UNIVERSIDAD DE CASTILLA - LA MANCHA
GUÍA DOCENTE

1. General information

Course: NETWORK SECURITY
Type: ELECTIVE
Degree: 407 - DEGREE PROGRAMME IN COMPUTER SCIENCE ENGINEERING
Center: 108 - SCHOOL OF COMPUTER SCIENCE OF C. REAL
Year: 4
Main language: Spanish
Use of additional languages:
Web site: https://campusvirtual.uclm.es

Code: 42340
ECTS credits: 6
Academic year: 2022-23
Group(s): 20
Duration: First semester
Second language:
English Friendly: Y
Bilingual: N

Lecturer: **CLETO MARTÍN ANGELINA** - Group(s): **20**

Building/Office	Department	Phone number	Email	Office hours
	TECNOLOGÍAS Y SISTEMAS DE INFORMACIÓN		Cleto.Martin@uclm.es	Available at https://esi.uclm.es/index.php/grado-en-ingenieria-informatica/profesorado/

2. Pre-Requisites

Compulsory subject for the Subject of Specific Technology of Computer Engineering, it is advisable to have studied the Basic Training modules and the Common module to the Computer Science Branch (Modules I and II). It is therefore recommended to have a clear understanding of the basic concepts of interconnection and configuration of network devices, and concepts of programming and operating systems.

3. Justification in the curriculum, relation to other subjects and to the profession

This subject is part of the subject Specific Technology of Computer Engineering, within the Computer Engineering intensification. It is a compulsory subject in order to obtain the mention corresponding to the aforementioned specialisation.

It helps to achieve one of the skills that graduates in Computer Engineering at the UCLM must have, specifically, the ability [IC6]: Ability to understand, apply and manage the guarantee and security of computer systems.

The contents covered in this subject are closely related to those of other subjects taught in the plan, such as Computer Networks I, Computer Networks II, Network Design and Management, Wireless Devices and Networks, Cryptography, Operating Systems I and II.

4. Degree competences achieved in this course

Course competences

Code	Description
IC06	Ability to understand, apply, and manage the reliability and safety of digital systems.
INS01	Analysis, synthesis, and assessment skills.
INS02	Organising and planning skills.
INS04	Problem solving skills by the application of engineering techniques.
SIS01	Critical thinking.
SIS03	Autonomous learning.

5. Objectives or Learning Outcomes

Course learning outcomes

Description
Ability to explain and apply the security principles needed to protect a network and the devices in it.
Ability to design, set up and configure secure remote access.

6. Units / Contents

Unit 1: Network security principles
Unit 2: Types of attacks and threats specific to computer networks
Unit 3: Cryptography
Unit 4: Architecture for secure networks
Unit 5: Defence mechanisms and countermeasures

7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-							

SITE]	Lectures	IC06	0.72	18	N	-		
Individual tutoring sessions [ON-SITE]		IC06	0.18	4.5	N	-		
Study and Exam Preparation [OFF-SITE]	Self-study	IC06	2.1	52.5	N	-		
Other off-site activity [OFF-SITE]	Practical or hands-on activities	IC06	0.6	15	N	-		
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises	IC06 INS04 SIS01	0.6	15	Y	N		
Writing of reports or projects [OFF-SITE]	Self-study	IC06 INS01 INS02 INS04 SIS01 SIS03	0.9	22.5	Y	Y		
Laboratory practice or sessions [ON-SITE]	Practical or hands-on activities	IC06 INS04	0.6	15	Y	Y		
Other on-site activities [ON-SITE]	Assessment tests	IC06 INS01 INS04	0.15	3.75	Y	Y		
Other on-site activities [ON-SITE]	Assessment tests	IC06 INS01 INS04	0.15	3.75	Y	Y		
Total:			6	150				
Total credits of in-class work: 2.4						Total class time hours: 60		
Total credits of out of class work: 3.6						Total hours of out of class work: 90		

As: Assessable training activity

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System			
Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Theoretical papers assessment	15.00%	15.00%	Non-compulsory and recoverable activity to be carried out before the end of the school term.
Final test	0.00%	50.00%	Compulsory and recoverable activity to be taken on the date scheduled for the the final exam of the ordinary exam.
Laboratory sessions	25.00%	25.00%	Compulsory and recoverable activity to be carried out in the laboratory sessions.
Oral presentations assessment	10.00%	10.00%	Non-compulsory and recoverable activity. To be carried out in the theory/laboratory sessions for continuous mode students. Non-continuous mode students will be assessed for this activity through an alternative system in the ordinary exam session.
Test	25.00%	0.00%	Partial test 1. Compulsory and recoverable activity to be carried out at the end of the first half of the of the teaching period.
Test	25.00%	0.00%	Compulsory and recoverable activity to be carried out on the date scheduled for the final exams of the ordinary exams. On this date, the recovery for the ordinary exam of the partial exam 1 will be carried out.
Total:	100.00%	100.00%	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject , an ordinary and an extraordinary one (evaluating 100% of the competences).

Evaluation criteria for the final exam:

Continuous assessment:

In the compulsory activities, a minimum of 4 out of 10 must be obtained to consider the activity passed and to be able to pass the subject. The assessment of the activities will be global and, therefore, must be expressed by means of a single mark. There is an alternative assessment test for the activities that can be recovered in the extraordinary exam.

The partial tests will be common to all the theory/laboratory groups of the subject and will be graded horizontally by the teachers of the subject, i.e. each part of the partial tests will be assessed by the same teacher for all students.

The student passes the course if he/she obtains a minimum of 50 points out of 100 with the evaluations of each evaluation activity and passes all the compulsory activities.

For students who do not pass the course in the ordinary exam, the grade of the activities passed will be kept for the extraordinary exam. If an activity is not recoverable, its assessment will be kept for the extraordinary exam even if it has not been passed. In the case of passed recoverable activities, the student may sit the alternative assessment of these activities in the extraordinary exam and, in this case, the final mark for the activity will correspond to the last mark obtained.

The grade of the activities passed in any call, except for partial tests, will be kept for the next academic year at the student's request provided that it is equal to or higher than 5 and that the training activities and assessment criteria of the subject are not modified in the next academic year. Failure to appear for either of the two partial tests during the final exam will result in the grade of "No-show". If the student has not passed any of the compulsory assessment activities, the final mark for the course cannot exceed 4 out of 10.

Non-continuous evaluation:

Students may request, at the beginning of the term, to take the non-continuous assessment mode. Similarly, students may change to the non-continuous assessment mode if they have not participated during the period of classes in assessable activities that together account for at least 50% of the total assessment of the subject. If a student has reached this 50% of assessable activities or if, in any case, the period of classes has ended, he/she will be considered in continuous assessment without the possibility of changing assessment mode.

Students who choose the non-continuous assessment mode will be graded globally, in 2 annual exams, one ordinary and one extraordinary, assessing 100% of the competences, through the assessment systems indicated in the column "Non-continuous assessment".

In the "non-continuous" assessment mode, it is not compulsory to keep the marks obtained by the student in the activities or tests (progress or partial) that

he/she has taken in the continuous assessment mode.

Specifications for the resit/retake exam:

Assessment tests will be given for all recoverable activities.

Specifications for the second resit / retake exam:

Same characteristics as in the extraordinary call.

9. Assignments, course calendar and important dates

Not related to the syllabus/contents

Hours	hours

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Ross Anderson	Security Engineering, 2nd Edition	Wiley		978-0470068526	2008	
William Stallings	Network Security Essentials Applications and Standards, 5/E	Prentice Hall			2013	
Charles P. Pfleeger, Shari Lawrence Pfleeger	Security in Computing, 4th Edition	Prentice Hall		978-0132390774	2006	