

Course guides

230714 - NSAA - Network Security - Authentication and Authorization

Last modified: 01/05/2019

Unit in charge: Barcelona School of Telecommunications Engineering
Teaching unit: 744 - ENTEL - Department of Network Engineering.

Degree: MASTER'S DEGREE IN TELECOMMUNICATIONS ENGINEERING (Syllabus 2013). (Optional subject).

Academic year: 2018 **ECTS Credits:** 5.0 **Languages:** English

LECTURER

Coordinating lecturer: JUAN BAUTISTA HERNANDEZ SERRANO

Others: Segon quadrimestre:
JUAN BAUTISTA HERNANDEZ SERRANO - 31

PRIOR SKILLS

Basic knowledge of Linux OS.
Understanding of security-related topics; for instance: cryptography, network security protocols, etc.
Medium-average computer programming skills.

REQUIREMENTS

Network Security

TEACHING METHODOLOGY

Theoretical classes encouraging the students to participate in the class discussion
Lab sessions that reinforce the contents learnt during the theoretical classes and put them into practice.

LEARNING OBJECTIVES OF THE SUBJECT

Upon finishing this course, students should be able to understand how authentication and authorization methods and protocols work at the different OSI layer, to identify the potential threats, and to know best practises and countermeasures.

STUDY LOAD

Type	Hours	Percentage
Hours small group	39,0	31.20
Self study	86,0	68.80

Total learning time: 125 h



CONTENTS

Crypto Background

Description:

An overview of the necessary cryptographic background

Full-or-part-time: 19 h

Laboratory classes: 6h

Self study : 13h

Authentication Protocols

Description:

Understanding authentication protocols based on something you have, something you are and/or something you know. It includes replay attacks, nonces, SK authentication, PK authentication, DS authentication, passwords, hashed passwords, password cracking, biometrics, 2-factor authentication.

Full-or-part-time: 48 h

Laboratory classes: 15h

Self study : 33h

Access Authentication

Description:

Access Authentication, PAP; CHAP, MSCHAP, EAP, RADIUS, DIAMETER, WPA-Enterprise

Full-or-part-time: 19 h

Laboratory classes: 6h

Self study : 13h

Web Authentication

Description:

Sessions, Tokens, OAuth, OpenID connect

Full-or-part-time: 19 h

Laboratory classes: 6h

Self study : 13h

Mid-term exam

Description:

Theory and lab

Full-or-part-time: 10 h

Laboratory classes: 3h

Self study : 7h



Final exam

Description:

Final exam: theory and lab

Full-or-part-time: 10 h

Laboratory classes: 3h

Self study : 7h

GRADING SYSTEM

Mid-term exam: 30%

Final exam: 40%

Assignments: 20%

Attitude: 10%