UNIVERSIDAD DE CASTILLA - LA MANCHA
GUÍA DOCENTE

Course: NETWORK SECURITY

Type: CORE COURSE

Degree: 347 - DEGREE PROGRAMME IN COMPUTER SCIENCE ENGINEERING (CR)

Center: 108 - SCHOOL OF COMPUTER SCIENCE OF C. REAL

Year: 4

Main language: Spanish

Use of additional languages:

Web site:

Code: 42340

ECTS credits: 6

Academic year: 2023-24

Group(s): 20

Duration: First semester

Second language:

English Friendly: Y

Bilingual: N

Lecturer: **JOSE LUIS SEGURA LUCAS** - Group(s): **20**

Building/Office	Department	Phone number	Email	Office hours
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Lecturer: **JOSÉ LUIS SEGURA LUCAS** - Group(s): **20**

Building/Office	Department	Phone number	Email	Office hours
	TECNOLOGÍAS Y SISTEMAS DE INFORMACIÓN		Profesor.JLSegura@uclm.es	

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	
Mid-term test [ON-SITE]	Assessment tests	IC06 INS01 INS04	0.15	3.75	Y	Y	
Mid-term test [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
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.
Mid-term tests	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.
Theoretical papers assessment	15.00%	15.00%	Non-compulsory and recoverable activity to be carried out before the end of the school term.
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.
Mid-term tests	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 compulsory activities, a minimum mark of 40% is required in order to pass that activity and have the possibility to therefore pass the entire subject. A compulsory activity cannot be divided into eliminatory parts, nor can minimum marks be established for each of its parts. In the case of the activities that may be retaken (i.e., rescheduling), an alternative activity or test will be offered in the resit/retake exam call (convocatoria extraordinaria).

The partial tests will be common for all the theory/laboratory groups of the subject and will be evaluated by the lecturers of the subject in a serial way, i.e., each part of the partial tests will be evaluated by the same lecturer for all the students. A student is considered to pass the subject if she/he obtains a minimum of 50 points out of 100, taking into account the points obtained in all the evaluable activities, and also has passed all the compulsory activities.

For students who do not pass the subject in the final exam call (convocatoria ordinaria), the marks of activities already passed will be conserved for the resit/retake exam call (convocatoria extraordinaria). If an activity is not recoverable, its assessment will be preserved for the resit/retake exam call (convocatoria extraordinaria) even if it has not been passed. In the case of the passed recoverable activities, the student will have the opportunity to receive an alternative evaluation of those activities in the resit/retake exam call and, in that case, the final grade of the activity will correspond to the latter grade obtained.

The mark of the passed activities in any call, except for the partial tests, will be conserved for the subsequent academic year at the request of the student, provided that mark is equal or greater than 50% and that the activities and evaluation criteria of the subject remain unchanged prior to the beginning of that academic year.

The failure of a student to attend the partial 1 and partial 2 tests will automatically result in her/him receiving a "Failure to attend" (no presentado). If the student has not passed any compulsory evaluation activity, the maximum final grade will be 40%.

Non-continuous evaluation:

Students may apply at the beginning of the semester for the non-continuous assessment mode. In the same way, the student may change to the non-

continuous evaluation mode as long as she/he has not participated during the teaching period in evaluable activities that together account for at least 50% of the total mark of the subject. If a student has reached this 50% of the total obtainable mark or the teaching period is over, she/he will be considered in continuous assessment without the possibility of changing to non-continuous evaluation mode.

Students who take the non-continuous evaluation mode will be globally graded, in 2 annual calls per subject, an ordinary and an extraordinary one (evaluating 100% of the competences), through the assessment systems indicated in the column "Non-continuous evaluation".

In the "non-continuous evaluation" mode, it is not compulsory to keep the mark obtained by the student in the activities or tests (progress test or partial test) taken in the continuous assessment mode.

Specifications for the resit/retake exam:
Evaluation tests will be conducted for all recoverable activities.

The failure of a student to attend the partial 1 and partial 2 tests will automatically result in her/him receiving a "Failure to attend" (no presentado), except in the case that the student conserves the mark for partial 1 and partial 2 from the final exam call (convocatoria ordinaria). In the latter case, the student's carrying out of any other evaluable activity in the resit/retake exam call (convocatoria extraordinaria) will result in a numerical mark.

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**
Charles P. Pfleeger, Shari Lawrence Pfleeger	Security in Computing, 4th Edition	Prentice Hall		978-0132390774	2006	
Ross Anderson	Security Engineering, 2nd Edition	Wiley		978-0470068526	2008	
William Stallings	Network Security Essentials Applications and Standards, 5/E	Prentice Hall			2013	