FATIMA COLLEGE

(Autonomous)
Affiliated to Madurai Kamaraj University
Re-Accredited with 'A++' (CGPA 3.61) by NAAC (Cycle - IV)
Mary Land, Madurai - 625018, Tamil Nadu

FATIMA COLLEGE (AUTONOMOUS), MADURAI
2021 – 2022

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 Outcomes: The learners will be able to

PO 1	Apply acquired scientific knowledge to solve complex issues.
PO 2	Attain Analytical skills to solve complex cultural, societal and environmental issues.
PO 3	Employ latest and updated tools and technologies to analyse complex issues.
PO 4	Demonstrate Professional Ethics that foster Community, Nation and Environment Building Initiatives.

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Programme Specific Outcomes:

On completion of B.Sc. Information Technology Programme, the graduates would be able to

PSO 1	Apply computational techniques and software principles for designing of software systems.
PSO 2	Develop efficient and effective software systems using modern computer techniques.
PSO 3	Acquire fundamental concepts, methods and practices of Information Technology to develop theoretical and practical skill sets.
PSO 4	Justify the optimum technique to allocate memory resources, processors, I/O peripherals to provide optimal programmatic solution to a real world problem.
PSO 5	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.
PSO 6	Promote the students to generalize and distinguish the characters of different systems for different environment.

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PSO 7	Trigger the students to enroll in to the research areas of IT industry like cloud computing and data analytics.
PSO 8	Able to become entrepreneur and to pursue career in IT industries.

Course Outcomes:

Course Code	Course Title	Nature of the Course (Local/National/ Regional/Global)	Course Description	Course Outcomes
21I1CC1	Programming In C	NATIONAL	This course content plays a vital role in building 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.

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				CO5: Summarize the concepts of Pointers and Files.
21I1CC2	LAB IN C PROGRAMMING		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 file concepts in C programs.
19I1NME	**IMAGE EDITING TOOLS**	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.
21I2CC3	**DATA STRUCTURES USING C++**	GLOBAL	This course introduces the basic concepts of C++. It also aims at facilitate the students to know the Data Structure concepts.	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++ 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++.
21I2CC4	**LAB -II - DATA STRUCTURES USING C++**	GLOBAL	This course enables students to identify, formulate all techniques of software	CO1: Implement an achievable practical application on object-oriented techniques

			development in the C++ Programming Language and demonstrate these 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	**IMAGE EDITING TOOL**	GLOBAL	This course content is enables other	CO1: Construct simple vector graphics using basic

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			disciplined students to strengthen and increase the understanding of basis Multimedia application software like Photoshop and Corel Draw.	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	CO1: Explain the structure and model of the relational database system.

			software. It also imparts various concepts in database management 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 ARCHITECTURE**	The course content plays a vital role in making the students to understand the basic digital components	GLOBAL	CO1: Explain about digital logic circuits CO2: Compute simple 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	**AUTOMATION SKILLS**	GLOBAL	This course trains students how to use MS Office applications use in office work such as creating professional-quality documents, store, organize and analyze information, arithmetic operations, functions and create dynamic slide presentations with animation, narration, images, and much	CO1: Use Word to prepare organizational documents. 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.

				more, digitally and effectively.	CO5:Demonstrate presentations with narration and images.
19I4CC7	**PROGRAMMING IN JAVA**	GLOBAL		This course enables the 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.	CO1: Understand the concepts 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 & LINUX**	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	**ANALYTICAL SKILLS**	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.

| 19I5CC9 | .NET PROGRAMMING | GLOBAL | This course introduces .NET Framework and imparts various concepts in .NET framework | CO1: Explain the .NET framework.

CO2: Apply C# concepts in developing software solutions based on user requirements.

CO3: Design basic GUI applications using .NET.

CO4: Demonstrate advanced features of ASP.NET programming.

CO5: Develop windows application and web applications in .NET framework analyzing user requirements. |

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19I5CC10	LAB V: .NET PROGRAMMING	GLOBAL	This course gives hands on experience in C# Programming with dot net.	CO1: Understand various application types. CO2: Create dynamic window application. CO3: Use asp.net controls in web application. CO4: Build interactive Web pages. CO5: Use XML in web application.
19I5CC11	SOFTWARE ENGINEERING	GLOBAL	This course introduces the basic steps involved in Software Development Life Cycle (SDLC).	CO1: Understand how to plan a software project.

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				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.
19I5CC12	**DATA COMMUNICATION AND NETWORKING**	GLOBAL	This course is to provide information about various data communication	CO1: Describe the components of a data communications system

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			techniques like switching and networking concepts which includes layers and their corresponding protocols.	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.

19I5ME1	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.

19I5ME2	SOFT COMPUTING	GLOBAL	This course introduces the basic concepts, principles, methods, implementation techniques, and applications of Soft computing.	CO1: To Improve Data Analysis Solutions is to strengthen the dialogue between the statistics and soft computing.
				CO2: To understand the fundamental theory and concepts of neural networks, neuro-modeling, several neural network paradigms and its applications.
				CO3: To understand the concepts of fuzzy sets, knowledge representation using fuzzy rules, approximate reasoning, fuzzy inference systems, and fuzzy logic control and other machine

				intelligence applications of fuzzy logic.
				CO4: To understand the basics of an evolutionary computing paradigm known as genetic algorithms and its application to engineering optimization problems.
				CO5: To analyze Artificial Neural Networks and its applications.
19I5SB3	**WEB TECHNOLOGY**	GLOBAL	This course gives hands on experience in Web development Technologies.	CO1: Explain Various HTML tags. CO2: Design webpages with advanced HTML controls.

				CO3: Design Web pages using CSS. CO4: Develop client side Scripting using JavaScript. CO5: Develop web pages with XML.
19I5SB4	**PHP**	GLOBAL	This is a Web scripting language PHP able to build dynamic Web applications. Semantics and syntax of the PHP language, including discussion on the practical problems that PHP solves.	CO1: Describe fundamentals of web. Introduce the creation of static webpage using HTML. CO2: Describe the importance of CSS in web development. CO3: Describe the function of JavaScript as a dynamic webpage creating tool.

				CO4: Distinguish PHP as a server side programming language. CO5: Outline the principles behind using MySQL as a backend DBMS with PHP.
19I6CC13	**PYTHON PROGRAMMING**	GLOBAL	This course is designed to introduce the python programming language. The focus of the course is to provide students with an introduction to programming, utilities, multitasking, GUI and network applications.	CO1: Identify the basic concepts of python program. CO2: Apply the Input and output statements in python. CO3: Analyze the usage of function control structure. CO4: Describe String, List and Tuples.

				CO5: Create Python Dictionary and Files.
19I6CC14	**LAB VI : PYTHON PROGRAMMING**	GLOBAL	This course content plays a vital role in building the basic programming skill in Python.	CO1: Demonstrate the basic concepts of variables expressions. CO2: Develop basic python programs with I/O operations. CO3: Develop programs with function control structure. CO4: Apply strings and lists in python. CO5: Develop python programs with files.

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| 19I6CC15 | INFORMATION STORAGE AND MANAGEMENT | GLOBAL | This course provides a comprehensive understanding of the various storage infrastructure components in classic and virtual environments. It enables the students to make informed decisions in an increasingly complex IT environment. | CO1: Know the concepts of Storage and Data structure 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.
19I6ME3	**CLOUD COMPUTING**	GLOBAL	This course facilitates the students to understand, analyze 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.

19I6ME4	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.
19I6ME5	**NETWORK 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 networks are faced with in this day and age, focussing on the various vulnerabilities of systems.	CO1: Understands the basic concepts of security. CO2: Analyse various cryptographic algorithms while applying practically. CO3: Identify Asymmetric based cryptographic algorithms CO4: Compares different internet security protocols CO5: Summarize the concepts of firewall and IP security.

19I6ME6	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.
19I6SB5	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 alice.

				CO5: Develop 3D animations.
19I6SB6	**IMAGE MANIPULATION TOOLS**	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.