INFORMATION SECURITY

1.GENERAL

SCHOOL	ENGINEERING		
DEPARTMENT	INFORMATICS AND COMPUTER ENGINEERING		
LEVEL OF STUDY	POST-GRADUATE		
COURSE UNIT CODE	**csCYB104**	**SEMESTER OF STUDY**	1st
COURSE TITLE	**INFORMATION SECURITY**		

COURSEWORK BREAKDOWN	**TEACHING WEEKLY HOURS**	**ECTS Credits**
Lectures	2	
Tutorials	1	
	3	**3**

COURSE UNIT TYPE	Compulsory, Specialized general knowledge
PREREQUISITES :	NONE
LANGUAGE OF INSTRUCTION/EXAMS:	ENGLISH
COURSE DELIVERED TO ERASMUS STUDENTS	YES
MODULE WEB PAGE (URL)	http://

2.LEARNING OUTCOMES

Learning Outcomes

The course aims at training students in the area of information and communication systems security, as well as in privacy protection technologies. Overall, the course has been planned taking the following points into consideration:
Upon successful completion of this course, the student will be able to:

- the deepening and consolidation of a high level of knowledge in the breadth of the field of Information Security.
- Acquire specialized skills in solving Information Security Systems problems with the aim of gaining a base for research and innovation design in the field of Security.

In particular the student must:

- Understand the structure and operation of Information Security (at Internet) Systems.
- Have a thorough knowledge of Network layers, IPv4, ICMP, ARP, Sniffing, MAC Spoofing, .
- Know and explain the security of internet applications, network architectures, signaling, and communication protocols.
- Evaluate the Cryptology's criteria
- Choose the appropriate digital signatures and digital certificates.
- Analyze and compare the modern cryptographic algorithms
- Create and design the Security Management Systems
- Learn the Legal framework of the Internet Privacy and Cybercrime

General Skills

- Retrieve, analyze and synthesize data and information, with the use of necessary technologies
- Team work
- Be critical and self-critical
- Advance free, creative and causative thinking

3.COURSE CONTENTS

The description contains the material to be covered during 13 sessions.

1) Basic security concepts and issues
2) Networks and Internet
3) Secured Interface Connection
4) Internet programming
5) Security of Internet Applications
6) Introduction to Cryptology
7) Modern Cryptographic Algorithms
8) Message Integrity and Authenticity
9) Digital Signatures and Digital Certificates
10) Virtual Private Networks
11) Security Management
12) Response to Security Events & Digital Forensics
13) Internet Privacy and Cybercrime

4.TEACHING METHODS - ASSESSMENT

MODE OF DELIVERY	Face to face
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY	• Use of ICT in Course Teaching • Use of the Open eClass system, with uploaded notes, lectures, exercises for practice and communication with students.
TEACHING METHODS	
ASSESSMENT METHODS	I. A written final examination (60%) and II. Research work (40%)

Method description	***Semester Workload***
Lectures	26
Tutorials	13
Research work	25
Self study	48
Total course hours (25 h workload per ECTS)	***125***

5.RESOURCES

Essential

- *Κρυπτογραφία & Ασφάλεια Δικτύων Αρχές& Εφαρμογές, William Stallings, Εκδόσεις ΙΩΝ.*
- *Κάτσικα Σ, Γκρίτζαλη Δ., Γκρίτζαλη Σ. Ασφάλεια Πληροφοριακών Συστημάτων, Εκδόσεις Νέες Τεχνολογίες.*
- *Γκρίτζαλης Σ., Γκρίτζαλης Δ., Κάτσικας Σ., Ασφάλεια Δικτύων Υπολογιστών, Α. ΠΑΠΑΣΩΤΗΡΙΟΥ & ΣΙΑ ΟΕ, 2003.*
- *Business Information Systems: Technology, Development and Management for the*

Modern Business, Paul Bocij, Andrew Greasley, Simon Hickie, Sixth edition, Pearson 2018

Recommended

- *Cybersecurity, Mowbray Thomas J.,* Third edition, *John Wiley & Sons In*
- *Anderson R., Security Engineering, Wiley (2nd ed.), USA, 2008.*
- *Gollmann D., Computer Security, 3rd edition, Wiley, March 2011.*
- *Pfleeger C., Security in Computing, Prentice Hall (4th ed.), USA, 2006.*
- *Rhodes-Ousley M. Information security: The complete reference. McGraw-Hill Education. Σουρής Α., Πατσός Δ., Γρηγοριάδης Ν., Ασφάλεια της Πληροφορίας, Εκδόσεις Νέες Τεχνολογίες, 2004*