

Course Code MNC481 Course Name Networks Security

Pre-Requisite CSC208

Year of Study 4<sup>th</sup> / 8<sup>th</sup> **Course Type** Major Elective Language of Instruction

**ECTS Credit** 

7.5

English

Level of Course BSc/1st Cycle

Mode of Delivery On Campus

## **Course Objectives:**

This course introduces important topics in network and inter-network security. Cryptography (encryption/decryption), web site security, remote logins.

### Learning Outcomes:

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

- Describe and exemplify fundamental network security concepts
- Recall, classify and state procedure and functional details of symmetric and asymmetric encryption
- Interpret, categorize and explain computer security threats and countermeasure
- State and describe concepts relating to authentication and IP-related services (e-mail and web security)
- · Recall and explain details relating to commercial applications of network security

#### **Teaching Methodology:**

Lectures 42 Hours

Labs 30 Hours

#### **Course Content**

The fundamentals of cryptography, encryption/decryption, public-key and symmetric cryptography, the RSA algorithm and the data encryption standard (DES). Secure socket layer (SSL) and PGP encryption. Security of e-commerce transactions, http and https.

Sources of vulnerability in a corporate network, firewalls, software and hardware firewalls, firewall configuration. Closing the security holes with TCP/IP ports that remain active without any reason, identifying other points of entrance in the corporate inter-network.

Viruses, types of viruses, virus signatures, anti-virus software. Spread of viruses with e-mail, executables and macro viruses. Single point of checking for incoming data.

Corporate security policies, the importance of physical security and security procedures in the corporation. Cultivating the sense of responsibility by the individual employees. Passwords and authentication. Privacy on the Internet. Malicious WWW browsers, other software that collect private data while users are connected on the Internet.

Hackers and the hacker community, characteristic of hackers, the tools used by hackers. How to detect hacker trials to intrude the corporate network. How to handle possible hacker intrusions.

## **Assessment Methods:**

Final Exams

Labs/Assignment

Mid term

# **Required Textbooks/Reading:**

Title	Author(s)	Publisher	Year
NETWORK SECURITY ESSENTIALS	Stallings William	Prentice Hall	
CRYPTOGRAPHY AND NETWORK	Stallings William		
SECURITY: PRINCIPLES AND			
PRACTICE			
PRINCIPLES OF COMPUTER	Conklin et al.	Mc GrawHill	
SECURITY			