Osmania University
Faculty of Informatics

Bachelor of Computer Applications (BCA)

Based on AICTE Model Curriculum

Applicable to Students Admitted from the Academic Year 2025–2026

R25 - Academic Regulations
Scheme of Instruction I - VI
Syllabi for BCA Semesters I and II

Faculty of Informatics
Osmania University
2025-2026

Dr. L.K. Suresh Kumar, CBoS, FoI

Prof K Shyamala, Dean, FoI

1350
11/12/25

Table of Contents

With effect from the academic year 2025-2026

General Course Structure

A. Definition of Credit:

1 Hr. Lecture (L) per week	1 Credit
1 Hr. Tutorial (T) per week	1 Credit
1 Hr. Practical (P) per week	0.5 Credit
2 Hours Practical (P) per week	1 Credit

B. Course code and definition:

Course code	Definitions
L	Lecture
T	Tutorial
P	Practical
Cr	Credits
CC	Core Courses
AEC	Ability Enhancement Courses
MDE	Multi-Disciplinary Elective course
VAC	Value added Courses
SEC	Skill Enhancement courses
DSE	Discipline Specific Elective
OE	Open Elective
SEE	Semester End Examinations
CIE	Continuous Internal Evaluation

Credits Table

Semester	Credits
I	21
II	21
III	24
IV	21
V	22
VI	19
Total	**128**

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BCA Program Outcomes

PO1 – Computing Knowledge:
Apply computing fundamentals and domain knowledge to solve real-world problems.

PO2 – Problem Analysis & Software Development:
Analyse requirements and design innovative software solutions.

PO3 – Modern Tool Usage:
Use modern tools, techniques, and platforms for effective computing practices.

PO4 – Communication:
Communicate clearly in technical and non-technical contexts within IT.

PO5 – Ethics & Responsibility:
Practice professional ethics and social responsibility in computing.

PO6 – Environment & Sustainability:
Recognize its impact on society and environment for sustainable solutions.

PO7 – Individual & Team Work:
Work effectively as an individual and as part of diverse teams.

PO8 – Project Management & Entrepreneurship:
Apply management and entrepreneurial skills in projects and multidisciplinary teams.

PO9 – Lifelong Learning:
Pursue continuous learning to adapt to technological advancements.

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Schemes of Semesters I and II approved for 2025-26

BACHELOR OF COMPUTER APPLICATIONS (BCA)

SEMESTER- I

SNo	Course Code	Course Title	Hours/ Week		No of Credits	Scheme of Examination			
						Max Marks		Duration(hrs)	
		THEORY	L	P	Cr	SEE	CIE	SEE	CIE
1	CC101	Mathematical Foundations of Computer Science	3	-	3	70	30	3	1
2	CC102	Computer Architecture	3	-	3	70	30	3	1
3	SEC101	Programming in C	3	-	3	70	30	3	1
4	SEC102	Web Technologies	3	-	3	70	30	3	1
5	AEC101	Effective Communication	3	-	3	70	30	3	1
PRACTICALS									
6	CC102P	Computer Architecture Lab	-	4	2	50	25	3	2
7	SEC101P	Programming in C Lab	-	4	2	50	25	3	2
8	SEC102P	Web Technologies Lab	-	4	2	50	25	3	2
		Total	**15**	**12**	**21**	**500**	**225**	-	-

SEMESTER- II

SNo	Course Code	Course Title	Hours/ Week		No of Credits	Scheme of Examination			
						Max Marks		Duration(hrs)	
		THEORY	L	P	Cr	SEE	CIE	SEE	CIE
1	CC103	Probability and Statistics	3	-	3	70	30	3	1
2	CC104	Data Structures	3	-	3	70	30	3	1
3	CC105	Operating Systems	3	-	3	70	30	3	1
4	SEC103	Object Oriented Programming using Java	3	-	3	70	30	3	1
5	VAC101	Indian Constitution	3	-	3	70	30	3	1
PRACTICALS									
6	CC104P	Data Structures Lab	-	4	2	50	25	3	2
7	CC105P	Operating Systems Lab	-	4	2	50	25	3	2
8	SEC103P	Object Oriented Programming using Java Lab	-	4	2	50	25	3	2
		Total	**15**	**12**	**21**	**500**	**225**	-	-

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Tentative Schemes III to VI Semesters, to be approved

SEMESTER-III

SNo	Course Code	Course Title	Hours/ Week		No of Credits	Scheme of Examination			
						Max Marks		Duration (hrs)	
THEORY			L	P	Cr	SEE	CIE	SEE	CIE
1	CC201	Database Management Systems	3	-	3	70	30	3	1
2	CC202	Software Engineering	3	-	3	70	30	3	1
3	CC203	Applied Mathematics	3	-	3	70	30	3	1
4	SEC201	Python Programming	3	-	3	70	30	3	1
5	VAC201	Environmental Science	3	-	3	70	30	3	1
6	DSC201*	Professional Elective - I	1	4	3	70	30	3	1
PRACTICALS									
6	CC201P	Database Management Systems Lab	-	4	2	50	25	3	2
7	CC202P	Software Engineering Lab	-	4	2	50	25	3	2
8	SEC201P	Python Programming Lab	-	4	2	50	25	3	2
		Total	**16**	**16**	**24**	**500**	**225**	-	-

SEMESTER-IV

SNo	Course Code	Course Title	Hours/ Week		No of Credits	Scheme of Examination			
						Max Marks		Duration (hrs)	
THEORY			L	P	Cr	SEE	CIE	SEE	CIE
1	CC204	Entrepreneurship and Startup Ecosystem	1 1(T)	-	2	70	30	3	1
2	CC205	Computer Networks	3	-	3	70	30	3	1
3	CC206	Design and Analysis of Algorithm	3	-	3	70	30	3	1
4	CC207	Artificial Intelligence	3	-	3	70	30	3	1
5	SEC202	Design Thinking and Innovation	3	-	3	70	30	3	1
6	DSC202*	Professional Elective - II	1	4	3	70	30	3	1
PRACTICALS									
7	CC205P	Computer Networks Lab	-	4	2	50	25	3	2
8	CC207P	Artificial Intelligence Lab	-	4	2	50	25	3	2
		Total	**15**	**12**	**21**	**500**	**225**	-	-

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SEMESTER-V

S. No.	Course Code	Course Title	Hour /Week		No. of Credits	Max Marks		Duration (hrs)	
		THEORY	**L**	**P**	**Cr**	**SEE**	**CIE**	**SEE**	**CIE**
1	DSE301*	Professional Elective – III	3	0	3	70	30	3	1
2	DSE302*	Professional Elective – IV	3	0	3	70	30	3	1
3	DSE303*	Professional Elective – V	3	0	3	70	30	3	1
4	SEC301	Quantitative Techniques	2	2	3	70	30	3	1
5	SEC302	Internship/Capstone Project		8	4	50	25	3	1
6	SEC303	Major Project (Evaluation in the 6th Semester)	-	-	0	-	-	-	-
		PRACTICALS							
7	DSE301P*	Professional Elective – III Lab	0	4	2	50	25	3	2
8	DSE302P*	Professional Elective – IV Lab	0	4	2	50	25	3	2
9	DSE303P*	Professional Elective – V Lab	0	4	2	50	25	3	2
		TOTAL	**11**	**22**	**22**	**480**	**220**	**-**	**-**

SEMESTER-VI

SNo	Course Code	Course Title	Hr/week		No. of Credits	Duration (hrs)		Max Marks	
		THEORY	**L**	**P**	**Cr**	**SEE**	**CIE**	**SEE**	**CIE**
1	CC301	Generative AI	2	0	2	70	30	3	1
2	DSE304*	Professional Elective - VI	3	0	3	70	30	3	1
3	DSE305*	Professional Elective - VII	3	0	3	70	30	3	1
4	AEC301	Soft Skills	-	-	1	70	30	3	1
5	SEC304	Major Project (Initiated in the 5th Semester)	-	8	4	100	50	3	2
		PRACTICALS							
6	CC301P	Generative AI Lab	0	4	2	50	25	3	2
7	DSE304P*	Professional Elective – VI Lab	0	4	2	50	25	3	2
8	DSE305P*	Professional Elective – VII Lab	0	4	2	50	25	3	2
		TOTAL	**8**	**20**	**19**	**530**	**245**	**-**	**-**

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Proposed Streams with Discipline-Specific Electives (DSE)

1. Data Science

Sl.No	Semester	Course Code	Professional Elective
1	III	DSE*201	Basics of Data Analytics using Spreadsheet
2	IV	DSE*202	Data Visualization
3	V	DSE301	Introduction to Data Science
4	V	DSE302	Time Series Analysis
5	V	DSE303	Machine Learning
6	VI	DSE304	Big Data Analytics
7	VI	DSE305	Exploratory Data Analysis
8	VII	DSE401	Business Intelligence & Analytics
9	VII	DSE402	Data Mining & Warehousing

2. Artificial Intelligence & Machine Learning

Sl.No	Semester	Course Code	Professional Elective
1	III	DSE*201	Feature Engineering
2	IV	DSE*202	Introduction to ML
3	V	DSE301	Neural Network
4	V	DSE302	Digital Image Processing
5	V	DSE303	Natural Language Processing
6	VI	DSE304	Deep Learning for Computer Vision
7	VI	DSE305	Predictive Analysis
8	VII	DSE401	Explainable AI
9	VII	DSE402	Evolutionary Algorithm

3. Full Stack Development

Sl.No	Semester	Course Code	Professional Elective
1	III	DSE*201	Web Programming -I
2	IV	DSE*202	Web Programming -II

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