

ICT259 Computer Networking

Level: 2

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY SEMESTER

Synopsis:

ICT259 Computer Networking introduces the concepts of networking in the protocol stack to design and implement a local area network. It explores the architecture, components, functions, protocols, and applications of the Internet and computer networks. Students learn how various network protocols run concurrently and interoperate together in the protocol stack to enable the transfer of data in the Internet. The Internet protocol stack comprises 5 layers, namely: Physical, Data Link, Network, Transport, and Application. An application in a computer system uses Application protocols such as Hypertext Transfer Protocol (HTTP) and File Transfer Protocol (FTP) to send data to another computer system in the network as the destination. The data is then transmitted using Transport protocols that include Transmission Control Protocol (TCP) and User Datagram Protocol (UDP), followed by a Network protocol which is Internet Protocol (IP) and a Data Link Protocol such as Ethernet.

Topics:

- Network components and trends
- Network protocols and communications
- Physical layer
- Data Link layer
- Ethernet
- Network layer
- IP addressing
- Subnetting
- Transport layer
- Application layer
- Network design
- Network testing

Textbooks:

: Introduction to Networks v6 Companion Guide Pearson Education
ISBN-13: 9781587133602

Learning Outcome:

- Discuss how network protocols and standards facilitate the transfer of data
- Explain the functions and protocols of the Physical layer and Data Link layer
- Apply effective IP addressing and subnetting
- Illustrate the functions of the Transport Layer using TCP and UDP protocols
- Summarise the features and operations of common Application layer protocols
- Analyse the behaviour of network protocols
- Test a local area network

Assessment Strategies (Evening Class):

Components	Description	Weightage Allocation (%)
Overall Continuous Assessment	PRE-CLASS QUIZ 1	2
	PRE-CLASS QUIZ 2	2
	PRE-CLASS QUIZ 3	2
	QUIZ 1	6
	TUTOR-MARKED ASSIGNMENT 1	18
Overall Examinable Components	Written Exam	70
Total		100