PROGRAMME OUTCOMES AND COURSE OUTCOMES

2021 – 2022

Name of the Programme: B.Sc INFORMATION TECHNOLOGY **PROGRAMME CODE: USIT**

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.

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.
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	Course Outcomes
21I1CC1	Programming In C	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.
21I1CC2	LAB IN C PROGRAMMING	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**	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++**	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++**	CO1: Implement an achievable practical application on object-oriented 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**	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**	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**	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**	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**	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. CO5:Demonstrate presentations with narration and images.
19I4CC7	**PROGRAMMING IN JAVA**	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**	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**	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**	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**	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.
19I5CC10	**LAB V: .NET PROGRAMMING**	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**	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.
19I5CC12	**DATA COMMUNICATION AND NETWORKING**	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.
19I5ME1	**DATA MINING CONCEPTS**	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**	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**	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**	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**	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**	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.
19I6CC15	**INFORMATION STORAGE AND MANAGEMENT**	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**	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**	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**	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**	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**	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**	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.