Department of B.Sc(Information Technology)

Program Outcome(POs)

PO1: Knowledge:- Learners will acquire fundamental knowledge of how to programme computers

PO2: Skills:-Students will develop their IT skills, have a better understanding of global issues, and be introduced to innovative directions in Information Technology

PO3: Modern Tools Usage:- Using different software development tools can develop projects as per user requirements and produce computer programmes in a variety of languages.

PO4:Creativity & Analysis:- Design, develop, and test software systems for a vast computer network to provide solutions for problems in the real world.

PO5:Communication:-
Students will develop their personalities as well as their managerial, research, analytical, and commercial skills via the study of both theoretical and practical information technology topics.

PO6:Ethics & Environment:-
Students will receive training in social responsibility and leadership with an emphasis on the environment and sustainability.

PO7:Individual & Team Work :- In a multidisciplinary team, perform well as a leader or team member to achieve a common goal.

PO8:Self-directed and Life-Long learning:- Participate in independent, lifelong learning to advance your career.

Programme Specific Outcomes (PSO)

PSO-1	Apply your understanding of mathematics, digital electronics and computing to the fundamentals of information technology.
PSO-2	Learn basic concepts of hardware, networking, databases and software programming languages like C, C++, Python, Java, HTML, JavaScript, PHP, .NET etc.
PSO-3	Utilizing the principles of human-computer interaction and machine learning techniques, design and construct interactive and intelligent systems.

Course Outcomes (CO)

SEMESTER-I

COURSE CODE: USIT101
COURSE NAME: Programming Principles with C

After successful completion of this course, students will be able to:	
CO-1	Learn the basic principles of programming.
CO-2	Develop logic using algorithms and flowchart.
CO-3	Acquire the information about data types.
CO-4	Understanding of input and output functions.
CO-5	Enhance advanced concepts using programs.

COURSE CODE: USIT1P1
COURSE NAME: Programming Principles with C Practical

After successful completion of this course, students will be able to:	
CO-1	Develop applications
CO-2	Work with textual information, characters and strings
CO-3	Understand of a functional hierarchical code organization
CO-4	Debug the program
CO-5	Understand the differences between syntax errors, runtime errors, and logic errors

COURSE CODE: USIT102
COURSE NAME: Digital Logic and Applications

After successful completion of this course, students will be able to:	
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

COURSE CODE: USIT1P2
COURSE NAME: Digital Logic and Applications Practical

After successful completion of this course, students will be able to:	
CO-1	Construct basic and universal logic circuits.
CO-2	Verify the functionalities of various IC's.
CO-3	Design circuits using K-maps minimization technique
CO-4	Design and test Encoders, Decoders, Multiplexers and Demultiplexers
CO-5	Design and develop logic for Registers, Counters and its applications.

COURSE CODE:USIT103
COURSE NAME: Fundamentals of Database Management Systems

After successful completion of this course, students will be able to:	
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.

COURSE CODE:USIT1P3
COURSE NAME: Fundamentals of Database Management Systems Practical

After successful completion of this course, students will be able to:	
CO-1	Design database schema for a given application and apply normalization
CO-2	Acquire skills in using SQL Commands for data Definition and data manipulation

COURSE CODE: USIT104
COURSE NAME: Computational Logic and Discrete Structures

After successful completion of this course, students will be able to:	
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

COURSE CODE: USIT1P4
COURSE NAME: Computational Logic and Discrete Structures Practical

After successful completion of this course, students will be able to:	
CO-1	To find computational solution to various discrete mathematical structures

COURSE CODE: USIT105
COURSE NAME: Technical Communication Skills

After successful completion of this course, students will be able to:	
CO-1	Analyze, 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.

COURSE CODE: USIT1P5
COURSE NAME: Technical Communication Skills Practical

After successful completion of this course, students will be able to:	
CO-1	Use different forms of digital mediums for effective communication.
CO-2	Create technical documents and format existing documents for effective communication
CO-3	Learn to use graphical tools for better visualization.
CO-4	Create business presentation effectively
CO-5	Visualize the data from pictorial representations

SEMESTER-II

COURSE CODE: USIT201
COURSE NAME: Object Oriented Programming with C++

After successful completion of this course, students will be able to:	
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 & Analyze operator overloading, runtime polymorphism, Generic Programming
CO-6	Analyze and explore various Stream classes, I/O operations and exception handling.

COURSE CODE:USIT2P1
COURSE NAME: Object Oriented Programming with C++ Practical

After successful completion of this course, students will be able to:	
CO-1	Utilize C++ characteristics in software design and development.
CO-2	Explain object-oriented techniques and explain how C++ supports them
CO-3	Employ C++ to demonstrate practical skill developing object-oriented solutions.
CO-4	Examine a problem statements and design and develop object-oriented software using good coding practices and procedures.

CO-5	In object-oriented design, use common software patterns and recognize their relevance in other software development contexts

COURSE CODE: USIT202
COURSE NAME: Fundamentals of Micro Processor and Microcontrollers

After successful completion of this course, students will be able to:	
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

COURSE CODE: USIT2P2
COURSE NAME: Fundamentals of Micro Processor and Microcontrollers Practical

After successful completion of this course, students will be able to:	
CO-1	Apply concepts of 8085 to single & Multiple Memory Locations
CO-2	Apply concepts of micro-processor register operations
CO-3	Can implement assembly language programs
CO-4	Use of Shift registers 8 & 16 bits
CO-5	Apply the knowledge of Flash Magic in embedded Controllers
CO-6	Learns to simulate and configure different timer controls

COURSE CODE: USIT203
COURSE NAME: Web Applications Development

After successful completion of this course, students will be able to:	
CO-1	Analyze the working of the Internet.
CO-2	Gain an insight into designing web pages.
CO-3	Implement basic and complex functionalities of JavaScript in a web page.
CO-4	Employ PHP Scripts to execute dynamic tasks in a web page.
CO-5	Perform various database tasks using PHP.
CO-6	Use different ways of styling web pages using CSS

COURSE CODE: USIT2P3
COURSE NAME: Web Application Development Practical

After successful completion of this course, students will be able to:	
CO-1	Design static web pages using HyperText Markup Language (HTML)
CO-2	Enhance the look of web pages by implementing CSS.
CO-3	Collect information from the user with HTML Forms.
CO-4	Design interactive web pages using client-side script (JavaScript).
CO-5	Implement Document Object Model and events in web pages using JavaScript.
CO-6	Write and deploy basic PHP code to simplify web development.
CO-7	Store and retrieve data from a server using PHP.

COURSE CODE: USIT204
COURSE NAME: Numerical Methods

After successful completion of this course, students will be able to:	
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

COURSE CODE: USIT2P4
COURSE NAME: Numerical Methods Practical

After successful completion of this course, students will be able to:	
CO-1	Find fast and accurate solution to simple and complex numerical problems using these programs.

COURSE CODE: USIT205
COURSE NAME: Green IT

After successful completion of this course, students will be able to:	
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

COURSE CODE: USIT2P5
COURSE NAME: Practical's in PL/SQL

After successful completion of this course, students will be able to:	
CO-1	Understand the basics of PL/SQL.
CO-2	Use of the control and conditional statement in PL/SQL.
CO-3	Apply sequences and cursor in PL/SQL.
CO-4	Know the concept of stored procedure and functions Create the triggers and packages in PL/SQL.
CO-5	Perform various database tasks using PHP.
CO-6	Implement the concept of Exception handling

SEMESTER-III

COURSE CODE: USIT301
COURSE NAME: PYTHON PROGRAMMING

After successful completion of this course, students will be able to:-	
CO-1	Aware of the variables, expressions, looping and conditions used in Python programming.
CO-2	Implement functions, strings, lists, tuples and directories
CO-3	Create GUI forms and add widgets.
CO-4	Use MySQL to store data.
CO-5	Apply the programming skillset learnt here into various domains by having advance programming skillset of Python and usage of libraries.

COURSE CODE: USIT302
COURSE NAME: DATA STRUCTURES

After successful completion of this course, students will be able to:-	
CO-1	Identify and distinguish data structure classification, data types, their complexities
CO-2	Implement array, linked list, stack and queue.
CO-3	Implement trees, various hashing techniques and graph for various applications

CO-4	Compare various sorting and searching techniques

COURSE CODE: USIT303
COURSE NAME: COMPUTER NETWORKS

After successful completion of this course, students will be able to:-	
CO-1	Identify various data communication standards, topologies and terminologies
CO-2	Describe how signals are used to transfer data and communication aspects between nodes
CO-3	Configure IP addresses using TCP/IP protocol suite
CO-4	Use different application layer protocols

COURSE CODE: USIT304
COURSE NAME: OPERATING SYSTEMS

After successful completion of this course, students will be able to:	
CO-1	Role of Operating System Computer System.
CO-2	Use the different types of Operating System and their services.
CO-3	configure process scheduling algorithms and synchronization techniques to achieve better performance of a computer system.
CO-4	Apply virtual memory concepts.
CO-5	Effectively use and manage secondary memory.

COURSE CODE: USIT305
COURSE NAME: APPLIED MATHEMATICS

After successful completion of this course, students will be able to:-	
CO-1	Solve the matrix operations, identify the linear dependence and independence of a vectors.
CO-2	Familiar with the various forms and operations of a complex number.
CO-3	Apply the Set theory and Relation concepts & Functions and define the recursive functions.
CO-4	Evaluate the multiple integrals in Cartesian, Polar coordinates, change the order of the integral.
CO-5	Apply integration methods to calculate the areas and volumes of solids.

CO-6	Evaluate the Beta, Gamma, Differentiation Under integral sign and error functions

SEMESTER IV

COURSE CODE: USIT401
COURSE NAME: CORE JAVA

After successful completion of this course, students will be able to:	
CO-1	Learn the architecture of Java
CO-2	Identify data types, control flow, classes, inheritance, exceptions and event handling
CO-3	Use object-oriented concepts for problem solving real-life applications
CO-4	Build GUI programs
CO-5	Create event driven programs using java.

COURSE CODE: USIT402
COURSE NAME: INTRODUCTION TO EMBEDDED SYSTEMS

After successful completion of this course, students will be able to:	
CO-1	Differentiate between general purpose and embedded systems
CO-2	Discuss the characteristics and quality attributes of embedded systems
CO-3	Use different types of sensors for appropriately
CO-4	Design and develop embedded systems

COURSE CODE: USIT403
COURSE NAME: COMPUTER ORIENTED STATISTICAL TECHNIQUES

After successful completion of this course, students will be able to:	
CO-1	To calculate and apply measures of central tendencies and measures of dispersion grouped and ungrouped data cases.
CO-2	To calculate the moments, skewness and kurtosis by various methods.
CO-3	How to apply discrete and continuous probability distributions to various business problems.
CO-4	Perform Test of Hypothesis as well as calculate confidence interval for a population parameter for single sample and two sample cases. Understand the concept of p-values.
CO-5	Apply simple linear regression and correlation model to real life examples.

COURSE CODE: USIT404
COURSE NAME: SOFTWARE ENGINEERING

After successful completion of this course, students will be able to:	
CO-1	Understand software engineering.
CO-2	Apply software engineering principles
CO-3	Discuss various approaches to verification and validation of software including testing, measurements and estimation of software products
CO-4	Create software using different software development models

COURSE CODE: USIT405
COURSE NAME: COMPUTER GRAPHICS AND ANIMATIONS

After successful completion of this course, students will be able to:	
CO-1	Understand the basics of computer graphics, different graphics systems and applications of computer graphics
CO-2	Compare various algorithms for scan conversion and filling of basic objects
CO-3	Use of geometric transformations on graphics objects and their application in composite form.
CO-4	Extract scene with different clipping methods and its transformation to graphics display device.
CO-5	Explore projections and visible surface detection techniques for display of 3D scene on 2D screen.
CO-6	Render projected objects to naturalize the scene in 2D view and use of illumination models.
CO-7	Understand the core concepts and mathematical foundations of computer graphics
CO-8	Know the fundamental computer graphics algorithms and data structures
CO-9	Understand an overview of different modeling approaches and methods
CO-10	Apply basic shading and texture mapping techniques
CO-11	Understand light interaction with 3D scenes

CO-12	Explain the applications, areas, and graphic pipeline, display and hardcopy technologies.
CO-13	Apply and compare the algorithms for drawing 2D images also explain aliasing, anti-aliasing and half toning techniques.
CO-14	Discuss OpenGL application programming Interface and apply it for 2D & 3D computer graphics.
CO-15	Analyze and apply clipping algorithms and transformation on 2D images.
CO-16	Solve the problems on viewing transformations and explain the projection and hidden surface removal algorithms.
CO-17	Apply basic ray tracing algorithm, shading, shadows, curves and surfaces and also solve the problems of curves.

SEMESTER-V

COURSE CODE: USIT501
COURSE NAME: SOFTWARE PROJECT MANAGEMENT

After successful completion of this course, students will be able to:	
CO-1	To understand various methods involved in software development.
CO-2	To understand a variety of stages involved in the software development
CO-3	Identify defects and manage those defects for improvement in quality for given software.
CO-4	To think and analyze how Monitoring and Control can be implemented for various software projects.
CO-5	To realize the importance of Working in Teams

COURSE CODE: USIT502
COURSE NAME: INTERNET OF THINGS

After successful completion of this course, students will be able to:	
CO-1	The basic concept of networking and internet of things
CO-2	Building a prototype of an IoT project.
CO-3	Design & develop IoT Devices

CO-4	Learn about the hardware and software components involved in building iot applications
CO-5	Learn to use or develop business models to build projects.

COURSE CODE: USIT503
COURSE NAME: ADVANCED WEB PROGRAMMING

After successful completion of this course, students will be able to:	
CO-1	Learners would get a clear understanding of developing the web applications and their deployment.
CO-2	The learner would also get acquainted with working of C# language.
CO-3	To use and implement ASP.NET Form Fundamentals to design webforms.
CO-4	Students will be able to implement database drivers, and design web applications using ADO.NET.

COURSE CODE: USIT504
COURSE NAME: ARTIFICIAL INTELLIGENCE

After successful completion of this course, students will be able to:	
CO-1	Get a clear understanding of AI and different search algorithms used for solving problems.
CO-2	Get acquainted with different learning algorithms and models used in machine learning.
CO-3	Analyze and formalize the problem as a state space, graph, design heuristics and select amongst different search or game based techniques to solve them.
CO-4	Understand the fundamentals of knowledge representation (logic-based, framebased, semantic nets), inference and theorem proving. Know how to build simple knowledge-based systems.

COURSE CODE: USIT505
COURSE NAME: ENTERPRISE JAVA

After successful completion of this course, students will be able to:	
CO-1	Identify advance concepts of java programming with database connectivity.
CO-2	Design and develop platform independent applications using a variety of component based frameworks
CO-3	Able to implement the concepts of Hibernate, XML& EJB for building enterprise applications.

CO-4	Learn Java EE and Java Servlets, Request Dispatcher, Cookies, Sessions and File I/O
CO-5	Learn Enterprise Java Beans and Java Naming and Directory Interface.

SEMESTER-VI

COURSE CODE: USIT601
COURSE NAME: SOFTWARE QUALITY ASSURANCE

After successful completion of this course, students will be able to:	
CO-1	Understand various software testing methods and strategies.
CO-2	Understand a variety of software metrics, and identify defects and managing those defects for improvement in quality for given software.
CO-3	Design SQA activities and strategy,
CO-4	Prepare formal technical review report for software quality control and assurance.

COURSE CODE:USIT602
COURSE NAME: SECURITY IN COMPUTING

After successful completion of this course, students will be able to:	
CO-1	Appreciate the value of information to the modern organization
CO-2	Understand the cia triad of confidentiality, integrity and availability
CO-3	Identify some of the factors driving the need for network security also Identify and classify particular examples of attacks
CO-4	Define the terms vulnerability, threat and attack
CO-5	Compare and contrast symmetric and asymmetric encryption systems and their vulnerability to attack, and explain the characteristics of hybrid systems.

COURSE CODE: USIT603
COURSE NAME: BUSINESS INTELLIGENCE

After successful completion of this course, students will be able to:	
CO-1	To provide knowledge on how to gather and analyze large sets of data to gain useful business understanding.
CO-2	To impart skills that can enable students to approach business problems analytically by identifying opportunities to derive business value from data.
CO-3	Demonstrate an understanding of the importance of data mining and the principles of business intelligence

CO-4	Apply BI to solve practical problems : Analyze the problem domain, use the data collected in enterprise, apply the appropriate data mining technique, interpret and visualize the results and provide decision support.

COURSE CODE: USIT604
COURSE NAME: PRINCIPLES OF GEOGRAPHICAL INFORMATION SYSTEMS

After successful completion of this course, students will be able to:	
CO-1	Learn basics of spatial databases
CO-2	Study & learn techniques and applications of GIS
CO-3	To understand the data creation process and databases
CO-4	Understanding of models and maps concepts in real-life applications.
CO-5	Learn software tools like Q-GIS for creating maps, practicals

COURSE CODE: USIT606
COURSE NAME: IT Services Management

After successful completion of this course, students will be able to:	
CO-1	Describe the key principles of IT service management
CO-2	Outline the important processes of IT service management
CO-3	Demonstrate the comprehension of a framework of IT service management
CO-4	Analyze an IT service organization in terms of processes and functions Draft a component in an IT service management agreement
CO-5	Discuss the roles involved in IT service management
CO-6	Practice IT asset and service cataloguing.