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: M. SC INFORMATION TECHNOLOGY **PROGRAMME CODE: PSIT**

PROGRAMME OUTCOMES:

PO 1	Computational Knowledge: acquire knowledge of Computing Fundamentals, Computing Specialization, and Domain Knowledge of proper computing models from defined problems
PO 2	Problem Analysis: identify, invent, research activities to fundamental concepts of Mathematics, Computing Science and Relevant Domains provide solutions for complex computing problems using
PO 3	Design and Development: design and develop a solution for complex problems in domains like Banking, Insurance, Healthcare Systems and Multimedia and Mass Communications.

PO 4	Research Activity: apply Research based knowledge and methodologies to design, analyze and interpretation of data and find the solutions for complex problems by applying right tools
PO5	Professional ethics: understand professional ethics and Cyber regulations and develop the youth with social commitments.
PO 6	Creativity and Entrepreneurship: find out right opportunity for entrepreneurship and create and add value for the betterment of an individual and society at large.

PROGRAMME SPECIFIC OUTCOMES:

PSO 1	Understand the concepts and applications in the field of Computing Sciences like Web designing and development, Mobile application development, and Network and communication technologies.
PSO 2	Apply the learning from the courses and develop applications for real world problems.
PSO 3	Understand the technological developments in the usage of modern design and development tools to analyze and design for a variety of applications

PSO 4	Communicate in both oral and written forms, demonstrating the practice of professional ethics and the concerns for social welfare.
PSO 5	Demonstrate understanding of the principles and working of the hardware and software aspects of computer systems
PSO 6	Ability to understand the structure and development methodologies of software systems. Possess professional skills and knowledge of software design process. Familiarity and practical competence with a broad range of programming language and open source platforms.
PSO 7	Be acquainted with the contemporary issues, latest trends in technological development and thereby innovate new ideas and solutions to existing problems.

Course Code	Course Title	Nature of the Course (Local/ National/ Regional/ Global)	Course Description	Course Outcomes
19PG1IT1	Data Structures and Algorithm Analysis	Global	This course provides in-depth coverage of data structures and Algorithmic analysis.	CO1: To learn about Linear Data Structures CO2: Develop knowledge on different design techniques CO3: Learn about the non-linear data structures – Trees CO4: To Implement appropriate operations for Graphs and sorting CO5: Implement appropriate operations like sorting and

				searching techniques.
19PG1IT2	Object Oriented Software Engineering	Global	Object Oriented software Engineering provides object oriented programming techniques. And explains various object oriented development cycles with appropriate testing methods	CO1: Differentiate traditional and object oriented software engineering CO2: Explain various SDLC methods of OOSE CO3: Describe techniques used in OOSE CO4: Explain OOSE testing methods CO5: Analyze and choose necessary method for a particular project
19PG1IT3	Data Storage and Management	Global	This course provides an in-sight to learn and understand the	CO1: To understand and apply Outline the features of DBMS and Relational

			concepts of relational database management and its programming techniques	Database design CO2: To Design conceptual models of a database using ER model CO3: To implement normalization techniques in database design CO4: To Retrieve information from database by formulating complex SQL Queries. CO5: To Utilize PL/SQL programming to solve problems
19PG1IT4	Distributed Operating System	Global	To understand the concept of design and implementation in the context of distributed	CO1: Discuss the core concepts of distributed systems. CO2: Analyze various message

			operating systems	passing mechanisms with its model. CO3: Identify the inherent difficulties that arise due to distribution of computing resources. CO4: Explain migration with the process management policies. CO5: Explain the basic concepts, design and structure of the LINUX operating system.
19PG1IT5	Lab I : C++ and Data Structure	Global	This course provides to apply the use of various OOPs concepts with the help of programs	CO1: Develop solutions for a range of problems using objects and classes. CO2: implementation of constructors, destructors

				and operator overloading. CO3: Apply fundamental algorithmic problems including type casting, inheritance, and polymorphism CO4: Understand generic Data structures programming like Stack, Queue and Linked List. CO5: Implement the concept of Sorting and Searching techniques
19PG1IT6	LAB II : RDBMS	Global	This course provides to understand the Data storage, management and organisation	CO1: Implement Basic DDL, DML and DCL commands. CO2: Develop sub queries and

			techniques	understand their purpose. CO3: Use Aggregate and group functions to summarize data. CO4: Understand the PL/SQL architecture and write PL/SQL code for procedures, triggers, cursors, exception handling etc CO5: Implement the complex queries
19IT1EDC	Business Information System	Global	To know Information Systems and its application in organizations. The paper would expose the students to the	CO1: understand business organization and role of information technology CO2: To learn about the technology infrastructure

			Business relating to information systems and help them identify and evaluate various options in Organisational Information Systems	CO3: Explain various Intra and Inter organizational system CO4: To learn about Intelligent system for business. CO5: To learn about the Planning, Implementing and Managing strategies of information system
19PG2IT7	Java & J2EE	Global	This course provides various techniques of Java Programming and help them to create effective programs in this language	CO1: To understand the structure and model of the Java programming language. CO2: To explain the concepts of Packages, Interfaces and strings. CO3: To develop software implementing Exception

				handling mechanisms CO4: To design software for database connectivity and able to design GUI applications CO5: To implement server side programming using SERVLETS
19PG2IT8	Network Security	Global	This course provides knowledge on the security issues on the network.	CO1: To understand the Attacks, Services and Mechanisms. CO2: To explain the concepts cryptography CO3: To understand the concepts of Email and IP security CO4: To know about the web security issues and various

				protocols CO5: To understand the concepts of virus and firewall .
19PG2IT9	Mobile Application Development Using Android Studio	Global	The primary goals will be design the next generation of mobile website, apps and other mobile interfaces across multiple platform such as IOS, android, windows and mobile web	CO1: Design scripts to meet given interface and media control requirements CO2: Utilize variables, properties and other code elements appropriately to implement the code design CO3: Implement and evaluate techniques for the installation of mobile applications CO4: Explain the principles of technologies which support media production and

				delivery on a variety of platforms CO5: Evaluate alternative mobile frameworks, and contrast different programming platforms
19PG2IT10A	Cloud Computing	Global	This course provides current cloud computing technologies, including technologies for different cloud services.	CO1: To understand the fundamental principles of cloud computing and its model CO2: To apply concepts of IAAS, SASS, PAAS CO3: To develop business models that underlie Cloud Computing. CO4: To describe the importance of virtualization in

				distributed computing CO5: To analyse the importance of cloud security
19PG2IT10B	Multimedia Systems	Global	This course provides an introduction to multimedia systems, multimedia compression, and multimedia inform ation systems.	CO1: To identify and use the elements and principles of design in multimedia. CO2: To understand terminology associated with the concepts, techniques, and processes used throughout the multimedia environment. CO3: To Demonstrate an advanced knowledge of photo editing including: image manipulation, color correction, compositing, toning, and preparing for

				distribution. CO4: To explain the concepts of importing, exporting, effects, transitions, color correcting, and flow. CO5: To describe Image compression Standards
19PG2IT10C	Management Information System	Global	This course provides a formal discipline within business education that bridges the gap between information technology and organization.	CO1: To define an information system from both a technical and business perspective and distinguish between computer literacy and information systems literacy. CO2: To assess the relationship between the electronic commerce, electronic business and internet

				technology. CO3: To identify the major management challenges to building and using information systems in organizations. CO4: To understand managerial risks related to information system organization processing and utilizing CO5: To evaluate the benefits and limitations of enterprise systems and industrial networks.
19PG2IT11	Lab III : Java Programming	Global	This course provides programming skills on various concepts in	CO1: To understand the concept of Object Oriented Programming & Java

			JAVA.	Programming Constructs. CO2: To practice the concepts of operators, classes, objects, inheritance, packages, Enumeration and various keywords CO3: To apply exception handling mechanisms. CO4: To design the applications of Java & Java applet, Swings and JDBC CO5: To Analyze and implement server side programming using SERVLETS
19PG2IT12	Lab IV: Android Studio	Global	To Mobile User Interface (UI) Design is also essential in the	CO1: Develop enterprise-level mobile solutions.

			creation of Mobile Apps. mobile UI considers constraints, context, screen, input, and mobility as outlines for design	CO2: Install and configure Android application development tools CO3: Demonstrate Save State information across important operating system events CO4: Develop advanced application programs using Android CO5: Design and develop mobile applications
19IT2EDC	Animation Software	Global	To introduce the concept of 3D animation software	CO1: Explain the basic concepts in computer graphics. CO2: understand the Alice Environment CO3: Build a program in Alice.

				CO4: Apply event handlers CO5: Develop 3D animations
19PG3IT13	Digital image processing	Global	The course helps to create interest in image processing techniques and infuse research thirst in this area	CO1: Explain the representation of digital image and its manipulations CO2: Analyze image sampling and quantization requirements and implications CO3: Describe various Transformation and Filtering Techniques CO4: Demonstrate Restoration And Reconstruction models CO5: Utilize Image Compression And Segmentation for efficient storage

19PG3IT14	Python programming	Global	This course provides various techniques of Python Programming and help them to create effective programs in this language	CO1: To understand the structure and model of the python programming language. CO2: To explain the concepts of iterations CO3: To develop software implementing functions CO4: To design software List concepts CO5: To implement Exception handling
19PG3IT15A	Software testing	Global	To study fundamental concepts in software testing, planning a test project, design test cases and data,	CO1: Discuss various software application domains and different process model used in software development. CO2: Demonstrate the basics of

			conduct testing operations, manage software problems and defects, generate a testing report	software quality assurance and defect prevention. CO3: Compare different testing strategies and tactics. CO4: Apply the software testing techniques in commercial environment. CO5: Explain high performance testing using Jmeter.
19PG3IT15B	Data Mining and Data Warehousing	Global	Data Mining and Data Warehousing consists of introduction about data mining, data pre-processing, :mining frequent pattern, association, classification and	CO1: Explain the fundamental concept of Data Mining and analyze and evaluate the data cleaning, integration , transformation and reduction techniques CO2: Design multidimensional data using Data Warehouse

			cluster analysis and applications of data mining	architecture. CO3: Design and evaluate Classification algorithms CO4: Identify the types of data in Cluster Analysis and categorize the Cluster Methods CO5: Utilize the Data Mining techniques in various real applications and in major issues
19PG3IT15C	Linux Shell Programming	Global	To learn basics of shell programming and to develop programs that access files, to use signals, processes and threads	CO: Explain the fundamental concept of Shell Programming CO2: Understand the concepts of file management in Linux

				CO3: To learn the Linux environment, process and signal CO4: Identify the types of POSIX threads and terminals CO5: Utilize the facilities provided in the concept of text based screens
19PG3IT16A	Big Data Analytics	Global	Big Data Analytics includes Introduction to Big Data, Big Data Analytics, The Big Data Technology, Introduction to MAPREDUCE Programming: and Introduction to	CO1: Explain Characteristics and challenges of Big Data CO2: Describe Big Data Analytics CO3: Utilize Hadoop for Big Data Technologies CO4: Demonstrate MAPREDUCE Programming CO5: Describe types of

			Recommendation Engines.	Recommendation Systems using Big Data Analytics.
19PG3IT16B	Internet of things	Global	This Course provides knowledge of development cycle of IoT systems with sample systems. And explains the different sources needed with the integration process to build IoT systems	CO1: Explain the basic concepts of IoT CO2: Discuss physical and logical design of IoT enabled technologies CO3: Analyze how and where IoT can be applied CO4: Compare M2M and IoT CO5: Describe the features of Python used for IoT implementation
19PG3IT16C	Mobile Communication	Global	This course will give the students are able to acquire the	CO1: Understand the infrastructure to develop mobile communication

			knowledge about the technologies in mobile communication.	systems CO2: Know the characteristics of different multiple access techniques in mobile communication. CO3: Analyze the measures GSM systems and the entire protocol architecture of GSM. CO4: Understand the GPRS technologies and architecture for communication using Mobile Devices CO5: Monitoring the Security issues in Mobile Computing.

19PG3IT17	Lab V: Digital Image Processing Tool	Global	The course helps to create interest in image processing techniques and infuse research thirst in this area	CO1: Demonstrate Fundamental Steps involved in Digital Image Processing CO2: Analyze and use Mathematical Tools for Digital Image Processing CO3: Apply Intensity Transformation functions and Spatial filtering methods CO4: Utilise Colour Image Processing with different Colour Models CO5: Implement Image Segmentation Techniques and Image Compression Techniques using Huffman , Golomb and Arithmetic

				coding algorithms
19PG3IT18	Lab VI: Python Programming	Global	This course provides programming skills on various concepts in Python.	CO1: To understand the concept of Python Programming Constructs. CO2: To practice the concepts of operators, classes, objects, inheritance, packages ,Enumeration and various keywords CO3: To apply exception handling mechanisms. CO4: To design the applications of Java & Java applet, Swings and JDBC CO5: To Analyze and implement server side programming

				using SERVLETS
19PG3ITSI1	Summer Internship	GLOBAL	This program enables the students to gain knowledge in the implementation of concepts in real-time applications	CO1: Identify employment contacts leading directly to a full-time job following course completion CO2: Create communication, interpersonal and other soft skills essential for the job interview process CO3: Analyse the project requirements and engages in continuing professional development CO4: Analyze a problem and identify the computing requirements appropriate to its solution.

				CO5: Utilizing a new software tool.
19PG4IT19	Project Work & Viva Voce	Global	The students will carry out a project related to the area of interest and submit a project report at the end of the semester	CO1: Discuss project development and the associated business processes CO2: Plan as an individual or in a team in development of technical projects. CO3: Communicate with engineers and the community at large in written and oral forms. CO4: Create effective communication skills for presentation CO5: Analyse problems and formulate solutions

19PG4IT20	SSP : R-Programming	Global	This course provides various techniques of R- Programming and help them to create effective programs in this language	CO1: To understand the structure and model of the R-programming language. CO2: To explain the concepts of iterations CO3: To develop software implementing functions CO4: To design software Data set concepts CO5: To implement Exception handling