



University of Madras

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[Est. 1857, State University, NAAC 'A' Grade, CGPA 3.32, NIRF 2019 Rank: 20]

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Undergraduate Programme in Software Application

Syllabus for B.Sc Software Application (With effect from the Academic Year 2020-21)

February 2020

Learning Outcome Based Curriculum Framework

Note: The Board of Studies is designed Learning Outcomes Based Curriculum Framework of Under Graduate Software Application Programme prescribed by UGC

I Preamble

Bachelor of Computer Science - Software Applications is a 3 – Year Under Graduate Programme Spread over six semesters. The course is designed to acquire broad knowledge in core areas of Computer Science and to achieve higher degree of technical skills in problem Solving and application development. The Course also trains the students in professional Skills related to Software Industry and for pursuing higher studies in Computer Science.

II Course Objectives

- Provide strong foundations in fundamentals of Computer Science and applications, various Programming languages and tools required for effective computation based problem solving.
- Utilizing strong technical aptitude and domain knowledge to develop smart software solutions for the upliftment of society.
- Attain sufficient knowledge related to computer domains, possesses technical, soft and hard skills and apply them effectively in team work
- Empower the students with competencies in creative thinking and problem solving, inter-personal communication and managerial skills.

III Graduate Attributes

- Computational Knowledge
- Problem analysis & Solving
- Design & Development of Solutions
- Modern tool usage
- Communication skills
- Innovation & Entrepreneurship
- Societal & environmental concern

IV Course Outcomes

After Completion of the course, the students are expected to

- Understand the basic principles and concepts of Computer Science and integrate the knowledge gained in Computer Science domain with practical needs of the society and be an ethically and socially responsible Software Professional
- Explore emerging technologies in diverse areas of Computer Science, Software application and inculcate skills for successful career, entrepreneurship and higher studies
- Ability to apply the concepts of Computer and practices via emerging technologies and Software development tools.

Course Structure:

I SEMESTER						
Course Content	COURSE NAME	Ins.Hrs	CREDITS	MAX. MARKS		
				Ext.	Int.	Total
PART I	Tamil/ Other languages – I	6	3	75	25	100
PART II	BP2-ENG 01-Communicative English I	3	3	50	50	100
PART III	BCE-CSC01 - Problem Solving using Python@	6	4	75	25	100
	BCE-CSC02 - Core Practical-I-Problem Solving using Python Lab@	5	3	60	40	100
	BMA-CSA01-Allied I: Mathematics I@	6	5	75	25	100
PART IV	Basic Tamil/Advanced Tamil/NME-I*	-	2	75	25	100
	BP4-EPSC 01-English for Physical Sciences I	4	4	50	50	100
Total Credits			24			
* NME: Choose any one from the other department						
II SEMESTER						
PART I	Tamil/ Other languages – II	6	3	75	25	100
PART II	BP2-ENG 02-Communicative English II	3	3	50	50	100
PART III	BSA-CSC03 - Object Oriented Programming Concepts using C ++@	6	4	75	25	100
	BSA-CSC04 - Core Practical-II-C ++ Programming Lab@	5	3	60	40	100
	BMA-CSA02-Allied II: Mathematics II@	6	5	75	25	100
PART IV	Basic Tamil/Advanced Tamil/NME-II*	-	2	75	25	100
	BP4-EPSC 02-English for Physical Sciences II	4	4	50	50	100
Total Credits			23			
* NME: Choose any one from the other department						
III SEMESTER						
PART I	Tamil/ Other languages – III	6	3	75	25	100
PART II	BP2-ENG03-Language Through Literature I	6	3	50	50	100
PART III	BCE-CSC05 - Java and Data Structures@	6	4	75	25	100
	BCE-CSC06 - Core Practical-III-Data Structures using Java Lab@	6	3	60	40	100
	BPS-CSA01 - Allied III-Physics-I(Theory)@	6	3	75	25	100
	BPS-CSAP1-Allied Physics – I (Practical)	3	2	Examination will be held in IV Sem.		
(OR)						
	BST-CSA01-Allied III- Statistics I@	9	5	75	25	100
PART IV	Soft Skill	-	3	50	50	100
	Environmental Studies	-	Examination will be held in IV Sem.			
Total Credits			21			

IV SEMESTER						
PART I	Tamil/ Other languages – IV	6	3	75	25	100
PART II	BP2-ENG04- Language Through Literature II	6	3	50	50	100
PART III	BCE-CSC07 - Web Technology@	6	4	75	25	100
	BCE-CSC08 - Core Practical-IV-Web Technology Lab@	6	3	60	40	100
	BPS-CSA02 - Allied IV-Physics-II (Theory)@	6	3	75	25	100
	BPS-CSAP1 - Allied Physics–I & II (Practicals)	3	2	60	40	100
	(OR)					
	BST-CSA02-Allied IV- Statistics II@	9	5	75	25	100
PART IV	Soft Skill	-	3	50	50	100
	Environmental Studies	-	2	75	25	100
	Total Credits		23			
V SEMESTER						
Course Content	COURSE NAME	CREDITS	MAX. MARKS			
			Ext.	Int.	Total	
PART III	BCE-CSC14 - Software Engineering@	5	4	75	25	100
	BCE-CSC10 - Operating System@	5	5	75	25	100
	BCE-CSC11 - Relational Database Management System@	5	4	75	25	100
	BCE-CSC12 - Core Practical-V - Operating System Lab@	5	3	60	40	100
	BCE-CSC13 - Core Practical-VI - PL/SQL Lab@	5	3	60	40	100
	Elective I- Choose any one from the list	5	5	75	25	100
PART IV	Value Education		2	75	25	100
	Total Credits		26			
VI SEMESTER						
PART III	BCE-CSC09 - Computer Network@	5	4	75	25	100
	BSA-CSC15 - Open Source Technologies@	5	5	75	25	100
	BSA-DSC16 - Core Practical-VII - Open Source Technologies Lab	5	4	60	40	100
	BSA-DSC17 - Software Quality Assurance	5	3	75	25	100
	Elective II- Choose any one from the list	5	5	75	25	100
	BCE-CSC18 - Core Practical-VIII - Mini Project@	5	5	60	40	100
PART V	Extension Activities		1			
	Total Credits		27			
	Total credits (Core, Elective, SBS)		143			

***NME: Choose Any one From the Other Department**

	Elective I
BCE-CSC15	Introduction to Data Science@
BSA-CSE1B	Multimedia and its Applications@
BSA-DSE1C	Object Oriented Analysis and Design
	Elective II
BSA-CSE2A	Data Analytics using R@
BCE-CSE2B	IOT and its Applications@
BSA-DSE2C	Software Testing

@ - Common subject of other course/s.