AQAR – QUALITATIVE METRIC

2023 - 2024

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	Apply acquired scientific knowledge to solve major and complex issues in the society/industry
PO 2	Attain research skills to solve complex cultural, societal and environmental issues
PO 3	Employ latest and updated tools and technologies to solve complex issues.
PO 4	Demonstrate Professional Ethics that foster Community, Nation and Environment Building Initiatives.

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 Outcomes:

Course Code	Course Title	Nature Of The Course (Local/National /Regional/Global)	Course Description	Course Outcomes
23PG1I1	Python Programming	Global	This course introduces the Basic understanding on object oriented programming concepts.	CO 1: Explain the basic concepts in python language. CO 2: Apply the various data types and identify the usage of control statements, loops,

				functions and modules in python for processing the data CO 3: Analyze and solve problems using basic constructs and techniques of python. CO 4: Assess the approaches used in the development of interactive application. CO 5: To build real time programs using python
23PG1I2	Python Programming Practical	Global	This course introduces the Basic implementation python programming concepts.	CO 1: Understand the significance of control statements, loops and functions in creating simple programs.

				CO 2: Apply the core data structures available in python to store, process and sort the data CO 3: Analyze the real time problem using suitable python concepts CO 4: Assess the complex problems using appropriate concepts in python CO 5: Develop the real time applications using python programming language..
23PG1I3	Web Development Using Wordpress	Global	This course introduces the Basic understanding of	CO 1: Identify the tools which will be suitable for the

			HTML & CSS concepts along with Word Press.	requirement of the webpage. CO 2: Implement Java script and Style Sheets effectively in the Web Pages CO 3: Analyze the different tools and built-in functions available to be applied inthe webpage CO 4: Rate the design and effectiveness of the Web Pages created. CO 5: Design and publish a website using Wordpress
23PG1IAE	Image Editing And Animation	Global	This course content is enables other	CO 1: Design and edit images using image-

			disciplined students to strengthen and increase the understanding of basis Image editing and Animation software like Photoshop and Alice3.	editing tool. CO 2: Apply layer features for creating images for web and print. CO 3: Build program in Alice using looping and branching. CO 4: Apply event handlers in alice. CO 5: Develop 3D animations.
23PG1IE1	Data Structures	Global	This course introduces Basic understanding of programming and foundational concepts in data	CO1: To understand the concept of Object Oriented Programming & Java Programming Constructs. CO2: To practice the

			structures.	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
23PG1IE2	Natural Language Processing	Global	This course provides to understand the Data storage, management and organisation	CO1: Implement Basic Data Access, List CO2: Develop programs using Array, function. CO3: Use Linear

			techniques	Regression and ANOVA CO4: Understand Graphical Configurations. CO5: Develop program using simulation and statistical method.
23PG1IE3	Operating Systems	Global	This course introduces the Basic understanding of working principles of computer and about hardware and software components.	CO 1: Outline the fundamental concepts of an OS and their respective functionality CO 2:Demonstrate the importance of open-source operating system commands CO 3: Identify and stimulate management activities of operating system

				CO 4: Analyze the various services provided by the operating system CO 5: Interpret different problems related to process, scheduling, deadlock, memory and files
23PG1IE4	Human Computer Interaction	Global	This course introduces the basic understanding of the impact of human factors and Computer Science fundamentals.	CO 1: Describe typical human–computer interaction (HCI) models, styles, and various historic HCI paradigms CO 2: Identify the usability and the beneficiary factors of User support systems CO 3: Analyze the core

				theories, models and methodologies in the field of HCI CO 4: Evaluate interactive systems based on the human factor theories CO 5: Elaborate an interactive system based on the design principles, standards and guidelines
23PG2I4	Database Systems	Global	Fundamental computer knowledge that includes the hardware and memory storage.	CO 1: Explain the relational databases and uses of PL/SQL CO 2: Apply Schema, ER-Model, normalization, transaction, concurrency, and recovery on tables

				using SQL and PL/SQL. CO 3: Analyze and manage relational & distributed, database, transaction, Concurrency control and query languages CO 4: Assess databases based on models and Normal Forms. CO 5: Design and construct tables and manipulate it effectively using PL/SQL database objects
23PG2I5	Rdbms Lab	Global	Basic understanding of SQL queries	CO 1: Understand the significance of control statements, loops and

				functions in creating simple programs. CO 2: Apply the core data structures available in SQL to store, process and sort the data CO 3: Analyze the real time problem using suitable SQL concepts CO 4: Assess the complex problems using appropriate concepts in SQL CO 5: Develop the real time applications using programming language.
23PG2I6	Open Source Technologies Practical	Global	Basic understanding of computer	CO 1: Demonstrate the setup and configuration

			programming, Internet and HTML/	of development environment to write PHP and Ruby Scripts CO 2: Select the appropriate language fundamentals and techniques to write and compile PHP and Ruby programs CO 3: Examine the bugs and analyze how to prevent and remove the bugs CO 4: Test and debug the application with sample inputs to check the correctness and consistency of the scripts

				CO 5: Create simple programs that make use of various PHP and Ruby features and Functions and solve web application and database tasks using PHP
23PG2IAE	E-Commerce And Content Management Systems	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.	CO 1: Describe fundamentals of web. Introduce the creation of static webpage using HTML. CO 2: Describe the importance of CSS in web development CO 3: Describe the function of JavaScript as a dynamic webpage

				creating tool CO 4: Distinguish PHP as a server side programming language CO 5: Outline the principles behind using MySQL as a backend DBMS with PHP
23PG2IE5	Networks And Security	Global	Basic knowledge about computer networks	CO 1: Outline the basic data structures CO 2: Identify the different operations and memory representations CO 3: Interpret different techniques with their complexities CO 4: Compare the applications of various

				data structures CO 5: Choose an algorithm to solve simple problems suited for appropriate situations
23PG2IE6	Biometric Techniques	Global	This course introduces the Basic knowledge of computer vision and cyber security concepts	CO 1: Outline the existing theories, methods and interpretations in the field of biometrics CO 2: Identify the deployment areas, competing technologies, strength and weakness of various Physiological and Behavioral Biometrics CO 3: Analyze various Application areas,

				Biometric security issues and Biometric standards CO 4: Assess the methods relevant for design, development and operation of biometric access control systems CO 5: Determine identification /verification systems to validate the user identity and technological uplifts in biometrics compared to traditional securing mechanisms
23PG2IE7	Object Oriented Analysis And	Global	This course introduces Basic	CO1: Recognize the concepts and principles

	Design		understanding of one of the object-oriented programs	of object-oriented analysis, design and Testing CO2: Demonstrate the importance of system development process using various approaches and choose the relevant technique for a system in each phases of SDLC CO3: Differentiate various object-oriented analysis, design and testing methods and models. CO4:Assess various analysis, design and testing strategies

				appropriate to build high-performance object-oriented system CO5: Design Object oriented systems using object modelling techniques and analyze them for correctness and quality
23PG2IE8	Software Project Management	Global	Basic knowledge about the fundamentals of software project development	CO1:Understanding of project management fundamentals such as project planning, risk management and quality assurance CO2:Choose the appropriate scheduling and testing techniques to

				build a quality product CO3:Apply different cost estimation techniques and quality measures for software development CO4:Differentiate various software development models and methodologies, planning activities and scheduling methods CO5:Asses the importance of software project documentation and identify the methods to create project documentation, including requirements documents,

				design documents, and project plans
21PG3IT12	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.
21PG3IT13	Advanced 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.
21PG3IT14	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.
21PG3IT15	Lab Vi: Advanced 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.
21PG3ITE4	Software Testing	Global	To study fundamental	CO1: Discuss various software application

			concepts in software 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.
22PG3ITE5	System Software & Compiler Design	Global	The course helps to create interest in	CO1: Interpret the concepts of system

			image processing techniques and infuse research thirst in this area.	software and machine architecture. CO2: Identify the concepts of loader and linkers CO3: Analyse the concepts of working principles of compilers. CO4: Experiment Finite Automata for regular expressions. CO5: Simplify the expressions using Parser.
21PG3ITE6	Computer Forensics	Global	Linux shell programming describes about the commands used to develop the concept	CO1: Understand basic concepts in Computer forensics. CO2: Explain different investigation procedures.

			of shell programming.	CO3: Understand different Data acquisition mode. CO4: Understand investigation process using computer forensics. CO5: Know how to apply forensic analysis tools to recover important evidence for identifying computer crime
21PG3ITE7	Big Data Analytics	Global	Big Data Analytics includes Introduction to Big Data, Big Data Analytics, The Big Data Technology, Introduction to	CO1: Understand the Characteristics and challenges of Big Data. CO2: Describe the concepts of Big Data Analytics. CO3: Utilize Hadoop for

			MAPREDUCE Programming: and Introduction to Recommendation Engines.	Big Data Technologies. CO4: Demonstrate MAPREDUCE Programming. CO5: Describe types of Recommendation Systems using Big Data Analytics.
21PG3ITE8	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: 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. CO4: Compare M2M and IoT.

				CO5: Analyse the features of Python used for IoT implementation.
22PG3ITE9	Algorithm Design And Analysis	Global	This course introduces basic methods for the design and analysis of efficient algorithms emphasizing methods useful in practice.	CO1: To understand the basic concepts of analysis. CO2: Analyze the concept of various searching and traversal techniques. CO3: Discuss concept of dynamic programming and greedy method. CO4: Explain the concepts of Backtracking, branch and bound methods CO5: Apply the algorithm for NP-Hard and NP-

				complete problems.
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	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 computing requirements appropriate to its

			their interest. The students have to submit a report after the internship. This report will be assessed through a viva-voce internal exam.	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	CO1: Discuss project development and the associated business processes. CO2: Plan as an individual or in a team in development of technical projects.

			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 the end of the semester. The students shall defend their dissertation in front of a panel of experts during the Viva-Voce examination.	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.
21PG4IT16	Biometrics	GLOBAL	This Course provides	CO1: To understand the

			knowledge of R-Programming and explains the different statements and functions used in R-Programming.	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