		BCA52512		Natural Language Processing and LLM	3	0	2	4	3	5
			BCA52513		Predictive Analytics	3	0	2	4	3	5
DE4	III		BCA52514		Generative AI for Data Professionals	3	0	2	4	3	5
			BCA52515		MLOps for Analytics	3	0	2	4	3	5
DE1	II	**Cloud Computing**	BCA52516		Cloud Computing concepts and Infrastructure	3	0	2	4	3	5
			BCA52517		Cloud Security Engineering	3	0	2	4	3	5
DE2	II		BCA52518		DevOps and Cloud Automation	3	0	2	4	3	5
			BCA52519		Cloud Native Application Development	3	0	2	4	3	5
DE3	III		BCA52520		Multi-Cloud Architecture	3	0	2	4	3	5
			BCA52521		Fog and Edge Computing	3	0	2	4	3	5

DE4	III		BCA52522		Cloud Observability and Site Reliability Engineering	3	0	2	4	3	5
			BCA52523		Digital Twin Technology in Cloud	3	0	2	4	3	5