Course Name : Security in Computer Networks

Course Code	Course Type	Regular Semester	Lecture (hours/week)	Seminar (hours/week)	Lab. (hours/week)	Credits	ECTS
CMP 409	B	Fall	3.00	1.00	0.00	3.50	6.00

Lecturer	Artur Koci, PhD
Assistant	Erjola Osmani, Msc
Course language	Albanian
Course level	Master
Description	Techniques for achieving security in multi-user computer systems and distributed computer systems: Basics of cryptography, network security applications and system security, conventional encryption and message confidentiality, public-key cryptography and message authentication, authentication applications. Electronic mail, IP, web, and network management security. Intruders, viruses, and firewalls.
Objectives	The course will provide an introduction to applied cryptography, including plaintext, ciphertext, symmetric cryptography, asymmetric cryptography, and digital signatures.
Core Concepts	Encryption algorithms, cryptography, hash functions

Course Outline

Week	Topic
1	Introduction and Computer Security Concepts
2	Cryptography - Symmetric Encryption and Message Confidentiality
3	Public-Key Cryptography and Message Authentication
4	Part II: Network Security Applications - Key Distribution and User Authentication
5	Network Access Control and Cloud Security
6	Transport-Level Security
7	Wireless Network Security
8	Midterm Exam
9	Electronic Mail Security
10	IP Security
11	Part III: System Security - Malicious Software
12	Intruders
13	Firewalls
14	Network Management Security
15	Legal and Ethical Issues
16	Final Exam

Prerequisites	The student must attend the course at a minimum rate of 75%.
Literature	• Core Textbook: William Stallings, Network Security Essentials: Applications and Standards, 6th Edition. Pearson. 2017. ISBN-13: 9780134527338.
References	• Charlie Kaufman, Radia Perlman, and Mike Speciner, Network Security: PRIVATE Communication in a PUBLIC World, Prentice Hall, ISBN 0-13-046019-2

Course Evaluation

In-term Studies	Quantity	Percentage
Midterms	1	25
Quizzes	0	0
Projects	1	20
Term Projects	0	0
Laboratory	0	0
Class Participation	1	10
Total in-term evaluation percent		**55**
Final exam percent		**45**
Total		**100**

ECTS Workload (Based on Student Workload)

Activities	Quantity	Duration (hours)	Total (hours)
Course duration (Including the exam week: 16x Total hours of the course)	16	4	64
Study hours outside the classroom (Preparation, Practice, etc.)	14	2	28
Duties	1	20	20
Midterms	1	10	10
Final Exam	1	28	28
Other	0	0	0
Total Work Load			**150**
Total Work Load / 25 (hours)			**6.00**
ECTS			**6.00**