



TECNIA INSTITUTE OF ADVANCED STUDIES

NAAC GRADE "A" INSTITUTE (CYCLE-1)

Approved by AICTE, Ministry of Education Govt. of India,
Affiliated to G.G.S.I.P. University & Recognized Under Sec. 2(f) of UGC Act 1956.
INSTITUTIONAL AREA, MADHUBAN CHOWK, ROHINI, DELHI-110085

Department of Information, Communication & Technology

Bachelor of Computer Applications (BCA) 4Yrs.

Scheme and Syllabus (w.e.f. Academic Session 2024-25)

As per UGC Curriculum & Credit Framework for Undergraduate Programme (CCFUP) (Dec 2022): GGSIP University, Delhi

COURSE OUTCOMES (COs)

FIRST SEMESTER (Theory)

C.CODE	COURSE	L	T/P	CREDITS	C.CODE	COURSE	L	T/P	CREDITS
BCA101T	Programming for Problem Solving using C	4	-	4	BCA107T	Mathematical Foundation for Computer Science	4	-	4
BCA103T	Fundamental of Information Technology	4	-	4	BCA141T	Writing Skills	3	-	3
BCA105T#	Web Technologies#	4	-	4	BCA191T*	Understanding India*(NUES)	2	-	2
					BCA181T+	Bridge Course in Mathematics+(NUES)	2	-	-

COURSE OUTCOMES (COs)

C.CODE: BCA 101T | COURSE: Programming for Problem Solving using C

CO#	THE COURSE OUTCOMES	BTL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	Develop programming skills by learning the fundamentals of structured programming using C Language.	BTL 2	4	4	4	2	-	2	1	-	-	2
CO2	Design and develop programs using arrays, storage classes, functions and to understand memory management through pointers	BTL 3	4	4	4	2	-	2	1	-	-	2
CO3	Critically analyze real world problems using structures, unions and develop applications for handling text and binary files.	BTL 4	4	4	4	2	-	2	1	-	-	2
CO4	Explore the use of command line arguments, string manipulation & standard libraries.	BTL 3	4	4	4	2	-	2	1	-	-	2

C.CODE: BCA 103T | COURSE: Fundamental of Information Technology

CO#	THE COURSE OUTCOMES	BTL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	Describe computer with its characteristics, its usage, limitations and benefits, Computer Memories and its type, Software and its type	BTL 2	4	4	4	4	-	2	1	-	-	1
CO2	Acquire knowledge about Number Systems, various computer languages and operating system DOS	BTL 2	4	4	4	2	-	2	-	-	-	1
CO3	Attain skills in Application Software used for word processing, spreadsheet and presentation	BTL 3	4	4	4	4	-	2	2	-	-	3
CO4	Understand network fundamentals & various communication network, Advance trends in IT	BTL 2	4	4	4	4	-	2	2	-	-	2

C.CODE: BCA 105T | COURSE: Web Technologies

CO#	THE COURSE OUTCOMES	BTL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	Develop static web pages through HTML, JavaScript, CSS and Bootstrap.	BTL 3	4	1	4	4	2	4	2	-	-	4
CO2	Implement different constructs and programming techniques provided by JavaScript.	BTL 3	4	1	4	4	2	4	2	-	-	4
CO3	Adapt HTML, Javascript, CSS & Bootstrap syntax and semantics to build web pages.	BTL 2	4	1	4	4	2	4	3	-	-	4
CO4	Develop Client-Side Scripts using JavaScript to display the contents dynamically	BTL 3	4	1	4	4	2	4	3	-	-	4

C.CODE: BCA 107T | COURSE: Mathematical Foundation for Computer Science

CO#	THE COURSE OUTCOMES	BTL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	Understand the various approaches dealing the data using theory of Probability	BTL 2	-	2	1	2	-	-	1	-	-	-
CO2	Understand various numerical techniques and apply them to solve real life problems	BTL 3	-	2	1	2	-	-	1	-	-	-
CO3	Understand various techniques to solve linear simultaneous equations	BTL 2	-	2	1	2	-	-	1	-	-	-
CO4	Analyse and evaluate the accuracy of common Numerical Methods	BTL 4	-	2	1	2	-	3	1	-	-	-

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COURSE OUTCOMES (COs)

FIRST SEMESTER (Theory)

COURSE OUTCOMES (COs)

C.CODE: BCA 141T | COURSE: Writing Skills

CO#	THE COURSE OUTCOMES	BTL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	The student will become familiar with the basics of communication and its importance in the organizational world.	BTL 2	-	2	-	2	1	-	1	2	1	2
CO2	To improve the business writing skills also will become well aware how to write effective resume to enter the global world.	BTL 3	-	2	-	2	1	-	1	2	1	2
CO3	To improve the listening skills by knowing well how to negotiate and give effective presentations.	BTL 3	-	2	-	2	1	-	1	2	1	2
CO4	To make use of effective business language and give a professional look to oneself	BTL 3	-	2	-	2	1	3	1	2	1	2

C.CODE: BCA 191T | COURSE: Understanding India

CO#	THE COURSE OUTCOMES	BTL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	Familiar with the History and culture of Ancient India	BTL 2	-	-	-	-	-	-	-	3	3	-
CO2	Understanding the ancient Indian literature	BTL 2	-	-	-	-	-	-	-	3	3	-
CO3	Having awareness of the ancient knowledge system of India	BTL 2	-	-	-	-	-	-	-	3	3	-
CO4	Aware of Basic features of our constitution	BTL 2	-	-	1	-	-	3	-	3	3	-

C.CODE: BCA 181T | COURSE: Bridge Course in Mathematics

CO#	THE COURSE OUTCOMES	BTL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	Understand the various approaches dealing the data using theory of matrices	BTL 2	-	2	-	2	1	-	1	2	1	2
CO2	Understand and apply the concepts of determinants	BTL 3	-	2	-	2	1	-	1	2	1	2
CO3	Understand the concept of calculus such as limit, continuity and differentiability	BTL 2	-	2	-	2	1	-	1	2	1	2
CO4	Appraise and determine the correct logic and solutions for any given real world problem using application of integration& integral calculus.	BTL 4	-	2	-	2	1	3	1	2	1	2

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COURSE OUTCOMES (COs)

SECOND SEMESTER (Theory)

C.CODE	COURSE	L	T/P	CREDITS	C.CODE	COURSE	L	T/P	CREDITS
BCA 102T	Database Management System (DBMS)	4	0	4	BCA108T	Software Engineering	4	0	4
BCA104T	Object Oriented Programming using Java Lab	4	0	4	BCA142T	Soft Skills	3	-	3
BCA106T	Data Structures and algorithms	4	0	4	BCA192T	Environment Studies	2	-	2

COURSE OUTCOMES (COs)

C.CODE: BCA 102T | COURSE: Database Management System (DBMS)

CO#	THE COURSE OUTCOMES	BTL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	Understand the DBMS concepts with detailed architecture, characteristics. Describe different database languages and environment and learn various data models, along with the related terminologies	BTL 2	4	1	4	4	2	4	2	1	1	4
CO2	Explore Structure Query Language, a brief on NOSQL, Query By Example. Also understand the overview of SQL, and try to implement DDL, DML and DCL along with operators, use of joins, nested query, use of views and Indexes Discuss Integrity Constraints	BTL 3	4	1	4	2	2	4	2	1	1	4
CO3	Describe Relational Data Model, explain Codd's Rules, Relational Algebra, Set theory operations and the concept of functional dependencies and normalization	BTL 2	4	1	4	4	2	4	3	1	1	4
CO4	Acquire Knowledge about Transaction Processing, concurrency problems, and its controlling techniques, Database backup and recovery and security.	BTL 2	4	1	4	4	2	4	3	1	1	4

C.CODE: BCA 104T | COURSE: Object Oriented Programming using Java

CO#	THE COURSE OUTCOMES	BTL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	Illustrate the Object-Oriented paradigm and Java language constructs	BTL 2	4	4	4	2	-	2	1	-	-	2
CO2	To inculcate concepts of inheritance to create new classes from existing ones and design the Classes needed given a problem specification. To familiarize the concepts of packages and interfaces.	BTL 3	4	4	4	2	-	2	1	-	-	2
CO3	To manage input output using console and files	BTL 3	4	4	4	2	-	2	1	-	-	2
CO4	To facilitate students in handling exceptions and defining their own exceptions. To apply the Java Thread model to develop multithreading applications.	BTL 3	4	4	4	2	-	2	1	-	-	2

C.CODE: BCA 106T | COURSE: Data Structures and Algorithms

CO#	THE COURSE OUTCOMES	BTL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	Familiarize the basics of data structures and algorithms.	BTL 2	4	1	4	4	2	4	2	1	1	4
CO2	Understand and apply linear and nonlinear data structures and their operations.	BTL 3	4	1	4	2	2	4	2	1	1	4
CO3	Compare and implement searching, sorting and hashing techniques.	BTL 4	4	1	4	4	2	4	3	1	1	4
CO4	Appraise and determine the correct data structure for any given real world problem.	BTL 5	4	1	4	4	2	4	3	1	1	4

C.CODE: BCA 108T | COURSE: Software Engineering

CO#	THE COURSE OUTCOMES	BTL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	Instantiating into the process of designing, coding and testing a software module. Implementing Software Development Life Cycle(SDLC) to develop a software module	BTL 3	4	2	4	4	1	4	1	1	1	4
CO2	Organizing a software product along with its complete documentation.	BTL 3	4	2	4	2	1	4	1	1	1	4
CO3	To analyze the use of techniques, skills and modern engineering tools necessary for software development.	BTL 4	4	2	4	4	1	4	1	1	1	4
CO4	Organizing a complete software module according to SDLC	BTL 3	4	2	4	4	1	4	3	2	1	4

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SECOND SEMESTER (Theory)

COURSE OUTCOMES (COs)

C.CODE: BCA 142T | COURSE: Soft Skills

CO#	THE COURSE OUTCOMES	BTL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	The student will become familiar with the basics of soft Skills and its importance in their career and life	BTL 2	-	2	-	2	1	-	1	2	1	2
CO2	To improve the business communication skills	BTL 3	-	2	-	2	1	-	1	2	1	2
CO3	To improve the listening skills by knowing well how to negotiate and give effective presentations.	BTL 3	-	2	-	2	1	-	1	2	1	2
CO4	To make use of effective business language and give a professional look to oneself.	BTL 3	-	2	-	2	1	3	1	2	1	2

C.CODE: BCA 192T | COURSE: Environment Studies

CO#	THE COURSE OUTCOMES	BTL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	Gain in-depth knowledge on natural processes and resources that sustain life and govern economy.	BTL 2	-	-	1	2	1	2	-	2	4	2
CO2	Understand the consequences of human actions on the web of life, global economy, and quality of human life.	BTL 2	-	-	1	2	1	2	-	1	4	2
CO3	Develop critical thinking for shaping strategies (scientific, social, economic, administrative, and legal) for environmental protection, conservation of biodiversity, environmental equity, and sustainable development.	BTL 4	-	-	3	2	1	2	-	1	4	1
CO4	Acquire values and attitudes towards understanding complex environmental economicsocial challenges, and active participation in solving current environmental problems and preventing the future ones.	BTL 5	-	-	1	2	1	3	-	1	34	2

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