FACULTY OF **ENGINEERING**

DEGREE COURSE: **COMPUTER AND CONTROL ENGINEERING**

MASTER DEGREE: **COMPUTER AND CONTROL ENGINEERING**

**SUBJECT**: IT SECURITY

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## OBJECTIVES

Giving the students the basic concepts of computer security such as confidentiality, authentication, integrity, privacy and accounting. Understanding the different types of encryption (symmetric and asymmetric). Having a look to different security aspects in operative systems, networks, file systems, mobile communication and devices. Understanding different control access policies.

## CONTENTS

IT security introduction: definitions.
Private key and symmetric encryption.
Public key and asymmetric encryption.
Data integrity algorithms.
Key Establishment Protocols and Authentication issues.
E-mail security.
Access controls.
Security in the operative systems.
Software security.
Web and Internet security.
Mobile devices security.
Computer forensics basics.
Security assessment.

## LEARNING OUTCOMES

The students are expected to acquire a solid background in the field of IT security. At the end of the course, they will be able to solve in practice some case studies where security theory can be applied. Moreover, they will become very sensitive to problems related to the security of computer systems.

## ASSESSMENT

Written exam: multiple-choice tests and open-ended questions

# RECOMMENDED TEXTBOOKS

- W. Stalling: Cryptography and Network Security, International Edition, Pearson.
- D. Gollmann: Computer Security, Wiley.
- J. Scambray, M. Shema: Hacking Exposed: Web Applications, McGraw-Hill.
- A. Philipp, D. Cowen, C. Davis: Hacking Exposed: Computer Forensics, McGraw-Hill.