

Department of Computer Applications
Nesamony Memorial Christian College, Marthandam
B.C.A Computer Applications
Course Outcome

Semester – I B.C.A					
Part	Course Name	Course Code	Credit	Hours	Course Outcome
Part - III	Core Course – I: Python Programming	FCCA11	5	5	On completion of this course, students will CO1 Learn the basics of python, do simple programs on python, 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 of 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: Python Lab	FCCAP1	5	5	On completion of this course, students will CO1 Demonstrate the understanding of syntax and semantics of statements. 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 Course -1: Discrete Mathematics-I	FECA11	3	4	On Successful completion of the course, the student will be able CO1 Recall basic concepts for clear understanding of mathematical principles CO2 Explain practical problems. CO3 Construct matrices using discrete mathematics CO4 Analyze techniques to draw graph using mathematics CO5 Design graphs using the representations

Part - IV	SEC -1: Office Automation Lab	FSCAP1	2	2	<p>CO1 Understand the basics of computer systems and its components.</p> <p>CO2 Understand and apply the basic concepts of a word processing package.</p> <p>CO3 Understand and apply the basic concepts of electronic spreadsheet software.</p> <p>CO4 Understand and create a presentation using PowerPoint tool.</p> <p>CO5 Understand and apply the basic concepts of database management system.</p>
	FC : Fundamentals of Information Technology	FFCA11	2	2	<p>On completion of this course, students will</p> <p>CO1 Learn the basics of computer, Construct the structure of the required things in computer, learn how to use it.</p> <p>CO2 Develop organizational structure using for the devices present currently under input or output unit.</p> <p>CO3 Concept of storing data in computer using two headers namely RAM and ROM with different types of ROM with advancement in storage basis.</p> <p>CO4 Work with different software, Write program in the software and applications of software.</p> <p>CO5 Usage of Operating system in information technology which really acts as a interpreter between software and hardware.</p>
Semester – II B. C.A					
Part - III	Core Course -111: Object Oriented Programming Concepts using C++	FCCA21	5	5	<p>Upon completion of the course the students would be able to</p> <p>CO1 Remember the program structure of C with its syntax and semantics</p> <p>CO2 Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files)</p> <p>CO3 Apply the programming principles learnt in real time problems</p> <p>CO4 Analyze the various methods of solving a problem and choose the best method</p> <p>CO5 Code, debug and test the programs with appropriate test cases</p>
	Core Course –IV: Programming Lab	FCCAP2	5	5	<p>Upon completion of the course, the students will</p> <p>CO1 Know the definition of digital logics and circuits</p> <p>CO2 Understand the digital devices</p> <p>CO3 Understand the digital arithmetic circuits</p> <p>CO4 Acquire Knowledge on basics of Gates and its Applications</p> <p>CO5 Have the necessary understanding on Registers for Counting Applications</p>
	Elective Course -2: Digital Logic Fundamentals	FECA21			<p>CO1 Understand the digital devices</p> <p>CO2 Understand the digital arithmetic circuits</p> <p>CO3 Acquire Knowledge on basics of Gates and its Applications</p> <p>CO4 Have the necessary understanding on Registers for Counting Applications</p>
Part -	SEC-2 :	FSCA21	1	2	On completion of this course, students will

IV	Web Designing				CO1 Develop working knowledge of HTML CO2 Learn to develop Web pages using Hypertext Markup Language(HTML) CO3 Have the ability to optimize page styles and layout with Cascading Style Sheets(CSS). CO4 Develop a java script CO5 Get knowledge to develop web applications
	SEC -3: HTML Lab	FSCAP2	1	2	On completion of this course, students will CO1 Know the basic concept in HTML. Concept of resources in HTML. CO2 Know Design concept, Concept of Forms. Understand the concept of save the files. CO3 Understand the page formatting. Concept of CSS. CO4 Creating Links. Know the concept of embedding audio and video in a page. CO5 Understand the table creation.
	AECC1: Naan Mudhalvn		2	2	
Semester – III B. C.A					
Part - III	Core Course -5: Data Structures and Algorithms	EMCA31	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 -6: Data Structures and Algorithms using C++ Lab	EMCAP3	4	4	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
	Elective -111: Microprocessor and Microcontroller	EECA31	3	3	On completion of this course, students will CO1 Remember the Basic binary codes and their conversions .Binary concepts are use in Microprocessor programming and provide a good understanding of the architecture of 8085. CO2 Understanding the 8085 instruction set and their classifications, enables the students to write the programs easily on their own using different logic. CO3 Apply 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 Have an exposure to create real time applications using microcontroller.
Part - III	SEC -4: PHP Programming Lab	ESCAP3	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.
	AECC2: NaanMudhalvan		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. C.A					
Part - III	Core Course -V11: Java Programming	EMCA41	5	5	Outcomes 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 -V111: Java Programming Lab	EMCAP4	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.
	Elective - 4:	EECA41	3	3	On completion of this course, students will

	Financial accounting				CO1 Acquire knowledge about general aspects of business operations. CO2 Explain the concepts and procedures of financial reporting, including income and expenditure statement, balance sheet etc CO3 locate and analyze financial data from annual reports of corporations.
Part - IV	SEC-5: Multimedia Systems Lab	ESCAP4	2	2	On completion of this course, students will CO1 Understand the concepts, importance, application and the process of developing multimedia CO2 To have basic knowledge and understanding about image related processing CO3 To understand the framework of frames and bit images to animations CO4 Learn about the cropping techniques CO5 Understanding the concept of poster making
	AECC3 NaanMudhalvan		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. C.A					
Part-111	Core Course -1X: Machine Learning Using Python	CMCA51	4	4	Upon completion of the course the student will be able to CO1 Describe the concepts of machine Learning CO2 Explain the fundamentals of Classification and probability theory CO3 Analyse the supervised learning techniques CO4 Analyse the un-supervised learning techniques CO5 Illustrate Big Data using machine learning CO6 Develop applications using Hadoop and Map Reduce
	Core Course –X: Web Technology	CMCA52	5	4	Upon Completion of the course, the students should be able to: CO1 Employ fundamental computer theory to basic programming techniques. CO2 Use fundamental skills to maintain web server services required to host a website.

					<p>CO3 Select and apply markup languages for processing, identifying, and presenting of information in web pages.</p> <p>CO4 Use scripting languages and web services to transfer data and add interactive components to web pages.</p>
	Core Course –X1: Relational Database Management System	CMCA53	6	4	<p>CO1 Master the basic concepts and appreciate the applications of database systems.</p> <p>CO2 Master the basics of SQL and construct queries using SQL.</p> <p>CO3 Be familiar with a commercial relational database system (Oracle)by writing SQL using the system.</p>
	Major Practical - V : RDBMS Lab	CMCAP5	4	2	
	Major Elective – I: E-comers	CECA51	4	4	<p>CO1 Argue the correctness of algorithms using inductive proofs and invariants.</p> <p>CO2 Analyse worst-case running times of algorithms using asymptotic analysis.</p> <p>CO3 Describe the divide-and-conquer paradigm and explain when an algorithmic design situation Calls for it.</p> <p>CO4 Recite algorithms that employ this paradigm.</p>
	Project - Mini Project	CMCA5P	5	4	
Part IV	Common : Personality Development	CCSB51	2	2	
Semester – VI B. C.A					
	Core Course -X11: Cloud Computing	CMCA61	4	4	<p>CO1 Understand the basics of Cloud Computing</p> <p>CO2 Comprehend the concepts of Virtualization and the design of Cloud Services</p> <p>CO3 Classify appropriate techniques and tools to develop Cloud applications</p> <p>CO4 Apply the knowledge of Python for Cloud Services</p> <p>CO5 Develop the security architecture for a Cloud environment</p>
	Core Course -X111: Data Communications and Networking	CMCA62	4	5	<p>CO1 Remember the organization of computer networks, factors influencing computer network development and the reasons for having variety of different types of networks.</p> <p>CO2 Understand Internet structure and can see how standard problems are solved</p> <p>CO3 Apply knowledge of different techniques of error detection and correction</p> <p>CO4 Analyze the requirements for a given organizational structure and select the most appropriate networking architecture and technologies</p>

					CO5 Knowledge about different computer networks, reference models and the functions of each layer in the models
	Core Course -X1111: VB.Net	CMCA63	4	6	CO1 Understanding the basic concepts of visual programming CO2 Able to Design simple applications using VB.Net CO3 Apply knowledge and Work with GUI applications CO5 Understand database applications CO5 Develop creative windows applications
	Major Practical -VI : VB.Net Lab	CMCAP6	2	4	
	Major elective –II: Software project management	CECA63	4	4	CO1 Understand the structure of modern computer graphics systems. CO2 Understand the basic principles of implementing computer graphics primitives. CO3 Develop design and problem-solving skills with application to compute graphics.
	Project Major Project – (group)	CMCA6P	5	5	
	Naan Mudhalvan - PBL Android App Development		2	2	