University of Madras

Chepauk, Chennai 600 005

[Est. 1857, State University, NAAC 'A' Grade, C^GPA **3.32, NIRF 2019 Rank: 20]**
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Undergraduate Programme
in
Computer Applications

Bachelor of Computer Applications (BCA)
(With effect from the Academic Year 2023-24)

Learning Outcome Based Curriculum Framework

Note: The Board of Studies is designed Learning Outcome s Based Curriculum Framework of Under Graduate Computer Application Programme prescribed by UGC

I Preamble

Bachelor of Computer Applications (BCA) is a 3 – Year under Graduate Programme Spread over six semesters. The Course is designed to bridge the gap between IT industries and Academic institutes by incorporating the latest development, into the Curriculum and to give students a complete understanding within a structured framework. The Course helps the students to build-up a successful Career in Computer Science and for pursuing higher studies in Computer Science.

II Eligibility

A pass in the Higher secondary Examination (Academic Stream) conducted by the Government of Tamil Nadu with Mathematics or Business Mathematics orComputer Science or Computer Application as one of the subjects.

III Programme Objectives

PO1	Scientific aptitude will be developed in Students
PO2	Students will acquire basic Practical skills & Technical knowledge along with domain knowledge of different subjects in the Computer Science & humanities stream.
PO3	Students will become employable; Students will be eligible for career opportunities in education field, Industry, or will be able to opt for entrepreneurship.
PO4	Students will possess basic subject knowledge required for higher studies, professional and applied courses.
PO5	Students will be aware of and able to develop solution-oriented approach towards various Social and Environmental issues.
PO6	Ability to acquire in-depth knowledge of several branches of Computer Science and aligned areas. This Programme helps learners in building a solid foundation for higher studies in Computer Science and applications.
PO7	The skills and knowledge gained leads to proficiency in analytical reasoning, which can be utilized in modelling and solving real life problems.
PO8	Utilize computer programming skills to solve theoretical and applied problems by critical understanding, analysis and synthesis.
PO9	Ability to share ideas and insights while seeking and benefitting from knowledge and insight of others.
PO10	Mould the students into responsible citizens in a rapidly changing interdependent society.

IV Programme Specific Objectives

PSO1	Think in a critical and logical based manner
PSO2	Familiarize the students with suitable software tools of computer science and industrial applications to handle issues and solve problems in mathematics or statistics and realtime application related sciences.
PSO3	Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.
PSO4	Understand, formulate, develop programming model with logical approaches to Address issues arising in social science, business and other contexts.
PSO5	Acquire good knowledge and understanding to solve specific theoretical and applied problems in advanced areas of Computer science and Industrial statistics.
PSO6	Provide students/learners sufficient knowledge and skills enabling them to undertake further studies in Computer Science or Applications or Information Technology and its allied areas on multiple disciplines linked with Computer Science.
PSO7	Equip with Computer science technical ability, problem solving skills, creative talent and power of communication necessary for various forms of employment.
PSO8	Develop a range of generic skills helpful in employment, internships& societal activities.
PSO9	Get adequate exposure to global and local concerns that provides platform for further exploration into multi-dimensional aspects of computing sciences.
PSO10	The state of art technologies in conducting a Explain in a scientific and systematic way and arriving at a precise solution is ensured

COURSE STRUCTURE

YEAR – I   SEMESTER – I

Part	Subject Code	List of Courses	Credit	Hours
Part-I	----	Language Paper-I	3	6
Part-II	100L1Z	English Paper-I	3	6
Part-III	120C1A	Core Course - I: Python Programming	5	4
	120C11	Core Course - II: Python Programming Practical	5	5
	120E1A 120E1B 120E1C	Elective Course - II Generic / Discipline Specific (Any one): Mathematics I Statistics I Financial Accounting I	3	5
Part-IV	120S1A	Skill Enhancement Course - I: Office Automation *	2	2
	100L1L	Basic Tamil-I (Other Language Students) *		
	100L1M	Advanced Tamil-I (Other Language Students) *		
	120B1A	Foundation Course FC: Fundamentals of Computers	2	2
			23	30

* PART-IV: SEC-1 / Basic Tamil / Advanced Tamil (Any one)

1. Students who have studied Tamil upto XII STD and also have taken Tamil in Part I shall take SEC-I.

2. Students who have **not** studied Tamil upto XII STD and have taken any Language other than Tamil in Part-I shall take **Basic Tamil** comprising of Two Courses (level will be at 6th Std.).

3. Students who have studied Tamil upto XII STD and have taken any Language other than Tamil in Part-I shall take **Advanced Tamil** comprising of Two Courses.

YEAR – I   SEMESTER – II

Part	Sub. Code	List of Courses	Credit	Hours
Part-I	----	Language Paper-II	3	6
Part-II	100L2Z	English Paper-II	3	6
Part-III	120C2A	Core Course - III: Object Oriented Programming using C++	5	4
	120C2B	Core Course - IV: Object Oriented Programming using C++ Practical	5	5
	120E2A 120E2B 120E2C	Elective Course - II Generic / Discipline Specific (Any one): Mathematics II Statistics II Financial Accounting II	3	5
Part-IV	120S2A	Skill Enhancement Course - II: Office Automation Practical *	2	2
	100L2L	Basic Tamil-II (Other Language Students) *		
	100L2M	Advanced Tamil-II (Other Language Students) *		
	120S2B	Skill Enhancement Course - III: Quantitative aptitude	2	2
			23	30

YEAR – II   SEMESTER – III

Part	Sub. Code	List of Courses	Credit	Hours
Part-I	----	Language Paper-III	3	6
Part-II	200L3Z	English Paper-III	3	6
Part-III	220C3A	Core Course - V: Data Structures	5	4
	220C31	Core Course - VI: Data Structures Practical	5	5
	220E3A 220E3B 220E3C	Elective Course - III Generic / Discipline Specific (Any one): Mathematics I Statistics I Cost and Management Accounting-I	3	5
Part-IV	220S31	Skill Enhancement Course - IV: (Entrepreneurial Based): Web Page Design Practical	1	1
	220S32	Skill Enhancement Course - V: Desktop publishing Practical	2	2
	----	Environmental Science	-	1
			22	30

YEAR – II   SEMESTER – IV

Part	Sub. Code	List of Courses	Credit	Hours
Part-I	----	Language Paper-IV	3	6
Part-II	200L4Z	English Paper-IV	3	6
Part-III	220C4A	Core Course - VII: Java Programming	5	4
	220C41	Core Course -VIII: Java Programming Practical	5	4
	220E4A 220E4B 220E4C	Elective Course - IV Generic/Discipline Specific (Any one): Mathematics II Statistics II Cost and Management Accounting-II	3	5
Part-IV	220S4A	Skill Enhancement Course -VII: Emotional Intelligence	2	2
	220S4B	Skill Enhancement Course -VII: Technical Writing	2	2
	220V4A	Environmental Science	2	1
			25	30

YEAR – III   SEMESTER – V

Part	Sub. Code	List of Courses	Credit	Hours
Part- III	320C5A	Core Course - IX: Operating System	4	5
	320C5B	Core Course - X: Relational Database Management System	4	5
	320C5C	Core Course - XI: Web Technology	4	5
	320C51	Core Course - XII: Web Technology Practical	4	5
	320E5A 320E5B 320E5C	Elective Course -V: Operations Research / Software Engineering / Agile Project Management	3	4
	320E5D 320E5E 320E5F	Elective Course -VI: Cloud computing / Big Data Analytics / Introduction To Data Science	3	4
Part-IV	320V5A	Value Education	2	2
	320V5B	Internship / Industrial Training (During summer vacation at the end of IV semester)	2	-
			26	30

YEAR – III   SEMESTER – VI

Part	Sub. Code	List of Courses	Credit	Hours
Part- III	320C6A	Core Paper - XIII: R-Programming	4	6
	320C61	Core Paper - XIV: R-Programming Practical	4	5
	320C6B	Core Paper - XV: Computer Networks	4	5
	320E6A 320E6B 320E6C	Elective Course -VII: Mobile Ad-hoc Network / Data Mining and Warehousing / Grid Computing	3	5
	320E6D 320E6E 320E6F	Elective -VIII: Internet of Things and its Applications/ Robotics and Its Applications / Network Security	3	5
Part-IV	320V6A	Professional Competency Skill Course: Mini Project	2	4
Part-V	320V6B	Extension Activity	1	-
			21	30

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