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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 Computer Science

**Syllabus for
B.Sc Computer Science
(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 Computer Application Programme prescribed by UGC

Syllabus for B.Sc Computer Science

(With effect from the Academic Year 2020-21)

I Preamble

Bachelor of Computer Science is a 3 – Year Under Graduate Programme spread over six semesters. The course is designed to achieve high degree of technical skills in Problem solving and application development. The course develops requisite professional skills and problem solving abilities for pursuing a successful career in software industry and forms the required basics for pursuing higher studies in Computer Science.

II Course Objectives

- Acquisition of Knowledge and understanding of system, various programming languages and tools required for effective computation based problem solving.
- Utilize emerging technological tools learn, adapt and successfully rite effective procedural coding meeting the needs of technical and societal challenges
- 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 Computer Science Professional
- Explore emerging technologies in diverse areas of Computer Science and inculcate skills for successful career, entrepreneurship and higher studies
- 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 | 4 | 3 | 75 | 25 | 100 |
| PART II | BP2-ENG01- Communicative English | 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 | 2 | 75 | 25 | 100 |
| | BP4-EPSC- English for Physical Science | 4 | 4 | 50 | 50 | 100 |
| Total Credits | | | 24 | | | |
| II SEMESTER | | | | | | |
| PART I | Tamil/ Other languages – II | 4 | 3 | 75 | 25 | 100 |
| PART II | English – II | 4 | 3 | 75 | 25 | 100 |
| PART III | BCE-CSC03 - Computer Organization@ | 6 | 4 | 75 | 25 | 100 |
| | BCE-DSC04 - Core Practical-II - Computer Organization Lab | 6 | 3 | 60 | 40 | 100 |
| | BMA-CSA02-Allied II: Mathematics II@ | 6 | 5 | 75 | 25 | 100 |
| PART IV | Basic Tamil/Advanced Tamil/NME-II* | 2 | 2 | 75 | 25 | 100 |
| | Soft Skill | 2 | 3 | 50 | 50 | 100 |
| Total Credits | | | 23 | | | |
| III SEMESTER | | | | | | |
| PART I | Tamil/ Other languages – III | 4 | 3 | 75 | 25 | 100 |
| PART II | English - III | 4 | 3 | 75 | 25 | 100 |
| PART III | BCE-CSC05 - Java and Data Structures@ | 6 | 4 | 75 | 25 | 100 |
| | BCE-CSC06 - Core Practical-III - Data Structures using Java Lab@ | 3 | 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 | 2 | 3 | 50 | 50 | 100 |
| | Environmental Studies | 2 | Examination will be held in Semester IV | | | |
| Total Credits | | | 21 | | | |

| IV SEMESTER | | | | | | |
|----------------|---|----------|------------|------------|------|-------|
| PART I | Tamil/ Other languages – IV | 4 | 3 | 75 | 25 | 100 |
| PART II | English - IV | 4 | 3 | 75 | 25 | 100 |
| PART III | BCE-CSC07 - Web Technology@ | 6 | 4 | 75 | 25 | 100 |
| | BCE-CSC08 - Core Practical-IV - Web Technology Lab@ | 3 | 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 | 2 | 3 | 50 | 50 | 100 |
| | Environmental Studies | 2 | 2 | 75 | 25 | 100 |
| | Total Credits | | 23 | | | |
| V SEMESTER | | | | | | |
| COURSE CONTENT | COURSE NAME | Ins. Hrs | CREDITS | MAX. MARKS | | |
| | | | | Ext. | Int. | Total |
| PART III | BCE-CSC09 - Computer Network@ | 6 | 4 | 75 | 25 | 100 |
| | BCE-CSC10 - Operating System@ | 6 | 5 | 75 | 25 | 100 |
| | BCE-CSC11 - Relational Database Management System@ | 6 | 4 | 75 | 25 | 100 |
| | BCE-CSC12 - Core Practical-V - Operating System Lab@ | 3 | 3 | 60 | 40 | 100 |
| | BCE-CSC13 - Core Practical-VI - PL/SQL Lab@ | 3 | 3 | 60 | 40 | 100 |
| | Elective I-Choose any one from the list | 5 | 5 | 75 | 25 | 100 |
| PART IV | Value Education | 2 | 2 | 75 | 25 | 100 |
| | Total Credits | | 26 | | | |
| VI SEMESTER | | | | | | |
| PART III | BCE-CSC14 - Software Engineering@ | 6 | 4 | 75 | 25 | 100 |
| | BCE-CSC15 - Introduction to Data Science@ | 6 | 5 | 75 | 25 | 100 |
| | BCE-DSC16 - Introduction to Cloud Computing | 6 | 4 | 75 | 25 | 100 |
| | BCE-DSC17 - Core Practical-VII - CASE Tools and Testing Tools Lab | 3 | 3 | 60 | 40 | 100 |
| | Elective II- Choose any one from the list | 5 | 5 | 75 | 25 | 100 |
| | BCE-CSC18 - Core Practical-VIII - Mini Project@ | | 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-DSE1A | Artificial Intelligence and Expert System |
| BCE-DSE1B | Graphics and Visualization |
| BCE-DSE1C | Network Security |
| | Elective II |
| BCE-DSE2A | Mobile Computing |
| BCE-CSE2B | IOT and its Applications@ |
| BCE-DSE2C | Block Chain Technology |

@ - Common subject of other course/s.