

Academic Year (2021-22)

Department of Information Technology (Under Graduate Course)

Program Outcome:

- PO1: Ability to apply knowledge in mathematics, science fundamentals to solve problems.**
- PO2: Understand the basic concepts of system software, hardware and computer graphics.**
- PO3: Design, and analyse precise specifications of algorithms, procedures, and interaction behavior.**
- PO4: Apply the technologies in various fields of IT, including Mobile applications, Website development and management, databases, and computer networks.**
- PO5: 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.**
- PO6: Ability to communicate effectively in both verbal and writing form in industry and society.**
- PO7: Ability to select appropriate techniques to tackle and solve problems in the discipline of information security management.**

Program Specific Outcome:

On completion of the B.Sc. (Information Technology) students are able to:

- **Serve as Programmer or Software Engineer with sound knowledge of practical and theoretical concepts for developing software's.**
- **Serve as Computer Engineer with enhanced knowledge of computers and its building blocks.**
- **Work as System Engineer and System integrator**
- **Serve as System Administrator with thorough knowledge of DBMS.**
- **Give Technical Support for various systems.**
- **Work as Support Engineer and Technical Writer**
- **Work as Consultant and Management officers for system management.**
- **Work as IT Sales and Marketing person.**
- **Serve as IT Officer in Banks and other Financial Institutions.**

Serve as Web Designer with latest web development technologies.

Semester – I

Course name	Course Outcome
Imperative Programming (USIT101)	<ul style="list-style-type: none">● How C provides a foundation for further study of programming languages.● Develop the ability to analyze a problem, develop an algorithm & flowchart to solve it.● To use simple input and output statements, Conditional operation, Control statements, & Looping.● To use Pointers and pointer operators.● Familiarize the basic aspects of arrays, structure and file handling.

<p align="center">Digital Electronics (USIT102)</p>	<ul style="list-style-type: none"> ● Understand the concepts of various components to design stable analog circuits. ● Represent numbers and perform arithmetic operations. ● Minimize the Boolean expression using Boolean algebra and design it using logic gates. ● Analyze and design combinational circuit.
<p align="center">Operating Systems (USIT103)</p>	<ul style="list-style-type: none"> ● An appreciation of the role of an operating system. ● Understand the theory and logic behind the design and construction of operating systems. ● Examine the algorithms used for various operations on operating systems. ● Differentiate between various operating systems functionalities in terms of performance. ● Know the problems in the design of operating system and study the probable solutions. ● Become aware of the issues in the management of resources like processor, memory and input-output. ● To understand the main components of an OS & their functions. ● To study the process management and scheduling. ● To understand various issues in Inter Process Communication (IPC) and the role of OS in IPC. ● To understand the concepts and implementation Memory management policies and virtual memory. ● To understand the working of an OS as a resource manager, file system manager, process manager, memory manager and I/O manager and methods used to implement the different parts of OS ● To study the need for special purpose operating system with the advent of new emerging technologies.
<p align="center">Discrete Mathematics (USIT104)</p>	<p>CO1</p> <ul style="list-style-type: none"> ● To provide an overview of the theory of discrete objects, starting with relations and partially ordered sets. <p>CO2</p> <ul style="list-style-type: none"> ● To be skillful in expressing mathematical properties formally via the formal language of propositional logic and predicate logic and Be able to construct simple mathematical proofs and possess the ability to verify them. <p>CO3</p> <ul style="list-style-type: none"> ● To study recurrence relations, generating function and operations on them. <p>CO4</p> <ul style="list-style-type: none"> ● To give an understanding of Relations, graphs and trees, which are widely used in software.

	<p>CO5</p> <ul style="list-style-type: none"> To Be able to apply basic counting techniques to solve combinatorial problems.
<p>Communication Skills (USIT105)</p>	<ul style="list-style-type: none"> To understand and apply knowledge of human communication and language processes as they occur across various contexts, e.g., interpersonal, intrapersonal, small group, organizational, media, gender, family, intercultural communication, technologically mediated communication, etc. from multiple perspectives. Discuss the importance of effective communication in business Differentiate between different methods of communication Discuss the importance of ethical communication and communicate ethically. Demonstrate critical and innovative thinking. Display competence in oral, written, and visual communication. Show an understanding of opportunities in the field of communication. Use current technology related to the communication field. Respond effectively to cultural communication differences. Demonstrate positive group communication exchanges.
Semester – II	
<p>Object oriented Programming (USIT201)</p>	<ul style="list-style-type: none"> Understand the difference between the top-down and bottom-up approach Describe the object-oriented programming approach in connection with C++ Apply the concepts of object-oriented programming Illustrate the process of data file manipulations using C++ Apply virtual and pure virtual function & complex programming situations
<p>Microprocessor Architecture (USIT202)</p>	<ul style="list-style-type: none"> Apply the fundamentals of assembly level programming of microprocessors. Build a program on a microprocessor using an instruction set of 8086. Develop the assembly level programming using 8086 loop instruction set. Analyze abstract problems and apply a combination of hardware and software to address the problem. Understanding different types of processors available in the market.
<p>Web Programming (USIT203)</p>	<ul style="list-style-type: none"> CO1: Define Internet and World Wide Web. Design a basic website using HTML and CSS to demonstrate responsive web design. CO2: Develop Web pages using HTML5 Page Layout, Tables, Forms and Media.

	<ul style="list-style-type: none"> • CO3: dynamic web pages with validation using JavaScript objects by applying different event handling mechanisms. • CO4: Explain simple web applications using server-side PHP programming and Database Connectivity using MySQL. • CO5: Design well-formed Web Applications to show the implementation of PHP/MySQL Functions, Database Connectivity.
Numerical and Statistical Methods (USIT204)	<p>CO1</p> <ul style="list-style-type: none"> • To enable learners to develop mathematical modelling and to apply on Engineering problems and recognize the error generated by the solution <p>CO2</p> <ul style="list-style-type: none"> • To compute solutions of algebraic and transcendental equations by numerical methods like the Bisection method, method of false position, Secant method and Newton Rapshon method <p>CO3</p> <ul style="list-style-type: none"> • To Apply method of interpolation and extrapolation for prediction <p>CO4</p> <ul style="list-style-type: none"> • To solve a system of linear equations simultaneously of more than 2 variables <p>CO5</p> <ul style="list-style-type: none"> • To solve numerically differentiation, integration and Differential equation. <p>CO6</p> <ul style="list-style-type: none"> • To enable learners to understand basic concepts of optimization, modelling and linear modeling and to solve problems using LP techniques. <p>CO7</p> <ul style="list-style-type: none"> • To recognize elements and variables in statistics and summarize qualitative and quantitative data. <p>CO8</p> <ul style="list-style-type: none"> • To enable learners to identify problems and apply suitable probability distribution formula
Green Computing	<ul style="list-style-type: none"> • To understand of e-waste and recycling • To illustrate use of data center , virtualization and energy related issues

(USIT205)	<ul style="list-style-type: none"> ● To paperless office, telecommuting, CGO ● To understand the hardware considerations ● To understand the requirements for greeting the information system
Semester – III	
Python Programming (USIT301)	<ul style="list-style-type: none"> ● Basic of Python programming ● Describe the numbers, Math functions, Strings, List, Tuples, & Dictionaries in Python. ● Interpret Object Oriented Programming in Python. ● Express different decision making statements in python. ● Understand and summarize different file handling operations. ● Explain how to design GUI applications in python and evaluate different database operations. ● Design and develop client server network applications using python.
Data Structures (USIT302)	<ul style="list-style-type: none"> ● Select appropriate data structures as applied to specified problem definition. ● Implement operations like searching, insertion, and deletion, traversing mechanism on various data structures. ● Students will be able to implement linear and Non-Linear data structures. ● Implement appropriate sorting/searching techniques for given problems. ● Design advance data structure using nonlinear data structure. ● Determine and analyze the complexity of given Algorithms
Computer Networks (USIT303)	<ul style="list-style-type: none"> ● Familiarize with the basic protocols of computer networks, and how they can be used to assist in network design and implementation. ● Understand the concept of subnetting and routing mechanisms in network configuration. ● Demonstrate and measure different network scenarios and their performance behavior. ● Design and setup a simple organization network using packet tracer simulator.

<p style="text-align: center;">Database Management Systems (USIT304)</p>	<p>C01-To understand the characteristics, architecture of database approach, describe the components, major functions of a database system and to compare different data models.</p> <p>C02- 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).</p> <p>C03: To understand database constraints , types of views and SQL functions.</p> <p>C04: To understand transaction management, concurrency control techniques and data recovery methods.</p> <p>C05: To identify the extensions that PL/SQL offers to SQL and to demonstrate basic PL/SQL code using programming constructs and control statements and to apply advanced concepts like triggers , cursors , stored procedures .</p>
<p style="text-align: center;">Applied Mathematics (USIT305)</p>	<p>CO1</p> <ul style="list-style-type: none"> ● 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. <p>CO2</p> <ul style="list-style-type: none"> ● Enable learners to perform basic operations to understand geometric interpretation, to find the nth root and logarithm of complex numbers <p>CO3</p> <ul style="list-style-type: none"> ● 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 <p>CO4</p> <ul style="list-style-type: none"> ● Enable learners to apply Laplace transform to determine general or complete solutions to linear ODE applications <p>CO5</p> <ul style="list-style-type: none"> ● Apply multiple integrals to find area, volume, mass and moment of inertia of plane and solid region. <p>CO6</p> <ul style="list-style-type: none"> ● Apply beta and gamma and Error function to solve definite integral
Semester – IV	
<p style="text-align: center;">Core Java (USIT401)</p>	<ul style="list-style-type: none"> ● CO1: To understand the importance of Classes & objects along with constructors, Data Types.

	<ul style="list-style-type: none"> ● CO2: Discuss the principles 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. ● CO3: Understand the different Control Flow Statements, Iterations to implement looping in the programs. ● CO4: To understand the importance of Multi-threading, different exception handling mechanisms, Arrays and Byte Stream Classes. ● CO5: To learn experience of designing, implementing, testing, and debugging graphical user interfaces in Java using AWT that respond to different user events.
Introduction to Embedded Systems (USIT402)	<ul style="list-style-type: none"> ● Explain the embedded system concepts and architecture of embedded systems ● Understand the concepts of Microcontroller and microprocessor architecture. ● Describe the architecture of 8051 microcontroller and write embedded program for 8051 microcontroller. ● Design the interfacing for 8051 microcontroller. ● Select elements for an embedded systems tool
Computer Oriented Statistical Techniques (USIT403)	<p>CO1 Enable learners to know descriptive statistical concepts</p> <p>CO2 Enable study of probability concept required for computer learners, Concept about Samples, Sampling theory, Calculating statistics and probability from samples.</p> <p>CO3 Enables learners to draw conclusions using estimation theory, Concept about hypotheses, setting up the hypothesis and making decisions using decision theory.</p> <p>CO4 Enable learners to measure experimental results based on hypothesis using chi square techniques</p> <p>CO5 To learn techniques correlating the relationship between multiple variables</p>
Software Engineering (USIT404)	<ul style="list-style-type: none"> ● Knowledge of basic SW engineering methods and practices, and their appropriate application. ● Describe software engineering layered technology and Process framework. ● A general understanding of software process models such as the waterfall and evolutionary models. ● Understanding of software requirements and the SRS documents. ● Understanding of the role of project management including planning, scheduling, risk management, etc. ● Describe data models, object models, context models and behavioral models. ● Understanding of different software architectural styles.

	<ul style="list-style-type: none"> • Understanding of implementation issues such as modularity and coding standards. • Understanding of approaches to verification and validation including static analysis, and reviews.
Computer Graphics and Animation (USIT405)	<ul style="list-style-type: none"> • To list the basic concepts used in computer graphics. • To implement various algorithms to scan, convert the basic geometrical primitives, transformations, Area filling, clipping. • To describe the importance of viewing and projections. • To define the fundamentals of animation, virtual reality and its related technologies. • To understand a typical graphics pipeline • To design an application with the principles of virtual reality
Semester – V	
Software Project Management (USIT501)	<ul style="list-style-type: none"> • Define various software application domains and remember different process model used in software development. • Explain needs for software specifications also they can classify different types of software requirements and their gathering techniques. • Convert the requirements model into the design model and demonstrate use of software and user interface design principles. • Distinguish among SCM and SQA and can classify different testing strategies and tactics and compare them. • Justify role of SDLC in Software Project Development and they can evaluate importance of Software Engineering in PLC. • Generate project schedule and can construct, design and develop network diagram for different type of Projects. They can also organize different activities of project as per Risk impact factor.
Internet of Things (USIT502)	<p>C01-To understand the basic concept of Internet of Things and apply design principles for connected devices with the help of different protocol suites.</p> <p>C02-To understand steps for prototyping embedded platforms.</p> <p>C03- To analyze prototyping of physical and online components .</p> <p>C04- To identify techniques for writing embedded code and understand different business models.</p> <p>C05- To understand manufacturing activities and ethical concerns to be considered while designing IOT applications.</p>
Advanced Web Programming (USIT503)	<ul style="list-style-type: none"> • Learn about the MS.NET framework developed by Microsoft. • Use the features of .NET Framework along with the features of C#. • Be able to understand use of C# basics, Objects and Types, Inheritance. • Create Web forms and use Web controls. • Design the web pages using Styles, Themes, and Master Pages.

	<ul style="list-style-type: none"> ● Make use of ADO .Net for Application and Database Connectivity. ● Use XML in C#.NET for Application Development and for Data Connectivity. ● Use AJAX with C# and ASP .NET for improving performance of Web Application. ● To develop, implement and creating Web Applications with C# & ASP .NET.
Artificial Intelligence (USIT504)	<ul style="list-style-type: none"> ● CO1 : To understand the foundations and history of Artificial Intelligence , types of agents and environment with their Performance measure,Environment, Actuators and Sensors ● CO2 : To illustrate the search algorithms and to demonstrate search techniques of uninformed informed and local search category ● CO3 : To solve problems related to gaming domain using adversarial search algorithms To illustrate the working of knowledge based agents and propositional logic. ● CO4 : To formulate the First order logic . To demonstrate the working of inference and logic. ● CO5 : To understand various agent planning approaches. To define the knowledge representation components.
Enterprise JAVA (USIT506)	<ul style="list-style-type: none"> ● CO1: Understand Enterprise Application and demonstrate working with servlets. ● CO2: Identify advanced concepts of java programming with database connectivity. ● CO3: Design and develop platform independent applications using a variety of component based frameworks ● CO4: Able to implement the concepts of Hibernate, XML & EJB for building enterprise applications. ● CO5: Experiment with Java Server Pages and understand the implicit objects, expression language for developing web applications.
Semester – VI	
Software Quality Assurance (USIT601)	<ul style="list-style-type: none"> ● Understand the importance of Software Project Management. ● Implement Project Evaluation and Programme Management along with Project Planning. ● Estimate the cost of Software and its process. ● Understand principles behind testing software and why software should be tested. ● Understand testing processes and be able to identify when to begin testing during the software development lifecycle. ● Understand the verification and validation processes of testing.
Security in Computing (USIT602)	<ul style="list-style-type: none"> ● Describe various communications networks and their main components. ● Develop a networking plan for yourself or a client.

	<ul style="list-style-type: none"> ● Distinguish and explain the concepts of: authentication; authorization, and attacks. ● Identify the function of a firewall, and how it keeps a computer secure and safe from viruses. ● Prepare a security plan for organization.
<p style="text-align: center;">Business Intelligence (USIT603)</p>	<ul style="list-style-type: none"> ● To make student familiarize with concepts and various mathematical model related to business intelligences and decision support systems. ● To demonstrate concept of decision making process and decision support system ● Demonstrate an understanding of the importance of data mining and the principles of business intelligence ● Organize and prepare the data needed for data mining using pre preprocessing techniques ● To demonstrate the concept of classification and clustering of data and to also make students familiarize with various methods for classification and clustering. ● To learn data warehouses, design methods (dimension modeling), data extracting, transforming and loading processes and OLAP systems. ● To demonstrate various applications of business intelligence and identification of good operating practices. ● To demonstrate the use of logistics and production models. ● To demonstrate the knowledge management and role of people in knowledge management. ● To demonstrate the Concepts and Definitions of Artificial Intelligence and Expert systems.
<p style="text-align: center;">Principles of Geographic Information Systems (USIT604)</p>	<p>CO1:To understand the nature of GIS and to identify geographic information phenomena and demonstrate the concept of Spatial database and temporal dimensions.</p> <p>CO2: To understand stages of spatial data handling and to illustrate the concept of spatial databases.</p> <p>CO3: To explain the concept of Spatial Referencing and to classify types of satellite based positioning. To identify steps while preparing data for spatial representation.</p> <p>CO4: To classify spatial data analysis capabilities.</p> <p>CO5:To describe and apply data visualization techniques.</p>

IT Service Management (USIT606)	<ul style="list-style-type: none"> ● Describe the key principles of IT service management. ● Outline the important processes of IT service management. ● Demonstrate the comprehension of a framework of IT service management. ● Analyze an IT service organization in terms of processes and functions. ● Discuss the roles involved in IT service management. ● Practice IT asset and service cataloguing. ● Draft a component in an IT service management agreement.
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Department of Information Technology (Post Graduate Course)

Program Outcome:
<ul style="list-style-type: none"> ● PO1: Ability to apply the knowledge of Information Technology with recent trends aligned with research and industry. ● PO2: Ability to apply IT in the field of Computational Research, Soft Computing, Big Data Analytics, Data Science, Image Processing, Artificial Intelligence, Networking and Cloud Computing. ● PO3: Ability to provide socially acceptable technical solutions in the domains of Information Security, Machine Learning, Internet of Things and Embedded System, Infrastructure Services as specializations. ● PO4: Ability to apply the knowledge of Intellectual Property Rights, Cyber Laws and Cyber Forensics and various standards in interest of National Security and Integrity along with IT Industry. ● PO5: Ability to write effective project reports, research publications and content development and to work in a multidisciplinary environment in the context of changing technologies.
Program Specific Outcome:
<p>On completion of the M.Sc. (Information Technology) students are able to:</p> <ul style="list-style-type: none"> · Understand how technical developments can be achieved. · Enhance the development of critical thinking, code writing skills and configuring the technical tools. · Prepares students for a wide variety of careers in IT related all industries with research bent of mind. · Equip the learners with professional skills essential for making career in software development, Database Management, Computer and Information Research, Network Architecture, Systems Analysing area. · Able to conceptualize, design, and produce one or more works in IT based on effective principles and practices of IT for a target audience. · Able to enhance their ability to apply knowledge of computing and mathematics appropriate to the discipline.

- Able to design and analyse algorithms to solve problems and study the performance of computer hardware and software.
- Able to understand the concepts of security environment in the information and cloud perspective.
- Able to use modern tools by applying appropriate techniques, resources, and IT tools including prediction and modelling to complex activities with an understanding of the limitations.
- Get improved sense of self-confidence and self-efficacy and an awareness of their responsibilities as professionals in their field.

Learners will acquire the knowledge and skills required to pursue a career in the specialization of their choice.

Semester – I

Course name	Course Outcome
Research in Computing (PSIT101)	<ul style="list-style-type: none"> ● To be able to conduct business research with an understanding of all the latest theories. ● To develop the ability to explore research techniques used for solving any real world or innovative problem.
Data Science (PSIT102)	<ul style="list-style-type: none"> ● Develop in depth understanding of the key technologies in data science and business analytics: data mining, machine learning, visualization techniques, predictive modeling, and statistics. ● Practice problem analysis and decision-making. ● Gain practical, hands-on experience with statistics programming languages and big data tools through coursework and applied research experiences.®
Cloud Computing (PSIT103)	CO1-To learn how to use Cloud Services. C02-To implement Virtualization. C03-To implement Task Scheduling algorithms. C04-Apply Map-Reduce concept to applications. C05-To build Private Cloud.
Soft Computing Techniques (PSIT104)	<ul style="list-style-type: none"> ● To understand the Soft computing concepts like fuzzy logic, neural networks and genetic algorithm ● To find optimistic decisions by neural networks. ● To monitor the decision making in a dynamic system. ● to understand the designing of intelligent systems in Artificial Intelligence

Semester – II

Big Data Analytics (PSIT201)	<ul style="list-style-type: none"> ● To provide an overview of an exciting growing field of big data analytics. ● To introduce the tools required to manage and analyze big data like Hadoop, NoSql MapReduce. ● To teach the fundamental techniques and principles in achieving big data analytics with scalability and streaming capability.
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	<ul style="list-style-type: none"> To enable students to have skills that will help them to solve complex real world problems in decision support.
Modern Networking (PSIT202)	<ul style="list-style-type: none"> To understand the state-of-the-art in network protocols, architectures and applications. Analyze existing network protocols and networks. Develop new protocols in networking. To understand how networking research is done. To investigate novel ideas in the area of Networking via term-long research projects.
Micro services Architecture (PSIT203)	<ul style="list-style-type: none"> Gain a thorough understanding of the philosophy and architecture of Web applications using ASP.NET Core MVC;® Gain a practical understanding of .NET Core;® Acquire a working knowledge of Web application development using ASP.NET Core MVC 6 and Visual Studio® Persist data with XML Serialization and ADO.NET with SQL Server Create HTTP services using ASP.NET Core Web API. Deploy ASP.NET Core MVC applications to the Windows Azure cloud.
Image Processing (PSIT204)	<ul style="list-style-type: none"> Review the fundamental concepts of a digital image processing system. Analyze images in the frequency domain using various transforms. Evaluate the techniques for image enhancement and image restoration. Categorize various compression techniques. Interpret Image compression standards. Interpret image segmentation and representation techniques.
Semester – III	
Technical Writing and Entrepreneurship Development (PSIT301)	<ul style="list-style-type: none"> CO1: Develop technical documents that meet the requirements with standard guidelines. Understanding the essentials and hands-on learning about effective Website Development. CO2: Write Better Quality Content Which Ranks faster at Search Engines. Build effective Social Media Pages. CO3: Evaluate the essentials parameters of effective Social Media Pages. CO4: Understand importance of innovation and entrepreneurship. CO5: Analyze research and development projects.
Applied Artificial Intelligence (PSIT302a)	<ul style="list-style-type: none"> CO1: be able to understand the fundamentals concepts of the expert system and its applications. CO2: be able to use probability and the concept of fuzzy sets for solving AI based problems. CO3: be able to understand the applications of Machine Learning. The learner can also apply a fuzzy system for solving problems. CO4: learner will be able to apply to understand the applications of genetic algorithms in different problems related to artificial intelligence.

	<ul style="list-style-type: none"> ● CO5: A learner can use knowledge representation techniques in natural language processing.
Cloud Management (PSIT302c)	<ul style="list-style-type: none"> ● CO1: Understand the concepts of VMM, SDN, NAS , HyperV etc. ● CO2: Understand and demonstrate the use of Service manager with various deployments that can be performed using it. ● CO3: Understand SCCM and Demonstrate the use of Configuration Manager ● CO4: Understand automation with runbooks and demonstrate the use of Windows Orchestrator ● CO5: Understand and demonstrate the use of Data Protection Manager
Offensive Security (PSIT304d)	<ul style="list-style-type: none"> ● CO1: Understand basic security issues in cloud, IoT etc. ● CO2: Understand different security techniques and policies ● CO3: Use Vulnerability assessment and exploitation tool ● CO4: Analyze the network perform reconnaissance and enumerate the target to detect vulnerabilities ● CO5: Perform offensive tests using Metasploit on various application, generating payloads etc.
Semester – IV	
Blockchain (PSIT401)	<p>To provide conceptual understanding of the function of Blockchain as a method of securing distributed ledgers, how consensus on their contents is achieved, and the new applications that they enable. · To cover the technological underpinnings of blockchain operations as distributed data structures and decision-making systems, their functionality and different architecture types.</p> <p>· To provide a critical evaluation of existing “smart contract” capabilities and platforms, and examine their future directions, opportunities, risks and challenges</p>
Natural Language Processing (PSIT402a)	<ul style="list-style-type: none"> ● CO1: Students will get ideas about know-hows, issues and challenges in Natural Language Processing and NLP applications and their relevance in the classical and modern context. ● CO2: Students will get an understanding of Computational techniques and approaches for solving NLP problems and develop modules for NLP tasks and tools such as Morph Analyzer, POS tagger, Chunker, Parser, WSD tool etc. ● CO3: Students will also be introduced to various grammar formalisms, which they can apply in different fields of study. ● CO4: Students can take up project work or work in R&D firms working in NLP and its allied areas.

	<ul style="list-style-type: none"> ● CO5: Student will be able to understand applications in different sectors
Server Virtualization on VMWare Platform (PSIT403c)	<ul style="list-style-type: none"> ● CO1: Understand VMWare VSphere 67, Install ESXi and Configure VSphere Centre ● CO2: Demonstrate the use of VSphere Update Manager and Create a VSphere Network ● CO3: Understand VSphere Security, Create and configure storage devices and Perform configurations to ensure business continuity ● CO4: Demonstrate Resource allocation, Creating and managing virtual machine and the use of templates ● CO5: Understand automation of vSphere and manage resource allocation
Information Security Auditing (PSIT404d)	<ul style="list-style-type: none"> ● CO1: Understand various information security policies and process flow, Ethics of an Information security Auditor. ● CO2: Understand various information systems in an organization, their criticality and various governance and management policies associated with them. ● CO3: Critically analyse various operational strategies like asset management, data governance etc. and suggest requisite changes as per organizations requirements with improvements. ● CO4: Understand the information flow across the organization and identify the weak spots, and also suggest improvements to strengthen them. ● CO5: Come up with strong strategies to protect information assets and come up with an efficient business continuity plan, disaster recovery strategy etc.