



# VIVEK COLLEGE OF COMMERCE

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## **M.Sc.I.T. (INFORMATION TECHNOLOGY)**

**PROGRAMME SPECIFIC OUTCOME  
COURSE OUTCOME**



# **M.Sc.I.T. (INFORMATION TECHNOLOGY)**

## **PROGRAMME SPECIFIC OUTCOME COURSE OUTCOME**

### **M.Sc.I.T. PROGRAMME SPECIFIC OUTCOME**

PSO1: Ability to apply the knowledge of Information Technology with recent trends aligned with research and industry.

PSO2: 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.

PSO3 : 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.

PSO4: 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.

PSO5: Ability to write effective project reports, research publications and content development and to work in multidisciplinary environment in the context of changing technologies.



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## **COURSE OUTCOME**

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### **SEMESTER I**

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#### **COURSE CODE - PSIT101**

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#### **COURSE NAME - RESEARCH IN COMPUTING**

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After completing the course, the learner will be able to:

CO1: Solve real world problems with scientific approach.

CO2: Develop analytical skills by applying scientific methods.

CO3: Recognize, understand and apply the language, theory and models of the field of business analytics.

CO4 : Foster an ability to critically analyse, synthesize and solve complex unstructured business problems.

CO5: Understand and critically apply the concepts and methods of business analytics.

CO6: Identify, model and solve decision problems in different settings.

CO7: Interpret results/solutions and identify appropriate courses of action for a given managerial situation whether a problem or an opportunity.

CO8: create viable solutions to decision making problems.

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#### **COURSE CODE - PSIT102**

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#### **COURSE NAME - DATA SCIENCE**

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After completing the course, the learner will be able to:

CO1: Apply quantitative modelling and data analysis techniques to the solution of real-world business problems, communicate findings, and effectively present results using data visualization techniques.

CO2: Recognize and analyse ethical issues in business related to intellectual property, data security, integrity, and privacy.

CO3: Apply ethical practices in everyday business activities and make well-reasoned ethical business and data management decisions.

CO4: Demonstrate knowledge of statistical data analysis techniques utilized in business decision making.

CO5 : Apply principles of Data Science to the analysis of business problems.

CO6: Use data mining software to solve real-world problems.

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CO7: Employ cutting edge tools and technologies to analyse Big Data.

CO8: Apply algorithms to build machine intelligence.

CO9: Demonstrate use of teamwork, leadership skills, decision making and organization theory.

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**COURSE CODE - PSIT103**

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**COURSE NAME - CLOUD COMPUTING**

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After completing the course, the learner will be able to:

CO1: Analyse the Cloud computing setup with its vulnerabilities and applications using different architectures.

CO2: Design different workflows according to requirements and apply map reduce programming model.

CO3: Apply and design suitable Virtualization concept, Cloud Resource Management and design scheduling algorithms.

CO4: Create combinatorial auctions for cloud resources and design scheduling algorithms for computing clouds

CO5: Assess cloud Storage systems and Cloud security, the risks involved, its impact and develop cloud application.

CO6: Broadly educate to know the impact of engineering on legal and societal issues involved in addressing the security issues of cloud computing.

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**COURSE CODE - PSIT104**

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**COURSE NAME - SOFT COMPUTING TECHNIQUES**

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After completing the course, the learner will be able to:

CO1: Identify and describe soft computing techniques and their roles in building intelligent machines.

CO2: Recognize the feasibility of applying a soft computing methodology for a particular problem.

CO3: Apply fuzzy logic and reasoning to handle uncertainty and solve engineering problems.

CO4: Apply genetic algorithms to combinatorial optimization problems.

CO5: Apply neural networks for classification and regression problems.

CO6: Effectively use existing software tools to solve real problems using a soft computing approach.



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CO7: Evaluate and compare solutions by various soft computing approaches for a given problem.

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## **SEMESTER II**

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### **COURSE CODE - PSIT201**

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### **COURSE NAME - BIG DATA ANALYTICS**

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After completing the course, the learner will be able to:

CO1: Understand the key issues in big data management and its associated applications in intelligent business and scientific computing.

CO2: Acquire fundamental enabling techniques and scalable algorithms like Hadoop, Map Reduce and NO SQL in big data analytics.

CO3: Interpret business models and scientific computing paradigms and apply software tools for big data analytics.

CO4: Achieve adequate perspectives of big data analytics in various applications like recommender systems, social media applications etc.

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### **COURSE CODE - PSIT202**

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### **COURSE NAME - MODERN NETWORKING**

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After completing the course, the learner will be able to:

CO1: Demonstrate in-depth knowledge in the area of Computer Networking.

CO2: To demonstrate scholarship of knowledge through performing in a group to identify, formulate and solve a problem related to Computer Networks.

CO3: Prepare a technical document for the identified Networking System Conducting experiments to analyse the identified research work in building Computer Networks.

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### **COURSE CODE - PSIT203**

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### **COURSE NAME - MICROSERVICE ARCHITECTURE**

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After completing the course, the learner will be able to:

CO1: Develop web applications using Model View Control.

CO2: Create MVC Models and write code that implements business logic within Model methods, properties, and events.

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CO3: Create Views in an MVC application that display and edit data and interact with Models and Controllers.

CO4: Boost your hire ability through innovative and independent learning.

CO5: Gaining a thorough understanding of the philosophy and architecture of .NET Core.

CO6: Understanding packages, metapackages and frameworks.

CO7: Acquiring a working knowledge of the .NET programming model.

CO8: Implementing multi-threading effectively in .NET applications.

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### **COURSE CODE - PSIT204**

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### **COURSE NAME - IMAGE PROCESSING**

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After completing the course, the learner will be able to:

CO1: Understand the relevant aspects of digital image representation and their practical implications.

CO2: Have the ability to design pointwise intensity transformations to meet stated specifications.

CO3: Understand 2-D convolution, the 2-D DFT, and have the ability to design systems using these concepts.

CO4: Have a command of basic image restoration techniques.

CO5: Understand the role of alternative colour spaces, and the design requirements leading to choices of colour space.

CO6: Appreciate the utility of wavelet decompositions and their role in image processing systems.

CO7: Have an understanding of the underlying mechanisms of image compression, and the ability to design systems using standard algorithms to meet design specifications.

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### **SEMESTER III**

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### **COURSE CODE - PSIT301**

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### **COURSE NAME - EMBEDDED SYSTEMS**

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After completing the course, the learner will be able to:

CO1: Understand the concept of Embedded Systems. Differentiate between Embedded System and General Computing System.

CO2: Acquire knowledge about Embedded product development life cycle

CO3: Understand hardware, software and firmware design requirements of Embedded systems

CO4: Learn the basics of OS (Operating Systems ) and RTOS (Real Time Operating Systems)



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CO5: Classification of different types of memory and memory sub system required for embedded systems

CO6: Develop programs using programming languages like C, C++ and Java

CO7: Become aware of the trends in Processor, Operating system and development language of Embedded systems.

CO8: Understand about the various family of Microcontrollers

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### **COURSE CODE - PSIT302**

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### **COURSE NAME - INFORMATION SECURITY SYSTEMS**

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After completing the course, the learner will be able to:

CO1: Identify the core types of security risks

CO2: Apply quantitative and qualitative risk assessment methods

CO3: Develop an Understanding of various network security applications IPS, Firewall, IDS and wireless security management.

CO4: Apply and enforce security policies

CO5: Understanding security audit and its procedure

CO6: Develop an appropriate Disaster Recovery and Business Continuity plan

CO7: Identify backup and recovery techniques for application and storage.

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### **COURSE CODE - PSIT303B**

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### **COURSE NAME - ARTIFICIAL NEURAL NETWORK**

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After completing the course, the learner will be able to:

CO1: Understand the theory and concept of Neuron and Identify different Neural Network architectures

CO2: Describe supervised learning and its types

CO3: Explain support vector concepts and Radial Basic Function Networks

CO4: Understand fuzzy logic and the concept of fuzziness involved in various fuzzy systems and fuzzy set theory.

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### **COURSE CODE - PSIT304A**

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### **COURSE NAME - DIGITAL IMAGE PROCESSING**

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After completing the course, the learner will be able to:

CO1: Explain the fundamentals of digital image processing

CO2: Ability to design intensity transformations and spatial filtering



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CO3: Describe color image processing, image compression, image segmentation, representation and description.

CO4: Describe Object detection and recognition techniques

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## **SEMESTER IV**

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### **COURSE CODE - PSIT401**

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### **COURSE NAME - ARTIFICIAL INTELLIGENCE**

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After completing the course, the learner will be able to:

CO1: Define artificial Intelligence, its history, future and its applications

CO2: Understand the searching techniques and game playing techniques.

CO3: Explain Artificial Intelligence techniques for Knowledge representation, reasoning and planning

CO4: Describe the use of Artificial Intelligence to solve constraint satisfaction problem.

CO5: Know how to build knowledge-based systems

CO6: Demonstrate working knowledge in PROLOG to write small programs.

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### **COURSE CODE - PSIT402**

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### **COURSE NAME - IT INFRASTRUCTURE MANAGEMENT**

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After completing the course, the learner will be able to:

CO1: Acquire knowledge about IT Infrastructure and Management.

CO2: Define service and concept of service management in IT Infrastructure Management

CO3: Understand service strategy, service design, service transition and service operation

CO4: Examine the seven steps improvement process is, and how each step can be applied.

CO5: Discuss how to design services and processes

CO6: Evaluate how to manage the transition of a new or a changed service.

CO7: Appraise that the services are delivered and running smoothly and reliably.

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### **COURSE CODE - PSIT403C**

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### **COURSE NAME - COMPUTER FORENSICS**

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After completing the course, the learner will be able to:

CO1: Define and discuss the concept of computer forensics

CO2: Explain and apply the concept of computer investigations.





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CO3: Understand the setup of an investigator's office and laboratory.

CO4: Identify and apply current practices for processing crime and incident scenes

CO5: Apply current computer forensics tools

CO6: Explain the boot processes and file systems of various operating systems.

CO7: Perform E-mail investigations.

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**COURSE CODE - PSIT404B**

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**COURSE NAME - ADVANCED IMAGE PROCESSING**

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After completing the course, the learner will be able to:

CO1: Perform image enhancements techniques in frequency domain and understand 2-D discrete Fourier transform

CO2: Define remote sensing. Understand electromagnetic remote sensing and its interaction with the earth's surface and atmosphere.

CO3: Examine various techniques used in processing of satellite images and medical images.

CO4: Apply the image processing concepts in real life problems and contribute to various research domains.