SCHOOL OF BASIC AND APPLIED SCIENCES

DEPARTMENT OF COMPUTER APPLICATIONS

CURRICULUM 2026

(in line with NEP 2020)

B.C.A.-Bachelor of Computer Applications

Specialization in

General/Database Systems/Multimedia and Animation / Cyber Security

(3 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)

BCA- Curriculum 2026 - 2027(General / Multimedia and Animation / Database Systems/ Cyber Security)

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	BS	TH	BMA41001		Combinatorial Analysis	3	1	0	4	2	4
2	PC	TH	BCA41001		Computer Organization and Architecture	4	0	0	4	2	4
3	PC	TP	BCA41002		Problem Solving and Programming	3	0	2	4	2	5
4	SE	TP	BCA41003	AI	Digital Productivity Tools	3	0	2	4	2	5
5	HS	TH	GLS61004		Language and Life Skills	3	0	0	3	1	3
6	MC	TH	GGE61002		Environmental Studies and Sustainable Development Goals	2	0	0	2	2	2
					Total	**18**	**1**	**4**	**21**	**11**	**23**

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	TH	BCA41004		Operating Systems	4	0	0	4	2	4
2	PC	TP	BCA41005	PBL	Database Management Systems	2	1	2	4	2	5
3	PC	TH	BCS21004	AI	Software Engineering and Agile Practices	3	1	0	4	2	4
4	PC	TP	BCS21005		Data Structures and Modern AI Algorithms	3	0	2	4	2	5
5	HS	TH	GLS61005		Communicative English	3	0	0	3	1	3
6	MC	TH	GPS31001		Indian Constitution	2	0	0	2	2	2
7	NC	PR	GGE61401		Outreach (NSS, Y's Men, Rotaract)	0	0	2	*	4	2
			GPE31401		Yoga						
			GPE31402		Sports						
			GPE31403		Fitness						
					Total	**17**	**2**	**6**	**21**	**15**	**25**

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

SEMESTER III											
SNo	**COURSE CATEGORY**	**COURSE TYPE**	**COURSE CODE**	**Learning Approach AI/PBL**	**NAME OF THE COURSE**	**L**	**T**	**P**	**C**	**S**	**TCH**
1	PC	TH	BCA41006		Computer Networks and Security	3	1	0	4	2	4
2	PC	TP	BCA41007		Object Oriented Programming using Java	3	0	2	4	2	5
3	PC	TP	BCA41008	PBL	Full Stack Web Development	3	0	2	4	2	5
4	PE	TP	****	AI & PBL Integration	Departmental Elective 1	3	0	2	4	2	5
5	HS	PR	GLS61400		Presentation Skills	0	0	4	2	1	4
6	AE	TH	GLS61006		Malayalam	1	0	0	1	2	1
			GLS61007		Tamil						
			GLS61008		Hindi						
			GLS61009		Telugu						
			GLS61010		Advanced Tamil						
			GLS61011		French						
			GLS61012		German						
			GLS61013		Spanish						
			GLS61014		Korean						
			GLS61015		Mandarin						
			GLS61016		Japanese						
					Total	**13**	**1**	**10**	**19**	**11**	**24**

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	PC	TP	BCA41009	AI	Artificial Intelligence and Data Science Tools	3	0	2	4	2	5
2	PC	TH	BCA41010		Cloud Computing Fundamentals	3	1	0	4	2	4
3	PE	TP	****	AI & PBL Integration	Departmental Elective 2	3	0	2	4	2	5
4	PE	TP	****	AI & PBL Integration	Departmental Elective 3	3	0	2	4	2	5
5	SE	PR	BCA41800	PBL	Design Project	0	0	4	2	5	4
6	HS	PR	GLS61401		Personality and Skill Development	0	0	4	2	1	4
7	MC	TH	GGE61001		Indian Knowledge System	2	0	0	2	2	2
					Total	**14**	**1**	**14**	**22**	**16**	**29**

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

SEMESTER V											
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	BCS21009		Quantum Technology	3	0	0	3	2	3
2	PC	TH	BCA41011	AI	Prompt Engineering and Techniques	3	1	0	4	2	4
3	PE	TP	****	AI & PBL Integration	Departmental Elective 4	3	0	2	4	2	5
4	PE	TP	****	AI & PBL Integration	Departmental Elective 5	3	0	2	4	2	5
5	SE	TP	GGE11002		Quantitative Aptitude and Logical Reasoning	1	1	0	2	2	2
6	SE	PR	BCA41801	PBL	Internship	0	0	0	2	5	0
7	MC	TH	GGE61002		Universal Human Value	1	0	0	1	2	1
					Total	**14**	**2**	**4**	**20**	**17**	**20**

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

SEMESTER VI											
S. No	**COURSE CATEGORY**	**COURSE TYPE**	**COURSE CODE**	**Learning Approach AI/PBL**	**NAME OF THE COURSE**	**L**	**T**	**P**	**C**	**S**	**TCH**
1	PE	TP	****	AI & PBL Integration	Departmental Elective 6	3	0	2	4	2	5
2	PE	TP	****	AI & PBL Integration	Departmental Elective 7	3	0	2	4	2	5
3	SE	PJ	BCA41802	PBL	Project	0	0	20	10	10	20
					Total	**6**	**0**	**24**	**18**	**14**	**30**

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

LIST OF DEPARTMENT ELECTIVES							
Elective	**Sem**	**COURSE CODE**	**Course Name**	**General**	**Multimedia and Animation**	**Database Systems**	**Cyber Security**
DE1	3	BCA41500	Digital Marketing	✓			
		BCA41501	Internet of Things	✓			
DE2	4	BCA41502	UI/UX Fundamentals	✓			
		BCA41503	Full Stack Framework	✓			
DE3	4	BCA41504	Software Project Management	✓			
		BCA41505	Mobile Application Development (Elective)	✓			
DE4	5	BCA41506	DevOps Fundamentals	✓			
		BCA41507	Opensource Development	✓			
DE5	5	BCA41508	Software Testing and Quality Assurance	✓			
		BCA41509	Business Analytics and E Commerce Technology	✓			
DE6	6	BCA41510	Generative AI Applications	✓			
		BCA41511	Block Chanin Technology	✓			
DE7	6	BCA41512	Web Services in Cloud Computing	✓			
		BCA41513	Introduction to Deep Learning	✓			
DE1	3	BCA41514	Data Visualization	✓		✓	
		BCA41515	Database Administration	✓		✓	
DE2	4	BCA41516	Big Data Foundations	✓		✓	

		BCA41517	Advanced SQL and Query Optimization	✓		✓	
DE3	4	BCA41518	Data Warehousing and ETL	✓		✓	
		BCA41519	Cloud Databases	✓		✓	
DE4	5	BCA41520	Data Engineering	✓		✓	
		BCA41521	Business Intelligence	✓		✓	
DE5	5	BCA41522	Machine Learning for Data Analysis	✓		✓	
		BCA41523	Big Data Analysis	✓		✓	
DE6	6	BCA41524	AI Driven Data Analytics	✓		✓	
		BCA41525	Enterprise Data Architecture	✓		✓	
DE7	6	BCA41526	Data Lake and Lakehouse Systems	✓		✓	
		BCA41527	MLOps for Data Professionals	✓		✓	
DE1	3	BCA41528	Digital Graphics Design and Multimedia	✓	✓		
		BCA41529	2D Animation Fundamentals	✓	✓		
DE2	4	BCA41530	UI/UX Design in Multimedia	✓	✓		
		BCA41531	Motion Graphics	✓	✓		
DE3	4	BCA41532	3D Animation	✓	✓		
		BCA41533	Game Asset Design	✓	✓		
DE5	5	BCA41536	3D Animation Studio Lab	✓	✓		
		BCA41537	AR/VR Development Lab	✓	✓		
DE6	6	BCA41538	Advanced VFX and Compositing	✓	✓		
		BCA41539	Virtual Production	✓	✓		
DE7	6	BCA41540	Digital Content Entrepreneurship	✓	✓		
		BCA41541	Game Engine Development	✓	✓		

DE1	3	BCA41542	Principles of Computer Security				✓
		BCA41543	Secure Coding Practices				✓
DE2	4	BCA41544	Linux And Shell Scripting for Cyber Security				✓
		BCA41545	Cyber Threat Management				✓
DE3	4	BCA41546	Cryptography				✓
		BCA41547	Security Ethics				✓
DE4	5	BCA41548	Advance Network Security				✓
		BCA41549	IOT Security				✓
DE5	5	BCA41550	Cyber Forensics				✓
		BCA41551	Cyber Security Techniques and Tools				✓
DE6	6	BCA41552	Cyber Security Monitoring and Security Operations				✓
		BCA41553	Security Orchestration Automation and Response				✓
DE7	6	BCA41554	Vulnerability Assessment and Penetration Testing				✓
		BCA41555	Industrial Access Control Models and Practices				✓