STI
MEI/MIEBIOM
2022/2023

Course Presentation

Jorge Granjal
University of Coimbra

Outline

1. Organization

2. Course contents

3. Lectures schedule

4. Labs & projects schedule

5. Evaluation

6. Bibliography

Organization

Lecture (Theory and Practical classes)

Jorge Granjal

Gab D3.22

jgranjal@dei.uc.pt

Lecture (Practical classes)

Bruno Sousa

Gab D3.13

bmsousa@dei.uc.pt

Course contents

1. Computer and Network Security Concepts

2. Electronic mail security

3. Cryptography (symmetric ciphers, asymmetric ciphers, data integrity)

4. Key Management

5. User authentication

6. IP Security

7. Denial of service and firewalls

8. Network access control and cloud security

9. Web and transport-level security

10. Intrusion prevention and detection

11. Security auditing

12. Wireless network security

Schedule (theoretical classes)

06 Feb 2023	Computer and Network Security Concepts
13 Feb 2022	Electronic mail security
20 Feb 2023	Web and Transport Layer Security
27 Feb 2023	IP Security
06 Mar 2023	Firewalls and Intrusion Detection
13 Mar 2023	Key management and User authentication
20 Mar 2023	Data integrity
27 Apr 2023	Security auditing
03 Apr 2023	*Easter break*
10 Apr 2023	Symmetric Encryption (1)
17 Apr 2023	Symmetric Encryption (2)
24 May 2023	Asymmetric Encryption (1)
01 May 2023	Asymmetric Encryption (2)
08 May 2023	Wireless Network Security (1)
15 May 2023	Wireless Network Security (2)

Schedule (practical classes)

06 Feb 2023	Electronic mail security using PGP
13 Feb 2022	Certification Authorities using OpenSSL
20 Feb 2023	VPN using OpenVPN
27 Feb 2023	Practical Assignment 1 (support)
06 Mar 2023	Practical Assignment 1 (defenses)
13 Mar 2023	Firewalls using IPTables (system)
20 Mar 2023	Firewalls using IPTables (network)
27 Apr 2023	Intrusion detection and prevention
03 Apr 2023	*Easter break*
10 Apr 2023	Practical Assignment 2 (support)
17 Apr 2023	Practical Assignment 2 (defenses)
24 May 2023	Web application security
01 May 2023	Web applicaton firewalls
08 May 2023	Practical Assignment 3 (support)
15 May 2023	Practical Assignment 3 (defenses)

Evaluation

Final exam: 8 points

Lab projects: 12 points

- Three (3) projects to be performed individually or in groups of 2 students

- Presented and discussed in practical classes

- Plagiarism implies exclusion from course ("Não Admitido")

- Minimum of 40% on each component (assignments, exam)

Bibliography

Cryptography and network security, Stallings, Pearson, 2017

Segurança Prática em Sistemas e Redes com Linux, Jorge Granjal, FCA, 2017

Segurança em Redes Informáticas, André Zúquete, FCA, 2006

Computer Security: Principles and Practice, Stallings and Brown, Pearson, 2015

Introduction to Computer Security, Goodrich & Tamassia, Pearson, 2014