



**AMERICAN UNIVERSITY
OF CYPRUS**

Course Code CSC208	Course Name Communications and Networks	ECTS Credit 7.5
Pre-Requisite	Course Type Compulsory	Language of Instruction English
Year of Study 2 nd /4 th	Level of Course BSc/1st Cycle	Mode of Delivery On Campus

Course Objectives:

The aim of this course is to cover the fundamental issues in computer networks and also to provide an understanding of the concepts and issues of computer networks. Data communication is the necessary tool for understanding computer communication networks.

Learning Outcomes

Upon successful completion of the course, students will be able to:

- Know communications protocols and layer protocol architectures
- Interpret the standard communication protocols
- Identify and explain basic data transmission principles and types of data transmission (wired and wireless)
- Define connection control protocols and their functionality
- Recovers and explains multiplexing techniques and their applications
- Know local networks and give examples as well as their topologies and protocols.
- Know key concepts about network security and encryption algorithms.

Teaching Methodology:

Lectures 42 hours

Labs 30 hours

Course Content:

Communication systems.

Network Topologies.

Communication protocols.

The OSI / RM and TCP / IP standards.

Communication systems.

Data transmission elements.

Analog and digital transmission.

Signal encoding techniques and analog-to-digital (and vice versa) data-to-signal conversion.

Communication techniques.

Contemporary and asynchronous transmission, error control: species, tracking and correction.

Flow control: Stop-and-wait, sliding-window.

Wired and wireless Local networks

Topologies, protocols, and IEEE 802 standards.

Cellular systems.

Introduction to Network Security.

Assessment Methods:

Final Exam

Mid-Term/Lab Exams

Assignment

Required Textbooks/Reading:

Title	Author(s)	Publisher	Year
Computer Networking – A Top-Down Approach Featuring the Internet	James F. Kurose and Keith W. Ross	Addison-Wesley	2016
Computer Networks	A. Tanenbaum	Prentice Hall	2010