

**1. General information****Course:** AUDIT AND SECURITY MANAGEMENT**Type:** CORE COURSE**Degree:** 2362 - MÁSTER UNIVERSITARIO EN INGENIERÍA INFORMÁTICA (CR) - (2020)**Center:** 108 - SCHOOL OF COMPUTER SCIENCE OF C. REAL**Year:** 1**Main language:** Spanish**Use of additional languages:****Web site:****Code:** 310608**ECTS credits:** 6**Academic year:** 2023-24**Group(s):** 20**Duration:** First semester**Second language:** English**English Friendly:** Y**Bilingual:** N**Lecturer:** DAVID GARCIA ROSADO - Group(s): 20

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**2. Pre-Requisites**

Not established

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

This subject is part of the "Quality and Security" knowledge block and offers the student a wide vision of the concepts of audit and security, as well as the role these concepts play in the information systems of companies. This subject is intertwined with the subject "Management, Certification and Evaluation of Information Systems" to offer a complete vision of the competencies related to guarantee the quality and security (as an outstanding element of quality) of the information technologies.

Through **Audit and Security Management**, the aim is to make known the aspects related to the audit and security of information systems and technologies, considering both legislative and regulatory aspects, among other dimensions.

In the Software Engineering profession, skills related to audit and security management are among the most demanded and recognized, from the governance and management of information technologies, to the creation and management of Information Security Management Systems (ISMS), the performance of Information System Risk Analysis and Management (ISRAM), as well as analysis of their impact on companies. The implementation of audit and security management departments (Internal Control), as well as addressing other challenges in emerging issues of audit and security management in Smart Cities, coming to understand existing regulations relating to cyber security, critical infrastructure, contingency plans and disaster recovery, are also key activities for this profession.

**4. Degree competences achieved in this course****Course competences**

Code	Description
CE06	Ability to secure, manage, audit and certify the quality of developments, processes, systems, services, applications and computing products.
INS03	Ability to manage information and data.
INS05	Argumentative skills to logically justify and explain decisions and opinions.
PER01	Team work abilities.
PER04	Interpersonal relationship skills.
PER05	Acknowledgement of human diversity, equal rights and cultural variety.
SIS01	Critical thinking.
SIS02	Ethical commitments.
SIS03	Autonomous learning.
SIS09	Care for quality.
UCLM02	Ability to use Information and Communication Technologies.
UCLM04	Professional ethics.

**5. Objectives or Learning Outcomes****Course learning outcomes****Description**

Assess and certify the security of the system software based on the existing rules and standards, as well as the most appropriate security maturity models  
Plan, implement and operate departments responsible for the audit, safety and quality control tasks in companies  
Perform an IT management audit based on existing rules and standards  
Perform a system security audit based on the existing rules and standards

## 6. Units / Contents

Unit 1: Information Systems Audit

Unit 2: Business continuity

Unit 3: Information Technology and Systems Government

Unit 4: Risk management

Unit 5: Information Systems Security

Unit 6: IT Security in the Organization

Unit 7: Cybersecurity

## ADDITIONAL COMMENTS, REMARKS

practices:

1. Business Continuity Plan.
2. Security Management and ICT Risk Analysis.

## 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]	Combination of methods	CE06	0.8	20	N	-	Master classes for the development of the topics and theoretical and practical lessons in the laboratory
Problem solving and/or case studies [ON-SITE]	Problem solving and exercises	INS05 PER01 PER04 SIS01	0.36	9	Y	N	Case Study Discussion
In-class Debates and forums [ON-SITE]	Debates	INS05 PER01 PER04 PER05 SIS01 UCLM02	0.16	4	Y	N	Discussions on real cases or related current proposals
Individual tutoring sessions [ON-SITE]	Other Methodologies	INS03	0.16	4	N	-	Tutoring to follow up on individual work
Group tutoring sessions [ON-SITE]	Group tutoring sessions	SIS03	0.08	2	N	-	Tutoring to follow up on group work
Study and Exam Preparation [OFF-SITE]	Self-study	CE06 INS03 SIS03	2.2	55	N	-	Study to be devoted to the study of the subject for the written tests
Project or Topic Presentations [ON-SITE]	Group Work	CE06 INS03 INS05 SIS01 SIS02 SIS09 UCLM02	0.16	4	Y	N	Presentation of the work in class and question rounds by the other students.
Practicum and practical activities report writing or preparation [OFF-SITE]	Group Work	CE06 INS03 INS05 SIS01 SIS02 SIS09	1	25	Y	Y	Preparation of two reports covering theoretical and practical content. This activity will have a group character.
Practicum and practical activities report writing or preparation [OFF-SITE]	Other Methodologies	CE06	0.4	10	Y	Y	Elaboration of a report covering practical contents This activity will have an individual character.
Laboratory practice or sessions [ON-SITE]	Practical or hands-on activities	INS03 INS05 PER04 SIS09 UCLM02	0.4	10	N	-	Preparation of practices in the laboratory
Progress test [ON-SITE]	Assessment tests	CE06 INS05 SIS01 UCLM04	0.12	3	Y	Y	Progress test with approximately half of the subject content
Final test [ON-SITE]	Assessment tests	CE06 INS05 SIS01 UCLM04	0.16	4	Y	Y	Final test with all the contents of the subject.
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%	
Test	25.00%	0.00%	Compulsory activity that can be retaken. Partial test of the first half of the temary (chapters 1-4). It will be held in the middle of the four-month period [ESC].
Test	25.00%	0.00%	Compulsory activity that can be retaken. Partial test of the second half of the temary (chapters 5-7). It will be held on the date stipulated in the official calendar for the regular final examination [ESC]
Assessment of problem solving and/or case studies	5.00%	5.00%	Non-compulsory activity that can be retaken. In class, practical cases and readings in which students will have to participate and get involved (in groups or individually depending on the type of activity) [INF].
Theoretical papers assessment	15.00%	15.00%	Compulsory activity that can be retaken. Deliverable of the theoretical group work [INF]

Practicum and practical activities reports assessment	20.00%	20.00%	Compulsory activity that can be retaken. It will consist of the delivery of 2 theoretical-practical works [LAB]
Oral presentations assessment	10.00%	10.00%	Non-compulsory activity that can be retaken. To be carried out during the theory/lab sessions in the case of continuous evaluation students. The non-continuous evaluation students will have an alternative evaluation system for this activity to be carried out within the planned exam dates of the final exam call (convocatoria ordinaria). [PRES]
<b>Total:</b>	<b>100.00%</b>	<b>100.00%</b>	

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. The evaluation of the activities will be global and therefore must be quantified by means of a single mark. 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 evaluation 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 evaluation mode.

#### Specifications for the resit/retake exam:

Evaluation tests will be conducted for all recoverable activities. The failure of a student to attend the final exam will automatically result in her/him receiving a "Failure to attend" (no presentado), except in the case that the student conserves the mark for the final exam 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 the resit/retake exam call.

9. Assignments, course calendar and important dates	
Not related to the syllabus/contents	
Hours	hours
General comments about the planning: This course will be taught in 1.5 hour sessions spread over the school calendar.	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	City	ISBN	Year	Description
Mellado, D., Sánchez, L.E., Fernández-Medina, E. y Piattini, M. (eds.)	IT Security Governance Innovations :Theory and Research	IDEA Group	EEUU	978-1-4666-2083-4	2013	
ISACA	COBIT 2019 Design Guide: Designing an Information and Technology Governance Solution	ISACA	Rolling Meadows, EEUU		2018	
ISACA	COBIT 2019 Framework. Introduction and Methodology	ISACA	Rolling Meadows, EEUU		2018	
Drewitt, T	Manager's Guide to ISO22301: A practical guide to developing and implementing a business	ITpg			2013	

Weill, P. y Ross, J.W.	continuity management system. IT Governance: How Top Performers Manage IT Decision Rights for Superior Results.	Harvard Business School		2004
Piattini, M. y Ruiz, F.	Gobierno y Gestión de las Tecnologías y los Sistemas de Información 2ed	Amazon		2022
ISACA	ITAF 3ª ed. A Professional Practices Framework for IS Audit/Assurance.	ISACA	Rolling Meadows, EEUU	2014
ISACA	COBIT 2019 Framework. Governance and Management Objectives.	ISACA	Rolling Meadows, EEUU	2018
Moeller, R.R.	Executive's Guide to IT Governance. Improving Systems Processes with Service Management, COBIT, and ITIL.	John Wiley & Sons	Hoboken	2013
ISACA	COBIT 2019 Implementation Guide: Implementing and Optimizing an Information and Technology Governance Solution	ISACA	Rolling Meadows, EEUU	2018
Mueller, L., Magee, M., Marounek, P. y Phillipson, A.	IBM IT Governance Approach. Business Performance through IT Execution.	IBM Red Books		2008
Del Peso, E., Del Peso, M., Piattini, M.	Auditoría de Tecnologías y Sistemas de Información	RA-MA EDITORIAL	9788478978496	2008
Fernández, C.M., Piattini, M.	Modelo para el gobierno de las TIC basado en las normas ISO	AENOR	978-84-8143-764-5	2012
ISACA	COBIT(R) 5: A Business Framework for the Governance and Management of Enterprise IT/ Enabling Processes/ Enabling Information/ Implementation/ for Risk			2014