AMERICAN UNIVERSITY
OF CYPRUS

Course Code	Course Name	ECTS Credit
CSC307	Computer Systems Security	5

Pre-Requisite	Course Type	Language of Instruction
	Compulsory	English

Year of Study	Level of Course	Mode of Delivery
3rd /6th	BSc/1st Cycle	On Campus

Course Objectives:

The aim of this course is to familiarize the students with the fundamental principles of Computer Systems Security and the security problems of modern computer systems and networks, their mechanisms and technologies of protection. Also, this course will provide a practical training in a laboratory environment, by implementing cryptographic algorithms, detecting vulnerabilities and intrusions, preventing intrusions, implementing protection measures and developing security policies.

Learning Outcomes

Upon successful completion of this course students will be able to:

- Understand the basic concepts of computing systems and networks security
- Know the basics of the main encryption algorithms
- Analyze key network and network security features
- Know and implement security mechanisms and their respective protocols
- Examine and evaluate vulnerabilities, threats and risk assessment in a computational system
- Compare and assess fundamental access control policies and policies

Teaching Methodology:

Lectures 42 hours

Labs 30 hours

Course Content

Programming

• Basic Safety Principles Security Trends, OSI Security Architecture, Security Attacks, Security Services, Security

Mechanisms

• Symmetric encryption

• Public key cryptography and authentication of message authentication

• Public key Infrastructure

• Email security

• Pretty Good Privacy (PGP), S / MIME

• IP Protocol Security (IPSec), key Management

• Web security Web security issues, SSL and TLS protocols, secure electronic transaction

• Intrusion Invasion Techniques, Intrusion Detection (IDS), Intrusion Prevention (IPS), Password Management

• Malicious software Viruses and related threats

• Protection Walls Designing Walla for Walls, Trusted Systems

• Criteria for security assessment in IT.

Assessment Methods:

Final Exam

Mid-Term/Lab Exam

Assignment

Required Textbooks/Reading:

Title	Author(s)	Publisher	Year
Cryptography and Network Security: Principles and Practice	W. Stallings	Pearson	2016
Introduction to computer security	M. Goodrich, R.Tamassia	Pearson	2010