Course Title	**Communications and Networks**				
Course Code	**CSC208**				
Course Type	**Compulsory**				
Level	BSc/1st Cycle				
Year / Semester	3rd/5th				
Teacher's Name	Marios Efthymiopoulos				
ECTS	7.5	**Lectures / week**	3 hours	**Laboratories / week**	-
Course Purpose and 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.				
Prerequisites	-		**Required**		-
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.
Teaching Methodology	Lectures 42 hours Labs 30 hours
Bibliography	James F. Kurose and Keith W. Ross, "Computer Networking -- A Top-Down Approach Featuring the Internet", Addison-Wesley, Seventh Edition, 2016 A. Tanenbaum, "Computer Networks", 5th Edition, Prentice Hall, 2010
Assessment	Final Exam 60% Mid-Term/Lab Exams 20% Assignment 20%
Language	English