Department of Computer Science

Nesamony Memorial Christian College, Marthandam

B. Sc. Computer Science

Course Outcome

Semester – I B. Sc. Computer Science					
Part	**Course Name**	**Course Code**	**Credit**	**Hours**	**Course Outcome**
Part - III	Core Course – I: **Python Programming**	FCCS11	5	5	On completion of this course, students will **CO1** Learn the basics of python, Do simple programs on python, and Learn how to use an array. **CO2** Develop program using selection statement, Work with Looping and jump statements, Do programs on Loops and jump statements. **CO3** Concept of function, function arguments, Implementing the concept strings in various application, Significance of Modules, Work with functions, Strings and modules. **CO4** Work with List, tuples and dictionary, Write program using list, Tuples and dictionary. **CO5** Usage of File handlings in python, Concept of reading and writing files, Do programs using files.
	Core Course -II: **Practical- Python Programming**	FCCSP1	3	5	On completion of this course, students will **CO1** Demonstrate the understanding of syntax and semantics of PYTHON language **CO2** Identify the problem and solve using PYTHON programming techniques. **CO3** Identify suitable programming constructs for problem solving. **CO4** Analyze various concepts of PYTHON language to solve the problem in an efficient way. **CO5** Develop a PYTHON program for a given problem and test for its correctness.
	Elective -I: **Digital Logic Fundamental**	FECS11	3	4	On completion of this course, students will **CO1** Understand the concept of various number systems **CO2** Understand basic concepts of digital systems **CO3** Describe the storage structures **CO4** Solve problems using SOP and PoS **CO5** Apply concepts for simplifications

Part - IV	SEC -I: **Practical-Office Automation**	FSCS11	2	2	On completion of this course, students will **CO1** Understand the concepts of MS word **CO2** Learn the features of Word **CO3** Do calculations in excel **CO4** Design invitation set using Word **CO5** Understand and design presentation
	Foundation Course: **Problem Solving Techniques**	FFCS11	2	2	On completion of this course, students will **CO1** Study the basic knowledge of Computers. Analyze the programming languages. **CO2** Study the data types and arithmetic operations. Know about the algorithms. Develop program using flowchart and pseudocode. **CO3** Determine the various operators. Explain about the structures. Illustrate the concept of Loops **CO4** Study about Numeric data and character-based data. Analyze about Arrays. **CO5** Explain about DFD Illustrate program modules. Creating and reading Files
Semester – II B. Sc. Computer Science					
Part - III	Core Course – III: **Data Structure and Algorithms**	FCCS21	5	5	On completion of this course, students will **CO1** Understand the concept of Dynamic memory management, data types, algorithms, Big O notation **CO2** Understand basic data structures such as arrays, linked lists, stacks and queues **CO3** Describe the hash function and concepts of collision and Its resolution methods **CO4** Solve problem involving graphs, trees and heaps **CO5** Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data
	Core Course -IV: **Practical - Data Structure and Algorithms**	FCCSP2	3	5	**CO1** Know how to solve various problems on discrete mathematics **CO2** Use approximation to solve problems **CO3** Differentiation and integration concept are applied CO4 Apply, direct methods for solving linear systems **CO5** Discrete solution of ordinary problems
	Elective Course -(EC2) : **Discrete Mathematics**	FEMA21	3	4	**CO1** Know how to solve various problems on discrete mathematics **CO2** Use approximation to solve problems **CO3** Differentiation and integration concept are applied **CO4** Apply, direct methods for solving linear systems **CO5** Discrete solution of ordinary problems

Part-IV	SEC-2 : **Practical –HTML**	FSCSP2	2	2	understand the concepts of links **CO2** Learn tags, lists **CO3** Learn frames and its applications **CO4** Apply forms and to create pages **CO5** Apply sound effect
	SEC-3: **Computer Architecture**	FSCS21	2	2	understand Basic computer organization **CO1** Learn about CPU **CO2** Learn Computer arithmetic **CO3** Understand interface **CO4** Learn various types of memory
	Naan Muthalvan Course- **English/Soft skills for Employability**		2	2	
Semester – III B.Sc . Computer Science					
Part-III	Core Course- V: **Programming in C++**	EMCS31	4	4	Upon completion of the course the students would be able to: **CO1** Remember the program structure of C with its syntax and semantics **CO2** Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files) **CO3** Apply the programming principles learnt in real time problems **CO4** Analyze the various methods of solving a problem and choose the best method **CO5** Code, debug and test the programs with appropriate test cases
	Core Course- VI: **Practical-Programming in c++**	EMCSP3	3	5	Upon completion of the course the students would be able to: **CO1** Remember the program structure of C with its syntax and semantics **CO2** Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files) **CO3** Apply the programming principles learnt in real-time problems **CO4** Analyze the various methods of solving a problem and choose the best method **CO5** Code, debug and test the programs with appropriate test cases
	Elective Course - (EC 3) : **Micro Processor and Micro Controller**	EECS33	3	3	On completion of this course, students will **CO1** Remember the Basic binary codes and their conversions. Binary concepts are used in Microprocessor programming and provide a good understanding of the architecture of 8085o

					introduce the internal organization of Intel 8085 Microprocessor.. **CO2** Understanding the 8085 instruction set and their classifications, enables the students to write the programs easily on their own using different logic **CO3** Applying different types of instructions to convert binary codes and analyzing the outcome. The instruction set is applied to develop programs on multi byte arithmetic operations. **CO4** Analyze how peripheral devices are connected to 8085 using Interrupts and DMA controller. **CO5** An exposure to create real time applications using microcontroller.
Part-IV	SEC-4: (Entrepreneurial Based) – **Practical -PHP Programming**	ESCSP3	2	2	On completion of this course, students will **CO1** Write PHP scripts to handle HTML forms **CO2** Write regular expressions including modifiers, operators, and meta characters. . **CO3** Create PHP Program using the concept of array. **CO4** Create PHP programs that use various PHP library functions **CO5** Manipulate files and directories.
	SEC-5: **Naan Muthalvan /HTML**		2	2	
	Environmental Studies	EEVS31	2	2	Upon completion of this course, Students would have **CO1** Have a basic knowledge of Natural resources its classification, concepts, and natural resources of India. **CO2** Obtain knowledge on different types of ecosystem **CO3** Understand the values of biodiversity and conservation on global, national, and local scales **CO4** Gain knowledge on different types of pollution in the environment **CO5** Introduce the students in the field of Law and Policies and Acts both at the national and international level relating to environment
Semester – IV B.Sc . Computer Science					
Part-III	Core Course -VII : **Java Programming**	EMCS41	4	4	On completion of this course, students will **CO1** Understand the basic Object-oriented concepts .Implement the basic constructs of Core Java. **CO2** Implement inheritance, packages, interfaces and exception handling of Core Java. **CO3** Implement multi-threading and I/O Streams of Core Java **CO4** Implement AWT and Event handling. **CO5** Use Swing to create GUI.

	Core Course -VIII : **Practical Java Programming**	EMCSP4	3	5	On completion of this course, students will **CO1** Understand the basic Object-oriented concepts. Implement the basic constructs of Core Java. **CO2** Implement inheritance, packages, interfaces and exception handling of Core Java. **CO3** Implement multi-threading and I/O Streams of Core Java **CO4** Implement AWT and Event handling. **CO5** Use Swing to create GUI.
	Elective Course (EC4) : **Resource Management Techniques**	EECS41	3	3	On completion of this course, students will **CO1** Understand and critically apply the concepts and methods of business analytics **CO2** Identify, model and solve decision problems in different settings. **CO3** Interpret results/solutions and identify appropriate courses of action for a given managerial situation whether a problem or an opportunity. **CO4** Create viable solutions to decision making problems. **CO5** Instill a sense of ethical decision-making and a commitment to the long run welfare of both organizations and the communities they serve.
Part-IV	SEC- 6: **Practical - Advanced Excel**	ESCSP4	2	2	On completion of this course, students will **CO1** Aggregate numeric data and summarize into categories and subcategories **CO3** Filtering, sorting, and grouping data or subsets of data **CO4** Create pivot tables to consolidate data from multiple files **CO5** Presenting data in the form of charts and graphs
	SEC -7**: Naan Muthalvan**		2	2	
	Value Education	EVBE41	2	2	**CO1** Identify the contribution of social reformers and factors that influence social justice **CO2** Compare and list the legal rights provided to women, children, Dalits, minorities and physically challenged as per human rights and Indian constitution **CO3** Stay as a responsible citizen and raise voice for any violence against women **CO4** Analyze the prospects and challenges in mass media role of media in **CO5** Assess the influence of new media on children and youth and use them to inculcate communal harmony and social justice **CO6** Frame their own personal values based on social ethics to moderate the social issues and lead a secular society

Semester – V B.Sc . Computer Science					
Part - III	Core Course –V: **Relational Database Management System**	CMCS51	4	5	On Successful completion of the course, the student will be able to **CO1** Outline relational database concepts **CO2** Relate transaction management concepts in database system. **CO3** Utilize Normalizations techniques. **CO4** Write SQL programs that use: procedure, function, package, cursor and Exceptions. **CO5** Use current techniques and tools necessary for complex computing practices.
	Core Course –V1: **Data Communication And Computer Networks**	CMCS52	4	5	On Successful completion of the course, the student will be able to **CO1** Define the concepts in Computer Network and Data Communication **CO2** Outline the various protocols used in network **CO3** Compare OSI Layers in Computer networks **CO4** List about Switching Techniques **CO5** Discuss wireless LAN‘s
	Core Course –V11: **PHP and mySQL**	CMCS53	4	4	On Successful completion of the course, the student will be able to **CO1** Define and use open source database management system MySQL **CO2** Explain dynamic web pages and websites. **CO3** Identify web pages with database. **CO4** Compare the concepts of open sources **CO5** Assess the knowledge about Arrays
	Major Practical – V: **Practical:PHP**	CMCSP5	4	4	On Successful completion of the course, the student will be able to **CO1** Develop knowledge about basic PHP Programs. **CO2** Evaluate PHP scripts and functions **CO3** Develop arrays in PHP **CO4** Design loops in PHP **CO5** Compare the scripts and functions in PHP
	Major Practicals – VI: **Machine learning lab**	CMCSP6	2	4	On Successful completion of the course, the student will be able to **CO1** Apply the concepts and practical knowledge in analysis, design and Development of computing systems **CO2** Make use of applications to multidisciplinary problems. **CO3** Discuss the knowledge about various algorithms **CO4** Interpret the knowledge about various datasets **CO5** Develop data frames in Machine Leaning
	Major Practicals –VII:	CMCSP7	2	3	On Successful completion of the course, the student will be able to

	Green foot Lab				**CO1** Know about the various Applications of Multimedia. **CO2** Develop two- dimensional graphical applications **CO3** Design multimedia animations **CO4** Know the knowledge about video works in multimedia applications **CO5** Implement interactive games
	Elective – I: **Mobile Application Development**	CECS51	4	4	**CO1** Recall the basics, field of computing sciences and Multidisciplinary of Mobile Applications **CO2** Build interactive applications **CO3** Develop multiple activities and indent in mobile applications **CO4** Understand Fragments of mobile application development **CO5** Develop mobile application development using Sq lite Database
	Skill Based : **Common Personality Development**		2	2	
Semester – VI B.Sc . Computer Science					
Part-III	Core Course -V111: **Operating System**	CMCS61	4	5	On Successful completion of the course, the student will be able to **CO1** Acquire the fundamental knowledge of the operating system architecture and components and to know the various operations performed by the operating system. **CO2** Understand the basic working process of an operating system. **CO3** Understand the importance of process and scheduling. **CO4** Explain the issues in synchronization and memory management. **CO5** Discuss about mass storage structures
	Core Course -IX : **Software Engineering And Testing**	CMCS62	4	5	On Successful completion of the course, the student will be able to **CO1** Define the fundamental knowledge of Software Engineering **CO2** Classify the various testing methods. **CO3** Analyze various software life cycle models **CO4** Interpret User Interface design **CO5** Select software project management
	Core Course -X : **Computer Graphics And Visualization**	CMCS63	4	4	On Successful completion of the course, the student will be able to **CO1** Understand the overview of the graphics visualization **CO2** Acquire the fundamental knowledge of Computer Graphics and Visualization. **CO3** Understand the Algorithms in Computer Graphics **CO4** Acquire the transformation technique in Graphics **CO5** Understand the Interactive methods easily

	Major Practical – VIII: **Computer Graphics Lab**	CMCSP8	2	4	On Successful completion of the course, the student will be able to **CO1** Illustrate skills in programming computer graphics **CO2** Apply multimedia concepts **CO3** Compile the algorithms to draw line, circle etc. **CO4** Develop image using Scaling, Rotating and translation technique **CO5** Demonstrate the image using random and bouncing balls
	Practical- IX : **MySQL Lab**	CMCSP9	3	4	On Successful completion of the course, the student will be able to **CO1** Illustrate skills in database **CO2** Apply database concepts **CO3** Create database and operate update, remove etc. **CO4** Develop various query functions **CO5** Demonstrate the security by setting password and its previlages.
	Major Elective - II **Introduction To Digital Image Processing**	CECS62	4	4	On Successful completion of the course, the student will be able to **CO1** Define the fundamental knowledge of introduction to Digital Image Processing. **CO2** Explain the features present in Digital Image Processing. **CO3** Outline the enhancement of spatial domain **CO4** Analyze the color Image processing **CO5** Interpret the image using compression
	Project:- **Digital Image Processing Using Scilab**	CMCS6P	6	6	On Successful completion of the course, the student will be able to **CO1**Get knowledge about the basic programs on Digital Image Processing **CO2** Acquire the knowledge from Thresholding Technique **CO3** Read the colour image and separate the planes **CO4** Perform the brightness of the image **CO5** Manipulate the contrast image.