



جَامِعَةُ التَّقْنِيَّةِ وَالْعُلُومِ التَّطْبِيقِيَّةِ
 University of Technology and Applied Sciences
 Higher College of Technology الكليَّة التَّقْنِيَّة العُلْيَا

NETWORKING SPECIALIZATION					
Brief description of the Specialization	This specialization allows students to gain skills and knowledge that are needed to design, install and maintain appropriate networks for different environment. It also allows students to gain high level understanding of current and immediate future technologies in networking and develop skills that are needed in design development and implementation of appropriate network.				
Sl.No.	Course Code	Course Name	Prerequisite		Brief description of the Course
			Course Code	Course Name	
1	ITNT 309	Internet of Things Fundamentals	ITSE 203	Object Oriented Programming	The focus of this course is to explore the field of the things and their connection to the IoT. Students will be taught about the concepts and will be given the practical knowledge of how to use the sensors, controllers and actuators and create prototypes in packet tracer and real devices. They will learn how to create circuits which can be used in real world environment.
2	ITNT202	Logic Design	None	None	The course introduces the practical knowledge on the fundamentals concept of logic design and digital circuits. It also demonstrates the practical application of logic gates in designing the different types of combinational and sequential circuits.
3	ITNT4205 / ITNT405	TCP/IP Programming	ITNT305	DISTRIBUTED COMPUTING	This course help students to provide a good understanding of the salient features of TCP/IP network Programming. Students are expected to understand the networking concepts in detail and to program using any programming language with preference to object oriented language. This course offer a truly valuable review and guide to get the most out of the networked programs that are based on TCP/IP popular standard.

4	ITNT301	Scaling Networks	ITNT201	Routing and Switching Essentials	The course focuses on switching technologies and router operation that supports small-to-medium business networks and includes Wireless Local Area Networks (WLAN) and security concepts. The students are expected to learn key routing and switching concepts. They perform basic network configuration and troubleshooting techniques, identify and mitigate LAN security threats, configure and secure basic WLAN.
5	ITNT401	Connecting Networks	ITNT301	Scaling Networks	This course describes the architecture and considerations related to designing, operating and troubleshooting enterprise networks. This course covers Wide Area Networks (WAN) technologies, and Quality of Service (QoS) mechanisms used for secured remote access. It also introduces software-defined networking (SDN), virtualization and automation concepts that support the digitalization of networks.
6	ITNT403	Linux System Administration I	ITSE102	Intro to Operating System	This course aim to provide student's knowledge and skills to understand Linux Operating System. It helps students to learn theoretical and practical aspects of Linux System & Administration, which will include Linux Installation, Package Management, Basic Commands, Shell Scripting, File management & security, Network Management, Disk management as well.
7	ITNT406	Linux System Administration II	ITNT403	Linux System Administration I	This course aim to provide student's knowledge and skills to understand Linux Operating System Administration. It helps students to learn Advance theoretical and practical aspects of Linux System Administration, which will include Linux Installation, Kernel management, Disk Management, Logical Volume Management, Network Management & Security, File System Backup & Restore, DNS Server & DHCP Server as well.
8	ITNT4206	Linux System Administration I	ITSE102	Intro to Operating System	This course aim to provide student's knowledge and skills to understand Linux Operating System Administration. It helps students to learn theoretical and practical aspects of Linux System Administration, which will include Linux Installation, Basic Commands, Shell Scripting, Network Management, Security (File & Network), File System Backup & Restore, Logical Volume Management & Different Servers (File Server, Web Server & SMB Server) as well.

9	ITNT 101	Computer Hardware	None	None	The course provides the knowledge of what are the hardware components involved in the functioning of the computer, how to assemble the computer, how to trouble shoot the issues related to computer, Laptop, Printers. It also focus on the how the computers are connected and how to install the Operating system and work with it.
10	ITNT 102	Network Fundamentals I	ITNT101	Computer Hardware	This course discusses the basic understanding of the way networks operate, explains network components and their functions, as well as how a network is structured, and the architectures used to create networks, including the internet.
11	ITNT103	Network Fundamentals II	ITNT102	Network Fundamentals I	This course discusses the basic understanding of the way networks operation, explains IPv4 and IPv6 concepts, subnetting and VLSM. Build simple local area networks (LANs) that integrate IP addressing schemes, foundational network security, and perform basic configurations for routers and switches
12	ITNT201	Routing and Switching Essentials	ITNT103	Network Fundamentals II	This course focuses on switching technologies that support small-to-medium business networks including Virtual LAN (VLAN), Inter-VLAN routing, DHCP version 4 and DHCP version 6, Configure and troubleshoot redundancy on a switched network using STP and Etherchannel . The course also Develop critical thinking and problem-solving skills using real equipment and Cisco Packet Tracer.
13	ITNT3111	Client Server Computing	ITNT3111	Object Oriented Programming in Java	This course provides fundamentals of relevant concepts, principles, technical challenges and requirements of modern distributed systems. The students learn to design simple distributed systems using available technologies/ systems.
14	ITSY202	Network OS Administration & Security	ITSE102	Intro to Operating System	This course aims to provide students the knowledge and skills required to deploy and maintain Network Operating System (NOS) along with its security features.
15	ITIS105	Computer Hardware and Network Essentials	ITIS101	Fundamentals of IT	The course Provide the students with the fundamental concepts of computer hardware, telecommunications networks and software.