

M. Sc. IT Learning Objectives & Learning Outcomes

MSc IT Semester III

SN	LEARNING OBJECTIVES	LEARNING OUTCOMES
Embedded Systems		
1.	To enable students to have knowledge about the basic working of a microcontroller system and its programming using high level languages.	Students would be able to understand the difference between the general computing system and the embedded system and also recognize its classification.
2.	To provide students experience to integrate hardware and software for microcontroller applications systems.	Students would be able to provide knowledge to integrate hardware and software for microcontroller application systems.
3.	To make students learn the basics about various microcontrollers and their applications.	Students would be able to acquire knowledge about microcontrollers, embedded processors and their applications
Information Security Management		
1.	To make students acquire knowledge about information security management system ISMS and industry specific security certifications	Students would be able to understand the concept of Information Security Management System and Security Certifications.
2.	To enable students to learn industry recognized security domains.	Students would be able to understand types of domains commonly recognized by the security industry.
Virtualization		
1.	To describe the aims of virtualization	Students would be able to understand the basics of virtualization and study different types of virtualization such as Network Virtualization, Storage Virtualization, and Application Virtualization and so on.
2.	To make students understand installation, configuration, and management of Computer virtualization workstation and servers.	Students would be able to Install different servers on virtual machine. (CISCO, XENCENTRE, VSphere, VMWare)
Ethical Hacking		
1.	To make students understand the step-by-step methodology and tactics that hackers use to penetrate network systems	Students would be able to understand the core concepts related to malware, hardware and software vulnerabilities and their causes
2.	To Give a better understanding of IDS, firewalls, honeypots, and wireless hacking.	Students would be able to appreciate the Cyber Laws and impact of hacking and analyze social engineering methods

Embedded Systems Practical		
1.	To provide Knowledge to understand the Embedded systems design, Embedded programming and their operating system	Students would be able to understand the architecture and concepts of 8051 Microcontrollers.
2.	To make students learn the basics working of 8051 microcontrollers and embedded C programming.	Students would be able to have knowledge about the basic working of a microcontroller system and its programming in embedded C language.
Information Security Management Practical		
1.	To make students simulate the working of various security protocols and tools	Students would be able to simulate the working of various security algorithms, protocols and security devices.
2.	To enable students to analyze packets in a network.	Students would be able to use tools like packet analyzer and sniffing tools to analyze the data packets in a network.
Virtualization Practical		
1.	To make students learn about VMware and Microsoft Virtual Machine (VM) virtualization technologies	Students would be able to install and configure virtualization technology such as VMware, virtual server components such as vCenter, virtual network and storage such as vCenter server or ESxi.
2.	To demonstrate the set up and installation of different virtual servers such as vCenter, ESxi etc	Students would be able to deploy, manage and migrate virtual machines.
Ethical Hacking Practical		
1.	To make students learn concepts of footprinting, network scanning and packet sniffing	Students would be able to assess an environment using footprinting
2.	To make students learn network scanning to gain information.	Students would be able to collect information using network scanning

MSc IT Semester IV

SN	LEARNING OBJECTIVES	LEARNING OUTCOMES
Artificial Intelligence		
1.	To make students understand basic building blocks of AI.	Students would be able to understand the building blocks of AI as presented in terms of intelligent agents.
2.	Learn different methods of algorithms for solving problems.	Students would be able to analyze and formalize the problem as a state space, graph, design heuristics and select amongst different search or game based techniques to solve them.
3.	To make students learn how to solve satisfaction problems, mapping etc.	Students would be able to develop intelligent algorithms for constraint satisfaction problems and also design intelligent systems for Game Playing.
IT Infrastructure Management		
1.	To enable the students to understand how an integrated ITSM framework can be utilized to achieve IT business integration, cost reductions and increased productivity.	Students would be able to apply basic information technology service concepts to a current state of services using IT Infrastructure library.
2.	To make students learn the relationship between Business Strategy, Operations Strategy, Process Type, and the impact of these on managerial decision making and choices.	Students would be able to understand the relationship between Business Strategy, Operations Strategy, Process Type, and the impact of these on managerial decision making and choices.
Computer Forensics		
1.	To provide students with a comprehensive overview of collecting, investigating, preserving, and presenting evidence of cyber-crime left in digital storage devices.	Students would be able to provide an understanding Computer forensics fundamentals
2.	To make students understand file system basics and where hidden files may lie on the disk, as well as how to extract the data and preserve it for analysis.	Students would be able to analyze various computer forensics technologies
3.	To make students learn industry professional standards for performing digital investigations.	Students would be able to conduct digital investigations that conform to accepted professional standards and are based on the investigative process: identification, preservation, examination, analysis and reporting
Cloud Management		
1.	To help students understand a public	Students would be able to get in depth knowledge

	or private cloud and learning about cloud computing instances or create new ones, monitor utilization and costs, and adjust resource allocations.	about different cloud services such as public, private and hybrid clouds.
2.	To enable students learn cloud infrastructure management.	Students would be able to be able learn how to manage the cloud infrastructure using automated techniques and to acquire knowledge about the Microsoft System center 2012.
Computer Forensics Practical		
1.	To demonstrate the ability to create forensically sound image files and working copy drives from both live and at-rest computer systems using a variety of commercial and open source tools.	Students would be able to evaluate the effectiveness of available digital forensics tools and use them in a way that optimizes the efficiency and quality of digital forensics investigations.
2.	To enable students to apply the methods for preservation of digital evidence.	Students would be able to apply the methods for preservation of digital evidence
Cloud Management Practical		
1.	To help students to work with all the resources required to manage and automate the cloud platform.	Students would be able to work with all the resources required to manage and automate the cloud platform.