FATIMA COLLEGE (AUTONOMOUS), MADURAI – 625018

2020 – 2021

CRITERION 1 - CURRICULAR ASPECTS

1.1.1 Curricula developed and implemented have relevance to the local, national, regional and global developmental needs which is reflected in Programme outcomes (POs), Programme specific outcomes (PSOs) and Course Outcomes (COs), of the Programmes offered by the Institution.

NAME OF THE PROGRAMME: B.SC INFORMATION TECHNOLOGY **PROGRAMME CODE : USIT**

PROGRAMME OUTCOMES:

PO1	**Computer knowledge:** Apply the knowledge of science and mathematics to the solution of complex problems
PO2	**Development of solutions:** Design solutions for IT related problems using latest technologies and implement the solutions to meet the current needs of the Public.

PO3	**Conduct Investigations of complex problems:** Provide valid conclusions using evidence-based knowledge and study methods including design of experiments, analysis and data interpretation, and information synthesis.
PO4	**Modern tool usage:** Creating, choosing and applying appropriate techniques, resources and current IT technologies like simulation and modelling to complex IT systems with an understanding of limitations.
PO 5	**Environment and sustainability:** Understand the impact in social and environmental contexts of IT analyst approaches and show the awareness and need for sustainable development.
PO 6	**Ethics:** Apply ethical principles and adhere to professional ethics and responsibilities and norms of the IT practice.
PO 7	**Individual and Team work:** Effectively work as an entity, and as a member or leader in various teams, and in multidisciplinary environments.

PROGRAMME SPECIFIC OUTCOMES:

PSO1	Apply computational techniques and software principles for designing of software systems.
PSO 2	Develop efficient and effective software systems using modern computer techniques
PSO3	Acquire fundamental concepts, methods and practices of Information Technology to develop theoretical and practical skill sets.
PSO4	Justify the optimum technique to allocate memory resources, processors, I/O peripherals to provide optimal programmatic solution to a real-world problem.
PSO5	Support to gain skills on basic as well as trendy software languages and packages to design web sites, web apps, mobile apps and real time software projects.
PSO6	Promote the students to generalize and distinguish the characters of different systems for different environment.
PSO7	Trigger the students to enrol in to the research areas of IT industry like cloud computing and data

	analytics.
PSO8	Able to become entrepreneur and to pursue career in IT industries

Course Code	Course Title	Nature of the Course (Local/National/ Regional/ Global)	Course Description	Course Outcomes
19I1CC1	FUNDAMENTALS OF COMPUTING	GLOBAL	This course content plays a vital role in building the basic concepts in computers and the fundamental knowledge in programming.	CO1: Understand the basic concepts in Computer & C Programming. CO2: Identify and Apply different construct available for iteration such as 'for', 'while' and

				'do-while'. CO3: Understand various storage concepts. CO4: Develop C programs using functions. CO5: Summarize the concepts of Pointers and Files.
19I1CC2	LAB I - PROGRAMMING IN C	GLOBAL	This course content plays a vital role in building the basic programming skill in C language.	CO1: Know the concept of Problem solving. CO2: Implement various concepts in C CO3: Apply the concepts of Functions, Structures and Unions in C program CO4: Make use of pointers using C programs.

				CO5: Apply and Use the fileconcepts in C programs
19I1NME	MULTIMEDIA APPLICATIONS	GLOBAL	This course content enables other Major students to strengthen and increase the understanding of basis Multimedia application Software's.	CO1: Construct simple vector graphics using basic drawing elements and shape commands. CO2: Apply basic shape commands and image effects in processing raster format pictures CO3: Understand the basic tools for editing images. CO4: Develop effective graphics for both web and print media.

				CO5: Apply layer features and layer management techniques for creating Web pages and Invitations.
19I2CC3	DATA STRUCTURES USING C++	GLOBAL	To impart the basic concepts of data structures and algorithms 2 To understand concepts about searching and sorting techniques 3 To Understand basic concepts about stacks, queues, lists, trees and graphs 4 To	CO1: Understand how to apply the major OOPs concepts to implement encapsulation, inheritance and polymorphism CO2: Implement an achievable practical application and analyse issues related to object-oriented techniques in the C++

			understanding about writing algorithms and step by step approach in solving problems with the help of fundamental data structures.	programming language CO3: Handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures. CO4: Use linear and non-linear data structures like Stacks, Queues, and Linked List. CO5: Analyse various Searching and Sorting Techniques using C++.
19I2CC4	LAB -II - DATA STRUCTURES USING C++	GLOBAL	This course enables students to identify, formulate all techniques	CO1: Implement an achievable practical application on object-oriented

			of software development in the C++ Programming Language and demonstrate these techniques.	techniques in the C++ programming language CO2: Implement linear and non-linear data structures like Stacks, Queues, linked list. CO3: Demonstrate the concept of classes and their types by using C++ objects. CO4: Apply the concept of polymorphism and inheritance in C++ CO5: Implement practical applications by applying Searching and Sorting Techniques using C++

19I2NME	MULTIMEDIA APPLICATIONS	GLOBAL	This course content enables other Major students to strengthen and increase the understanding of basis Multimedia application Software's.	CO1: Construct simple vector graphics using basic drawing elements and shape commands. CO2: Apply basic shape commands and image effects in processing raster format pictures CO3: Understand the basic tools for editing images. CO4: Develop effective graphics for both web and print media. CO5: Apply layer features and layer management techniques for creating

				Web pages and Invitations.
19I3CC5	DATABASE MANAGEMENT SYSTEMS	GLOBAL	This course introduces database design and creation using DBMS software. It also imparts various concepts in database management system.	CO1: Explain the structure and model of the relational database system. CO2: Design multiple tables and use group functions, sub queries. CO3: Design a database based on a data model considering the normalization to a specified level. CO4: Develop E- R model-based tables. CO5: Evaluate different PL/SQL blocks.

19I3CC6	LAB III RDBMS	GLOBAL	This course gives hands on experience in relational database management system.	CO1: Explain Various SQL Commands. CO2: Write SQL queries to user specifications CO3: Design database schema considering normalization and relationships within database. CO4: Develop PL/SQL Programs. CO5: Develop triggers, procedures and Cursors.
19I3AC3	DIGITAL PRINCIPLES AND COMPUTER	GLOBAL	Analyse a complex computing problem and to apply principles of	CO1: Explain about digital logic circuits CO2: Compute simple

	ARCHITECTURE		computing and other relevant disciplines to identify solutions.	arithmetic operations for fixed-point and floating-point addition and subtraction. CO3: Understand various digital components. CO4: Construct an instruction set capable of performing a specified set of operations. CO5: Demonstrate a memory system for a given set of specifications.
19I3SB1	OFFICE AUTOMATION	GLOBAL	This course trains students how to use MS Office applications use in	CO1: Use Word to prepare organizational documents.

			office work such as creating professional-quality documents; store, organize and analyse information; arithmetic operations and functions; and create dynamic slide presentations with animation, narration, images, and much more, digitally and effectively.	CO2: Design financial & other business applications requiring mathematical calculations using spread sheet software. CO3: Develop various charts--pie, bar, line, column, & area using spread sheet software. CO4: Create Dynamic presentations with animation. CO5: Demonstrate presentations with narration and images.
19I4CC7	PROGRAMMING IN	GLOBAL	This course enables the	CO1: Understand the concepts

	JAVA		students to build object-oriented java programs using the concept of abstraction, encapsulation, exception handling, packages, interfaces, threads and AWT controls. It also imparts the ability to develop projects in java with JDBC connectivity.	of Object-Oriented Programming & Java Programming Constructs. CO2: Understand basic concepts of Java such as operators, classes, objects, inheritance, packages, Enumeration and various keywords. CO3: Understand the concept of exception handling and Input/output operations. CO4: Design Java & Java applet-based applications. CO5: Analyse & Design the

				concept of Event Handling and Abstract Window Toolkit.
19I4CC8	LAB IV – PROGRAMMING IN JAVA	GLOBAL	This course gives hands on experience, practices the concepts of java programming language, and develops solutions for real world problems.	CO1: Implement Object Oriented programming concept using operators and control Structures. CO2: Design java programs using inheritance, interfaces and packages. CO3: Implement exception handling mechanism and multithreading concept. CO4: Design Java applet-based applications.

				CO5: Design applications to Handle Events using AWT components.
19I4AC4	OPERATING SYSTEMS	GLOBAL	This course content plays a vital role in making the students to understand the basic operating system concept.	CO1: Describe the evolution, types, structure and functions of operating systems. CO2: Explain techniques involved in concurrency and deadlock. CO3: Describe memory management and processor scheduling used in operating systems. CO4: Implement disk

				scheduling algorithm for a given scenario. CO5: Execute Linux basic commands and shell scripts.
19I4SB2	QUANTITATIVE APTITUDE	GLOBAL	This course content plays a vital role for clearing any competitive exam and it covers all the Quantitative Aptitude topics and an in-depth understanding of this subject.	CO1: Understand the short cut methods. CO2: Apply general mathematical techniques. CO3: Develop their critical thinking. CO4: Recall the formulas. CO5: Solve the sums by applying shortcut

				methods with time management
I5CC11	WEB TECHNOLOGY	GLOBAL	To acquire knowledge and skills for creation of web site considering both client and server-side Students will able to implement interactive web page(s) using HTML, CSS and JavaScript. Able to design a responsive web site using HTML and CSS. To gain ability to develop responsive web applications. To explore different web extensions	CO1: Implement interactive web page(s) using HTML, CSS and JavaScript. CO2: Design a responsive web site using HTML5 and CSS CO3: To gain ability to develop responsive web applications. CO4: To explore different web extensions and web services standards

			and web services standards	CO5: To be familiarized with PHP web framework
I5CC12	LAB V - WEB TECHNOLOGY LAB	GLOBAL	This course gives hands on experience in Web development Technologies.	CO1: Explain Various HTML tags. CO2: Design web pages with advanced HTML controls. CO3: Design Web pages using CSS CO4: Develop client side Scripting using JavaScript CO5: Develop web pages with XML.

I5CC13	DATA COMMUNICATION AND NETWORKING	GLOBAL	This course is to provide information about various data communication techniques like switching and networking concepts which includes layers and their corresponding protocols.	CO1: Describe the components of a data communications system CO2: Identify key considerations in selecting various switching techniques and various transmission media in networks CO3: Describe the various types of Protocols in Network layer and their features CO4: Illustrates the functionality of

				transport layer and their corresponding protocols. CO5: Analyse different usage of application layer protocols
I5CC14	DATA MINING CONCEPTS	GLOBAL	This course introduces the basic concepts, principles, methods, implementation techniques, and applications of data mining.	CO1: Identify data mining tools and techniques in building intelligent machines. CO2: Understand different pre-processing techniques. CO3: Analyse various data mining algorithms while applying in real time

				applications. CO4: Compare various supervised and unsupervised learning techniques in data mining. CO5: Illustrate the mining techniques like association, classification and clustering.
I5CC15	SOFTWARE ENGINEERING	GLOBAL	This course introduces the basic steps involved in Software Development Life Cycle (SDLC).	CO1: Understand how to plan a software project. CO2: Analyse the cost estimate and problem complexity using

				various estimation techniques. CO3: Prepare the SRS, Design document, Project plan of a given software system. CO4: Apply Software design and implementation ideas in S/W project development. CO5: Generate test cases using White Box testing and Black Box testing.
I5ME1	INFORMATION STORAGE AND	GLOBAL	This course provides a comprehensive understanding of the	CO1: Know the concepts of Storage and Data structure Environment

	MANAGEMENT		various storage infrastructure components in classic and virtual environments. It enables the students to make informed decisions in an increasingly complex IT environment.	based on growth and challenges in IT. CO2: Understand data protection by using related and recent techniques. CO3: Identify the parameters of managing and monitoring the storage infrastructure and manage the solutions. CO4: Know backup and archival data in both classic and virtualized environment. CO5: Analyse, Monitoring and

				managing the storage infrastructure in cloud environments.
I5ME2	MULTIMEDIA TECHNOLOGIES	GLOBAL	This course provides an understanding of various multimedia tools and its system design considerations.	CO1: Understand the characteristics of different media. CO2: Understand the representations of different multimedia data. CO3: Analyze different data formats. CO4: Identify various multimedia tools. CO5: Understand the System

				design considerations.
I5SB3	IMAGE DESIGNING SOFTWARE	GLOBAL	This course introduces the concepts and tools for design, create and manipulate images for integration in publication layout and web output by using the software tool.	CO1: Construct simple vector graphics by using basic drawing elements and shape commands. CO2: Apply basic shape commands and image effects in processing raster format pictures CO3: Design and edit images using image-editing tool. CO4: Apply layer features for creating images for web and print. CO5: Develop effective

				graphics for both web and print media.
I5SB4	WEB DESIGN USING DREAMWEAVER	GLOBAL	To Identify Dreamweaver fundamentals to create websites,create web pages,insert tables and import content into web pages, create reusable site assets. Link web pages and send the website to the server.	CO1: Design a complete website CO2: Design webpages with audio, video, flash, java applets and images. CO3: Design different layout styles which includes backend programming CO4: Applying variety of Fonts Design Forms, Frames, Tables Design Cascading Styles Sheets.

				CO5: Create Database connectivity.
I6CC16	.NET PROGRAMMING	GLOBAL	To describe the concepts of logic preparation; to recognize and explain the benefits of procedural, event driven, and object-oriented languages.	CO1: Explain the basics of GUI design work with Visual Basic Forms, Tool Box controls and Properties; CO2: Design and create Windows programs using the Visual Basic .NET programming language. CO3: Design and program using classes a completely documented Visual Basic .NET

				project. CO4: Demonstrate advanced features of .NET programming. CO5: Develop windows application and web applications in .NET framework analyzing user requirements.
I6CC17	LAB VI - .NET PROGRAMMING LAB	GLOBAL	This course covers the concepts to user for developing interactive web pages using ASP.Net. Able to performing Database operations for Windows Form and web	CO1: Understand various application types. CO2: Create simple data binding applications using ADO.Net connectivity.

			applications	CO3: Performing Database operations for Windows Form and web applications. CO4: Create user interactive web pages using ASP.Net. CO5: Create dynamic window application.
I6CC18	INFORMATION SECURITY	GLOBAL	The course covers the basics of the science of encryption and network security technology. It also provides the knowledge about the various risks that	CO1: Understands the basic concepts of security. CO2: Analyse various cryptographic algorithms while applying practically.

			networks are faced with in this day and age, focussing on the various vulnerabilities of systems.	CO3: Identify Asymmetric based cryptographic algorithms CO4: Compares different internet security protocols CO5: Summarize the concepts of firewall and IP security
I6CC19	PROJECT LAB	GLOBAL	Support to gain skills on basic as well as trendy software languages and packages to design web sites, web apps, Mobile apps and real time software projects.	CO1: Gather software requirement specifications and prepare design for real time problems.

I6ME3	CLOUD COMPUTING	GLOBAL	This course facilitates the students to understand, analyse the various applications of cloud tool and also provide solutions for cloud security and storage.	CO1: Understand fundamental concepts of cloud service and deployment models. CO2: Identify the importance of virtualization along with their technologies. CO3: Analyse different cloud computing Services. CO4: Analyse the components and the security in cloud. CO5: Illustrate different design & develop backup strategies for cloud data based on

				features.
I6ME4	MOBILE COMPUTING	GLOBAL	This course gives the ability to acquire the knowledge about the technologies in mobile computing and its security issues.	CO1: Understand the infrastructure to develop mobile communication systems. CO2: Identify the characteristics of different multiple access techniques in mobile communication. CO3: Analyse the measures GSM systems and the entire protocol architecture of GSM. CO4: Understand the GPRS

				technologies and architecture for communication using Mobile Devices. CO5: Illustrate the Security issues in Mobile Computing.
I6ME5	COMPUTER GRAPHICS	GLOBAL	This course is designed to facilitate to understand, design and implementation of pictorial data and will make the students to be a successful Graphics programmer.	CO1: Understand the need and concepts of computer graphics. CO2: Describe the procedure for points, lines and Circle. CO3: Analyse various attributes of output

				primitives. CO4: Illustrate two-dimensional geometric transformation. CO5: Analyse windowing and clipping concepts.
I6ME6	INTERNET & E-COMMERCE	GLOBAL	Presents concepts and skills for the strategic use of e-commerce and related information technology from three perspectives: business to consumers, business-to-business, and intra-organizational.	CO1:Understand the basic concepts of E-commerce. CO2: Examine some typical distributed applications. CO3:Anlyze the details of the problems that are encountered when developing distributed

				applications. CO4: Describe briefly some of the technologies that are used to support distributed applications. CO5: Understand the various e-commerce website development tools .
I6SB5	3D ANIMATION SOFTWARE	GLOBAL	This course is designed to facilitate different animation techniques in animation software	CO1: Understand basic concepts in Alice. CO2: Construct a scene. CO3: Build program in Alice using looping and branching. CO4: Apply event handlers in

				alike. CO5: Develop 3D animations.
I6SB6	IMAGE EDITING SOFTWARE	GLOBAL	This course provides the knowledge on basic selection tools and edge refinement to isolate and edit parts of an image.	CO1: Design layouts for web pages, Paper Adverts, Broachers, CD Covers, Package. CO2: Designing Event and Exhibition stall Designs, Pop Ups Touch Ups. CO3: Colour corrections Paintings, Drawings Converting B/W photo to colour. CO4: Create composite images that demonstrate

				advanced selection and layering techniques. CO5: Manipulate layers through ordering, positioning, scaling, rotation, and adjustments.