ANX-PR/CL/001-01

LEARNING GUIDE

SUBJECT

565001072 - Intellectual Capital And Knowledge Management

DEGREE PROGRAMME

56IA - Grado En Ingenieria Electronica Industrial Y Automatica

ACADEMIC YEAR & SEMESTER

2025/26 - Semester 1

Index

Learning guide

1. Description

1.1. Subject details

Name of the subject	565001072 - Intellectual Capital And Knowledge Management
No of credits	3 ECTS
Type	Optional/elective
Academic year ot the programme	Fourth year
Semester of tuition	Semester 7
Tuition period	September-January
Tuition languages	English
Degree programme	56IA - Grado en Ingenieria Electronica Industrial y Automatica
Centre	56 - E.T.S. De Ingeniería Y Diseño Industrial
Academic year	2025-26

2. Faculty

2.1. Faculty members with subject teaching role

Name and surname	Office/Room	Email	Tutoring hours *
Irene Martin Rubio (Subject coordinator)	C-201	irene.mrubio@upm.es	Tu - 12:00 - 12:30 Appointment.

* The tutoring schedule is indicative and subject to possible changes. Please check tutoring times with the faculty member in charge.

3. Skills and learning outcomes *

3.1. Skills to be learned

CE 15. - Conocimientos básicos de los sistemas de producción y fabricación industrial.

CE 16. - Conocimientos básicos y aplicación de tecnologías medioambientales y sostenibilidad.

CE 17. - Conocimiento adecuado del concepto de empresa, marco institucional y jurídico de la empresa. Organización y gestión de empresas.

CE 27. - Conocimientos de principios y aplicaciones de los sistemas robotizados.

CG 10. - Creatividad.

CG 3. - Aplicar los conocimientos adquiridos para identificar, formular y resolver problemas en contextos amplios, siendo capaces de integrar los trabajando en equipos multidisciplinares

CG 4. - Comprender el impacto de la ingeniería en el medio ambiente, el desarrollo sostenible de la sociedad y la importancia de trabajar en un entorno profesional y responsable

CG 5. - Comunicar conocimientos y conclusiones, tanto de forma oral como escrita, a públicos especializados y no especializados de modo claro y sin ambigüedades.

CG 6. - Poseer las habilidades de aprendizaje que permitan continuar estudiando a lo largo de toda la vida para un desarrollo profesional adecuado

CG 7. - Incorporar las TIC y las tecnologías y herramientas de la Ingeniería Industrial en sus actividades profesionales

CG 8. - Uso de la lengua inglesa a nivel escrito y oral

CG 9. - Organización y planificación de proyectos y equipos humanos. Trabajo en equipo y capacidad de liderazgo.

3.2. Learning outcomes

RA86 - Comunicación efectiva, tanto por escrito como oralmente, de conocimientos, procedimientos,resultados e ideas.

RA88 - Capacidad de análisis, crítica y síntesis. Capacidad de trabajar en equipos unidisciplinares, multidisciplinares o multiculturales.

RA90 - Capacidad de relación con hablantes en inglés.

RA15 - Conocimientos y capacitaciones para entender el funcionamiento de la economía en general y el de la empresa en particular.

RA306 - Knowledge Management Capacity

RA89 - Capacidad para adaptarse y entender otras culturas y situaciones.

RA121 - Capacidad para diseñar circuitos en los que se asocien semiconductores de potencia y esquemas de protección.

* The Learning Guides should reflect the Skills and Learning Outcomes in the same way as indicated in the Degree Verification Memory. For this reason, they have not been translated into English and appear in Spanish.

4. Brief description of the subject and syllabus

4.1. Brief description of the subject

Organizations in the Knowledge Age, in Industry 4-0 need a new management model for generating, capturing, and leveraging intellectual capital assets in order to stay competitive. In this course, we review the fundamental elements required for developing a comprehensive system for creating and applying sustained levels of intellectual capital in this mellenium. A central question is how to measure this knowledge, this is Intellectual Capital.

4.2. Syllabus

1. 1.Introduction: Knowledge has become the resource, rather than a resource.
2. The concept of Organization.
   2.1. Sustainability Strategy.
3. Knowledge Management.
4. Organizational Learning.
5. Intellectual Capital.

5. Schedule

5.1. Subject schedule*

Week	Type 1 activities	Type 2 activities	Distant / On-line	Assessment activities
1	**Introduction** Duration: 02:00 Additional activities			
2	**1. Knowledge has become the resource, rather than a resource.** Duration: 01:00 Additional activities			**Presentations 1.1- optional** Group presentation Progressive assessment Presential Duration: 01:00
3	**1.Introduction: Knowledge has become the resource, rather than a resource.** Duration: 02:00 Additional activities			
4	**2, The concept of Organization.** Duration: 02:00 Additional activities			
5	**Case Study** Duration: 02:00 Additional activities			
6	**Case Study** Duration: 02:00 Additional activities			
7	**3. Knowledge Management.** Duration: 02:00 Additional activities			
8	**4.Organizational Learning.** Duration: 02:00 Additional activities			**Presentations 1.2- optional.** Group presentation Progressive assessment Presential Duration: 02:00
9	**5. Intellectual Capital** Duration: 02:00 Additional activities			
10	**Case Study** Duration: 02:00 Additional activities			**Presentations 2- compulsory.** Group presentation Progressive assessment Presential Duration: 04:00
11	**Case Study** Duration: 02:00 Additional activities			**Presentations 3- compulsory.** Group presentation Progressive assessment Presential Duration: 05:00

12	**Case Study** Duration: 02:00 Additional activities			**Presentations 3- Compulsory** Group presentation Progressive assessment Presential Duration: 02:00
13	**Case Study** Duration: 02:00 Additional activities			**Exam - Compulsory.** Written test Progressive assessment Presential Duration: 02:00
14	**Review - Intellectual Capital** Duration: 02:00 Additional activities			
15				**Exam** Written test Global examination Presential Duration: 00:00
16				
17				

Depending on the programme study plan, total values will be calculated according to the ECTS credit unit as 26/27 hours of student face-to-face contact and independent study time.

6. Activities and assessment criteria

6.1. Assessment activities

6.1.1. Assessment

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
2	Presentations 1.1- optional	Group presentation	Face-to-face	01:00	5%	5 / 10	CG 4. CG 5. CG 6. CG 10. CE 15. CE 17.
8	Presentations 1.2- optional.	Group presentation	Face-to-face	02:00	5%	5 / 10	CG 3. CG 5. CG 7. CG 10.
10	Presentations 2- compulsory.	Group presentation	Face-to-face	04:00	%	5 / 10	CG 3. CG 4. CG 5. CG 6. CG 7. CG 8. CG 9. CG 10. CE 15. CE 16. CE 17. CE 27.
11	Presentations 3- compulsory.	Group presentation	Face-to-face	05:00	25%	5 / 10	CG 3. CG 4. CG 5. CG 6. CG 7. CG 8. CG 9. CG 10. CE 15. CE 16. CE 17. CE 27.

12	Presentations 3- Compulsory	Group presentation	Face-to-face	02:00	25%	5 / 10	CG 3. CG 4. CG 5. CG 6. CG 7. CG 8. CG 9. CG 10. CE 15. CE 16. CE 17. CE 27.
13	Exam - Compulsory.	Written test	Face-to-face	02:00	40%	5 / 10	CG 3. CG 4. CG 5. CG 6. CG 8. CG 10. CE 15. CE 16. CE 17.

6.1.2. Global examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
15	Exam	Written test	Face-to-face	00:00	100%	5 / 10	CG 3. CG 4. CG 5. CG 6. CG 7. CG 8. CG 9. CG 10. CE 15. CE 16. CE 17. CE 27.

6.1.3. Referred (re-sit) examination

No se ha definido la evaluación extraordinaria.

6.2. Assessment criteria

Progressive Evaluation:

1) 60%: Team Group (Presentatios) . Minimum mark: 5 (marks betwee 0-10)

4 presentations:

2 optional activities during the class: each activity values 5% of the final mark. Total of two activities: 10%.

2 compulsories activities with a previous approval form: each activity values 25% ot the final mark. Total of two activities:50%

2) 40% Compulsory Exam. Minimum mark: 4 (marks between 0-10).

Exam: Test-Multiple Choice, Questions & Case Study.

The student pass the course, if the average mark is 5.

Evaluation by only Final Exam:

Exam. Minimum mark to pass the exam:5 (marks between 0-10)

Exam: Test-Multiple Choice, questions & Case Study

7. Teaching resources

7.1. Teaching resources for the subject

Name	Type	Notes
Martín Rubio, Irene, Slides in OCW	Web resource	http://ocw.upm.es/organizacion-de-empresas/intellectual-capital-and-knowledge-management/class-material
Martín Rubio, I. (2021). Challenges in Green Intellectual Capital and Knowledge Management in Sustainability and Industry 4.0. In book: De Castro y Masspi "Knowledge Management and Corporate Social Responsibility", IGI GLOBAL	Bibliography	
Companies Sustainability & Financial Reports	Web resource	Case Studies all around the world
Nonaka, I. & Takeuchi H. (1995). The Knowledge creating company: How Japanese Companies Create the Dynamics of Innovation. New York: Oxford University Press.	Bibliography	
European Commission (2021b) "Green Growth and Circular Econom y"https://ec.europa.eu/environment/green-growth/index_en.htm	Bibliography	
Davenport, T. H., & Prusak, L. (1998). Working knowledge: How organizations manage what they know. Harvard Business Press.	Bibliography	

Yubing Yu, Min Zhang & Baofeng Huo (2021) The impact of relational capital on green supply chain management and financial performance, Production Planning & Control, 32:10, 861-874	Bibliography	
Wenger, Etienne, C. (1998). Communities of practice: Learning, meaning and identity. Cambridge University Press.	Bibliography	
Edvinsson, L. & Malone, M.S. (1997). Intellectual Capital: Realizing your Compnay'es True Value by Finding its Hidden Brainpower. New York: Harper Business.	Bibliography	
Stewart, A.T. (1997). Intellectual Capital, The New Wealth of Organizations. New York: Bantam Doubleday Publishing.	Bibliography	

8. Other information

8.1. Other information about the subject

Sessions will follow Flipped Classroom methodology

Students are encouraged in a Project to consider proposals that can accomplish with SDG (Sustainable

Development Goals):

https://sdgs.un.org/es/goals

Students are encouraged to review Sustainability Reports all around the world.