PROGRAMME OUTCOMES

PO 1 : Ability to apply knowledge in mathematics, science fundamentals to solve problems.

PO 2 : Understand the basic concepts of system software, hardware and computer graphics.

PO 3 : Design, and analyse precise specifications of algorithms, procedures, and interaction behaviour.

PO 4 : Apply the technologies in various fields of IT, including Mobile applications, Website development and management, databases, and computer networks.

PO 5 : Ability to Work in teams as well as individuals to build software systems and to use a range of programming languages and tools to develop computer programs to solve problems effectively.

PO 6 : Ability to communicate effectively in both verbal and writing form in industry and society.

PO 7 : Ability to select appropriate techniques to tackle and solve problems in the discipline of information security management.

COURSE OUTCOMES

Semester I	
Course name	**Course outcomes**
Programming Principles with C (USIT101)	CO 1: Learn the basic principles of programming. CO 2: Develop of logic using algorithm and flowchart. CO 3: Acquire the information about data types. CO 4: Understanding of input and output functions. CO 5: Enhance advanced concepts using program. CO 6: Develop Applications.
Digital Logic and Applications (USIT102)	CO 1: Apply number conversion techniques in real digital systems CO 2: Solve boolean algebra expressions CO 3: Derive and design logic circuits by applying minimization in SOP and POS forms CO 4: Design and develop Combinational and Sequential circuits CO 5: Understand and develop digital applications
Fundamentals of Database Management Systems (USIT103)	CO 1: Define and describe the fundamental elements of relational database management system. CO 2: To relate the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL. CO 3: Design ER-models to represent simple database application scenarios. CO 4: Transform the ER-model to relational tables, populate relational database and formulate SQL queries on data. CO 5: Improve the database design by normalization. CO 6: Understand basic database storage structures and access techniques: file and page organizations, indexing methods and hashing.
Computational Logic and Discrete Structures (USIT104)	CO 1: Use logical notation CO 2: Perform logical proofs CO 3: Apply recursive functions and solve recurrence relations CO 4: Use graphs and trees CO 5: Apply basic and advanced principles of counting CO 6: Define sets and Relations CO 7: Calculate discrete probabilities.
Technical Communication Skills (USIT105)	CO 1: Analyse, synthesize and utilize the process and strategies from delivery to solving communication problem. CO 2: Learn the communication methodologies at workplace and learning about importance of team collaboration. CO 3: Learn about different technical communication such as presentations and interviews.

	CO 4: Understand and apply the art of written communication in writing reports, proposals.
	CO 5: Ground rules of ethical communication and MIS.
	CO 6: Understand the functions of graphs, maps, charts.

Semester II	
Course name	**Course outcomes**
Object Oriented Programming with C++ (USIT201)	CO 1: Understand the concept of OOPs, feature of C++ language.
	CO 2: Understand and apply various types of Datatypes, Operators, Conversions while designing the program.
	CO 3: Understand and apply the concepts of Classes &Objects, friend function, constructors & destructors in program design.
	CO 4: Design & implement various forms of inheritance, String class, calling base class constructors.
	CO 5: Apply & Analyse operator overloading, runtime polymorphism, Generic Programming.
	CO 6: Analyse and explore various Stream classes, I/O operations and exception handling.
Fundamentals of Micro Processor and Microcontrollers (USIT202)	CO 1: Understand the basic concepts of Micro Computer Systems
	CO 2: Understand the architecture and hardware aspects of 8085
	CO 3: Write assembly language programs in 8085
	CO 4: Design elementary aspects of Micro Controller based systems
	CO 5: Interfacing peripherals using Micro Controller
Web Applications Development (USIT203)	CO 1: Analyse working of Internet.
	CO 2: Gain an insight into designing web pages.
	CO 3: Use different ways of styling web pages using CSS.
	CO 4: Implement basic and complex functionalities of JavaScript in a web page.
	CO 5: Employ PHP Scripts to execute dynamic tasks in a web page.
	CO 6: Perform various database tasks using PHP.
Numerical Methods (USIT204)	CO 1: Understand numerical techniques to find the roots of non-linear equations and solution of system of linear equations.
	CO 2: Understand the difference operators and the use of interpolation.
	CO 3: Understand numerical differentiation and integration and numerical solutions of ordinary and partial differential equations.
Green IT (USIT205)	CO 1: Understand the concept of Green IT and problems related to it.
	CO 2: Know different standards for Green IT.
	CO 3: Understand the how power usage can be minimized in Technology.
	CO 4: Learn about how the way of work is changing.

| | CO 5: Understand the concept of recycling. |
| | CO 6: Know how information system can stay Green Information system. |

Semester III	
Course name	**Course outcome**
Python Programming (USIT301)	CO 1: To understand Basics of Python programming CO 2: Describe the numbers, Math functions, Strings, List, Tuples, & Dictionaries in Python. CO 3: To learn how to design and program Python applications. CO 4: To learn how to use lists, tuples, and dictionaries in Python programs. CO 5: To learn how to identify Python object types. CO 6: To learn how to use indexing and slicing to access data in Python programs. CO 4: To learn decision making statements in python. CO 5: Understand the different file handling operations. CO 7: Design and develop client server network applications using python.
Data Structures (USIT302)	CO 1: Select appropriate data structures as applied to specified problem definition. CO 2: To Implement operations like searching, insertion, and deletion, traversing mechanism on various data structures. CO 3: To Implement appropriate sorting/searching techniques for given problems. 4: To Design advance data structure using nonlinear data structure like hashing and graph. CO 5: Determine and Analyse the complexity of given Algorithms
Computer Networks (USIT303)	CO 1: Understand the basic protocols of computer networks, and how they can be used to assist in network design and implementation. CO 2: Understand the concept of subnetting and routing mechanisms in network configuration. CO 3: Familiarize the student with the basic taxonomy and terminology of the comp CO 4: Design and setup a simple organization network using packet tracer simulator. CO 5: To understand a theoretical concepts of data communication and computer networks CO 6: Built and understanding of the fundamental concepts of computer networking.
Database Management Systems (USIT304)	CO 1: To identify the basic concepts and various data model used in database design, modelling concepts and architecture CO 2: To understand designing of relational model and applying normalization steps and to demonstrate use of the relational algebra

	and calculus operations from mathematical set theory (union, intersection, difference, and Cartesian product) and the relational algebra operations developed specifically for relational databases (select (restrict), project, join, and division). CO 3: The learner will be able to execute SQL queries for defining and manipulating database information. CO 4: To understand transaction management, concurrency control techniques and data recovery methods. CO 5: To identify the extensions that PL/SQL offers to SQL. CO 6: Demonstrate basic PL/SQL code using programming constructs and control statements and to apply advanced concepts like triggers , cursors , stored procedures
Applied Mathematics (USIT305)	CO 1: To enable learners to apply the matrix techniques to reduce the quadratic forms to canonical forms, finding solutions of systems of linear equations in the different areas of Linear Algebra. CO 2: Enable learners to perform basic operations to understand geometric interpretation, to find the nth root and logarithm of complex numbers CO 3: Enable learners to apply various methods of the differential equation to solve first-order linear and higher order ODE and its applications to various fields CO 4: Enable learners to apply Laplace transform to determine general or complete solutions to linear ODE applications
Semester IV	
Course name	**Course outcome**
Core Java (USIT401)	CO 1: To study and use of various object oriented features in java programming language. CO 2: To understand the importance of Classes &objects along with constructors, Data Types. CO 3: To understand the concept of inheritance, interface and packages and demonstrate through problem analysis assignments how they relate to the design of methods, abstract classes and interfaces and packages. CO 4: Understand the different Control Flow Statements, Iterations to implement looping in the programs. CO 5: To understand the importance of multi-threading, different exception handling mechanisms, Arrays and Byte Stream Classes. CO 6: To learn experience of designing, implementing, testing, and debugging graphical user interfaces in Java using AWT that respond to different user events.

Course name	Course outcome
Introduction to Embedded Systems (USIT40)	CO 1: To Understand embedded system concepts and architecture of embedded systems CO 2: Understand the concepts of Microcontroller and microprocessor architecture. CO 3: Describe the architecture of 8051 microcontroller and write embedded program for 8051 microcontroller. CO 4: Design the interfacing for 8051 microcontroller. CO 5: The learner will be able to analyse various embedded system techniques.
Computer Oriented Statistical Techniques (USIT403)	CO 1: Enable learners to know descriptive statistical concepts CO 2: Enable study of probability concept required for computer learners, Concept about Samples, Sampling theory, Calculating statistics and probability from samples. CO 3: To gain insight into consequences of plan by probability techniques and processing samples. CO 4: Enable learners to measure experimental results based on hypothesis using chi square techniques CO 5: To learn techniques correlating the relationship between multiple variables
Software Engineering (USIT404)	CO 1: Knowledge of basic SW engineering methods and practices, and their appropriate application. CO 2:To understand Layered technology and Process frame work Describe software engineering. CO 3: A general understanding of software process models such as the waterfall and evolutionary models. CO 4: Understanding of software requirements and the SRS documents. CO 5: The learner will be able to write software project synopsis and design UML diagrams. CO 6: Understanding of the role of project management including planning, scheduling, risk management, etc.
Computer Graphics and Animation (USIT405)	CO 1: To identify and the use of components and basic concepts of graphics systems. CO 2: To implement various algorithms to scan, convert the basic geometrical primitives, transformations, Area filling, clipping. CO 3: To describe the importance of viewing and projections. CO 4: To define the fundamentals of animation, virtual reality and its related technologies. CO 5: To understand a typical graphics pipeline CO 6: The learner will be able to create graphics and animations
Semester V	
Course name	**Course outcome**
Software Project Management (USIT501)	CO 1: Define various software application domains and remember different process model used in software development.

	CO 2: Explain needs for software specifications also they can classify different types of software requirements and their gathering techniques. CO 3: Convert the requirements model into the design model and demonstrate use of software and user interface design principles. CO 4: Distinguish among SCM and SQA and can classify different testing strategies and tactics and compare them. CO 5: To understand the role of SDLC in Software Project Development. CO 6: Generate project schedule and can construct, design and develop network diagram for different type of Projects.
Internet of Things (USIT502)	CO 1: To understand the basic concept of Internet of Things and apply design principles for connected devices with the help of different protocol suites. CO 2: To identify the different technologies of IOT CO 3: To understand steps for prototyping embedded platforms. CO 4: To identify techniques for writing embedded code and understand different business models. CO 5: To understand manufacturing activities and ethical concerns to be considered while designing IOT applications.
Advanced Web Programming (USIT503)	CO 1: Learn about the MS.NET framework developed by Microsoft. CO 2: Use the features of .NET Framework along with the features of C#. CO 3: Be able to understand use of C# basics, Objects and Types, Inheritance. CO 4: Create Web forms and use Web controls. CO 5: Design the web pages using Styles, Themes, and Master Pages. CO 6: Make use of ADO .Net for Application and Database Connectivity. CO 7: To design the web application by using XML, AJAX with collaborating Security aspects.
Linux System Administration (USIT504)	CO 1: Learner will be able to develop Linux based systems and maintain. CO 2: Learner will be able to install appropriate service on Linux server as per requirement. CO 3: Learner will have proficiency in Linux server administration.

Enterprise JAVA (USIT506)	CO 1:To understand the concept of and develop applications using servlets and database connectivity. underrstand Enterprise Application and demonstrate working with servlets. CO 2: Identify advanced concepts of java programming with database connectivity. CO 3: Design and develop platform independent applications using a variety of component based frameworks CO 4: To understand the concepts of persistence, Hibernate and develop JPA applications, Hibernate applications. CO 5: To understand the concept of and design applications using Java server pages

Semester VI	
Course name	**Course outcomes**
Software Quality Assurance (USIT601)	CO 1: Understand the importance of Software Project Management. CO 2: Implement Project Evaluation and Programme Management along with Project Planning. CO 3: Estimate the cost of Software and its process and to understand principles behind testing software and why software should be tested. CO 4: Understand testing processes and be able to identify when to begin testing during the software development lifecycle. CO 5: Understand the verification and validation processes of testing.
Security in Computing (USIT602)	CO 1: To understand the various communications networks and their main components. CO 2: Develop a networking plan for yourself or a client. 3. Distinguish and explain the concepts of: authentication; authorization, and attacks. CO 4: Identify the function of a firewall, and how it keeps a computer secure and safe from viruses. CO 5: Prepare a security plan for organization. CO 6: To understand the Intrusion detection and prevention, concepts of VoIP, Operating systems models
Business Intelligence (USIT603)	CO 1: To make student familiarize with concepts and various mathematical model related to business intelligences and decision support systems. CO 2: To demonstrate concept of decision making process and decision support system CO 3: Demonstrate an understanding of the importance of data mining and the principles of business intelligence CO 4: To demonstrate the concept of classification and clustering of data and to also make students familiarize with various methods for classification and clustering. CO 5: To understand data warehouses, design methods (dimension modeling), data extracting, transforming and loading processes and OLAP systems.

	CO 6: To demonstrate the knowledge management and role of people in knowledge management CO 7: To demonstrate the Concepts and Definitions of Artificial Intelligence and Expert systems.
Principles of Geographic Information Systems (USIT604)	CO 1: To understand the nature of GIS and to identify geographic information phenomena and demonstrate the concept of Spatial database and temporal dimensions. CO 2: To understand stages of spatial data handling and to illustrate the concept of spatial databases. CO 3: To apply mathematical concepts, including statistical methods, to data to be used in geospatial analysis CO 4: To classify spatial data analysis capabilities. CO 5: To describe and apply data visualization techniques.
IT Service Management (USIT606)	CO 1: To understand the principles of IT service management. CO 2: To understand the important processes of IT service management. CO 3: Demonstrate the comprehension of a framework of IT service management. CO 4: Discuss the roles involved in IT service management. CO 5: To Analyse an IT service organization in terms of processes and functions.