FATIMA COLLEGE (AUTONOMOUS), MADURAI – 625018

2021 - 2022

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 Outcomes (POs)

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
PO 5	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 (PSOs)

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 Outcomes (COs)

Course Code	Course Title	Nature of the Course (Local/National/ Regional/Global)	Course Description	Course Outcomes
21PG1IT1	Java & J2ME	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.
21PG1IT2	Soft Computing	Global	This course emphasizes learning various soft computing techniques.	CO1: Understand basic model in soft computing. CO2: Elaborate artificial neural network concepts. CO3: Be familiar with design of various neural networks. CO4: Understand genetic programming. CO5: Exposed to various hybrid systems.
21PG1IT3	Data Management	Global	This course provides an in-sight to learn and	CO1: To understand the basic concepts in R-

	using R Programming		understand the concepts of relational database management and its programming using R.	Programming. CO2: Illustrate various statements used in R-Programming. CO3: Analyze various techniques to import and export the data set. CO4: To know about the aggregate functions. CO5: Implementation of R-Programming in current scenario.
21PG1IT4	Distributed Operating Systems	Global	To understand the concept of design and implementation in the context of distributed operating systems.	CO1: Understand the core concepts of distributed systems. CO2: Analyze various message 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.
21PG1IT5	LAB I: Java &	Global	This course provides programming skills on	CO1: To understand the

	J2ME		various concepts in JAVA.	concept of Object Oriented Programming & 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 J2ME

21PG1IT6	LAB II : Data Management using R-Programming	Global	This course provides to understand the Data storage, management and organisation techniques	CO1: Implement Basic DDL, DML and DCL commands. CO2: Develop sub queries and 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. CO5: Develop PL/SQL program using triggers, cursors, exception handling etc.
21IT1EDC	Animation	Global	This course is designed to	CO1: Understand basic

	Software		facilitate different animation techniques in animation software.	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
21PG2IT7	Data Science	Global	This course emphasizes learning various concepts in data science.	CO1: Understand the fundamental concepts of data science. CO2: Evaluate the data analysis techniques for applications handling large data. CO3: Demonstrate the various machine learning

				algorithms used in data science process. CO4: Understand the ethical practices of data science. CO5: Learn to think through the ethics surrounding privacy, data sharing and algorithmic decision-making.
21PG2IT8	Digital Image Processing	Global	The course helps to create interest in image processing techniques and infuse research thirst in this area.	CO1: Understand 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.
21PG2IT9	Android Programming	Global	The primary goals will be design the next generation of mobile website, apps and other mobile interfaces across multiple platform such as	CO1: Design scripts to meet given interface and media control requirements. CO2: Utilize variables, properties and other code

			IOS, android, windows and mobile web.	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.
21PG2IT10	LAB III : Digital Image	Global	The course helps to create interest in image	CO1: Demonstrate Fundamental Steps

	Processing		processing techniques and infuse research thirst in this area.	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 Color Image Processing with different Color Models. O5: Implement Image Segmentation Techniques and Image Compression Techniques using Huffman , Golomb and Arithmetic coding

				algorithms.
21PG2IT11	LAB IV: Android Programming	Global	To Mobile User Interface (UI) Design is also essential in the creation of Mobile Apps. mobile UI considers constraints, context, screen, input, and mobility as outlines for design.	CO1: Develop enterprise-level mobile solutions. 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.
21PG2ITE1	Adhoc Network	Global	This course provides	CO1: Understand the

			architecture and protocols of ad hoc wireless networks.	design issues in ad hoc and sensor networks. CO2: Learn the different types of MAC protocols. CO3: Be familiar with different types of adhoc routing protocols. CO4: Be expose to the TCP issues in adhoc networks. CO5: Learn the architecture and protocols of wireless sensor networks.
21PG2ITE2	Machine Learning	Global	To Learn about Machine Intelligence and Machine Learning applications	CO1: Have a good understanding of the fundamental issues and challenges of machine

				learning concept. CO2: Understand, Analyse and identify the strengths and weaknesses of many popular machine learning approaches. CO3: Aware about the underlying mathematical relationships across Machine Learning algorithms and the paradigms of supervised and un-supervised learning. CO4: Ability to design and implement various machine learning

				algorithms in a range of real-world applications. CO5: Perform evaluation of machine learning algorithms and model selection.
21PG2ITE3	Cyber Security	Global	Cyber Security courses aims to equip students with the knowledge and skills required to defend the computer operating systems, networks and data from cyber-attacks.	CO1: Analyze and evaluate the cyber security needs of an organization. CO2: Measure the performance and troubleshoot cyber security systems. CO3: Comprehend and execute risk management processes, risk treatment

				methods, and key risk and performance indicators. CO4: Design and develop a security architecture for an organization. CO5: Design operational and strategic cyber security strategies and policies.
21IT2EDC	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
19PG3IT13	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 cluster analysis and applications of data mining.	CO1: Understand 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 architecture. CO3: Analyze 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.
19PG3IT14	Python Programming	Global	The course helps to create interest in image processing techniques and infuse research thirst in this area.	CO1: Understand the basic programming style in python. CO2: Apply various types of control flow statements in python programs. CO3: Identify the structure and components of a python program. CO4: Analyze Object oriented programming

				concepts and techniques in python. CO5: Implementing the GUI concepts in Python.
19PG3IT17	LAB V: Data Mining and Data Warehousing	Global	Data Mining and Data Warehousing consists of introduction about data mining, data warehousing, data pre-processing, :mining frequent pattern, association, classification and cluster analysis and applications of data mining.	CO1: Utilize Weka tool to evaluate Data Mining algorithms. CO2: Demonstrate pre processing steps involved in different datasets. CO3: Develop the decision tree algorithm using different datasets. CO4: Demonstrate the classification and clusters algorithms using large datasets.

				CO5: Analyze Data Mining techniques for realistic data.
19PG3IT18	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.
19PG3IT15A	Software Testing	Global	To study fundamental concepts in software	CO1: Discuss various software application

			testing, planning a test project, design test cases and data, conduct testing operations, manage software problems and defects, generate a testing report.	domains and different process model used in software development. CO2: Demonstrate the basics of 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	Digital Image Processing	Global	The course helps to create interest in image	CO1: Understand the representation of digital

			processing techniques and infuse research thirst in this area.	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.
19PG3IT15C	Linux Shell	Global	Linux shell programming	CO1: Understand the

	Programming		describes about the commands used to develop the concept of shell programming.	fundamental concept of Shell Programming. CO2: Analyze 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	CO1: Understand the Characteristics and challenges of Big Data. CO2: Describe the

			Technology, Introduction to MAPREDUCE Programming: and Introduction to Recommendation Engines.	concepts of Big Data Analytics. CO3: Utilize Hadoop for Big Data Technologies. CO4: Demonstrate MAPREDUCE Programming. CO5: Describe types of 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	CO1: Understand the basic concepts of IoT. CO2: Discuss physical and logical design of IoT enabled technologies. CO3: Analyze how and where IoT can be applied.

			build IoT systems	CO4: Compare M2M and IoT. CO5: Analyse the features of Python used for IoT implementation.
19PG3IT16C	Mobile Communication	Global	Mobile communication deals with the protocol and system to perform the data transfer through mobile devices.	CO1: To understand the basic concepts in Mobile communication. CO2: Analyze the concept of Medium Access control. CO3: Discuss concept of Satellite system. CO4: Explain the concepts of Wireless LAN. CO5: Apply the various support required for Mobility.

19PG3ITSI	Summer Internship	Global	It is a summer training programme undertaken by the students in a company of their choice. This is aimed to help them have an experience of the real time environment. It will act as a platform for the future placement. The students are mandated to complete one online course in the area of their interest. The students have to submit a report after the internship. This report will be assessed through	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: Analyze the project requirements and engages in continuing professional development. CO4: Analyze a problem and identify the

			a viva-voce internal exam.	computing requirements appropriate to its solution. CO5: Utilizing a new software tool.
19PG4ITPR	Project Work And Viva Voce	Global	The project will be of one semester duration. The students will be sent to different organizations involved in IT as per the interest and specialization of students, mostly located in the place of the study. They will have to carry out a project related to the area of interest and submit a project report at	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.

			the end of the semester. The students shall defend their dissertation in front of a panel of experts during the Viva-Voce examination.	CO4: Create effective communication skills for presentation. CO5: Analyse problems and formulate solutions.
19PG4IT19	R-Programming	Global	This Course provides knowledge of R-Programming and explains the different statements and functions used in R- Programming.	CO1: To understand the basic concepts in R-Programming. CO2: Illustrate various statements used in R-Programming. CO3: Analyze various techniques to import and export the data set. CO4: To know about the aggregate functions. CO5: Implementation of R-Programming in current scenario