



POLITÉCNICA

INTERNATIONAL  
CAMPUS OF  
EXCELLENCE

COORDINATION PROCESS OF  
LEARNING ACTIVITIES  
PR/CL/001

ingeniería  
diseño  
industrial

E.T.S. de Ingeniería y Diseño  
Industrial

# ANX-PR/CL/001-01

## LEARNING GUIDE

### SUBJECT

**565004072 - Intellectual Capital And Knowledge Management**

### DEGREE PROGRAMME

56IQ - Grado En Ingeniería Química

### ACADEMIC YEAR & SEMESTER

2025/26 - Semester 1

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## 1. Description

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### 1.1. Subject details

<b>Name of the subject</b>	565004072 - Intellectual Capital And Knowledge Management
<b>No of credits</b>	3 ECTS
<b>Type</b>	Optional/elective
<b>Academic year of the programme</b>	Fourth year
<b>Semester of tuition</b>	Semester 7
<b>Tuition period</b>	September-January
<b>Tuition languages</b>	English
<b>Degree programme</b>	56IQ - Grado en Ingeniería Química
<b>Centre</b>	56 - E.T.S. De Ingeniería Y Diseño Industrial
<b>Academic year</b>	2025-26

## 2. Faculty

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### 2.1. Faculty members with subject teaching role

<b>Name and surname</b>	<b>Office/Room</b>	<b>Email</b>	<b>Tutoring hours *</b>
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 \*

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### 3.1. Skills to be learned

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

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

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

RA402 - Capacidad de análisis, crítica y síntesis

RA240 - Conocimientos y capacitaciones para entender el funcionamiento de la economía general y de la empresa en particular.

RA385 - EURACE 7.2. Capacidad para funcionar eficazmente en contextos nacionales e internacionales, de forma individual y en equipo y cooperar tanto con ingenieros como con personas de otras disciplinas.

RA61 - Conocimientos básicos de los sistemas de producción industrial.

RA373 - EURACE 7.2 Capacidad para funcionar eficazmente en contextos nacionales e internacionales, de forma individual y en equipo y cooperar tanto con ingenieros como con personas de otras disciplinas

\* 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

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### 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	<b>Introduction</b> Duration: 02:00 Additional activities			
2	<b>1. Knowledge has become the resource, rather than a resource.</b> Duration: 02:00 Additional activities			
3	<b>1.Introduction: Knowledge has become the resource, rather than a resource.</b> Duration: 02:00 Additional activities			<b>Presentations 1.1- optional</b> Group presentation Progressive assessment Presential Duration: 01:00
4	<b>2, The concept of Organization.</b> Duration: 02:00 Additional activities			
5	<b>Case Study</b> Duration: 02:00 Additional activities			
6	<b>Review - Case Study</b> Duration: 02:00 Additional activities			
7	<b>3. Knowledge Management.</b> Duration: 02:00 Additional activities			
8	<b>Case Study</b> Duration: 02:00 Additional activities			<b>Presentations 1.2- optional.</b> Group presentation Progressive assessment Presential Duration: 02:00
9	<b>4.Organizational Learning.</b> Duration: 02:00 Additional activities			
10	<b>5. Intellectual Capital</b> Duration: 02:00 Additional activities			
11	<b>Review - Intellectual Capital</b> Duration: 02:00 Additional activities			<b>Presentations 2- compulsory.</b> Group presentation Progressive assessment Presential Duration: 05:00
12	<b>Review - Intellectual Capital</b> Duration: 02:00 Additional activities			<b>Presentations 3- Compulsory</b> Group presentation Progressive assessment Presential Duration: 02:00

13	<b>Review - Intellectual Capital</b> Duration: 02:00 Additional activities			<b>Exam - Compulsory.</b> Written test Progressive assessment Presential Duration: 02:00
14	<b>Review - Intellectual Capital</b> Duration: 02:00 Additional activities			
15	<b>Review - Intellectual Capital</b> Duration: 02:00 Additional activities			<b>Exam</b> Written test Global examination Presential Duration: 02:00
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
3	Presentations 1.1- optional	Group presentation	Face-to-face	01:00	5%	5 / 10	CG 10 CG 5 CG 6 CG 7 CG 8
8	Presentations 1.2- optional.	Group presentation	Face-to-face	02:00	5%	5 / 10	CG 10 CG 5 CG 8
11	Presentations 2- compulsory.	Group presentation	Face-to-face	05:00	25%	5 / 10	CG 10 CG 3 CG 4 CG 5 CG 6 CG 7 CG 8 CG 9 CE 15 CE 17
12	Presentations 3- Compulsory	Group presentation	Face-to-face	02:00	25%	5 / 10	CG 10 CG 3 CG 4 CG 5 CG 6 CG 7 CG 8 CG 9 CE 15 CE 17
13	Exam - Compulsory.	Written test	Face-to-face	02:00	40%	5 / 10	

#### 6.1.2. Global examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills

15	Exam	Written test	Face-to-face	02:00	100%	5 / 10	CG 10 CG 3 CG 4 CG 5 CG 6 CG 7 CG 8 CG 9 CE 15 CE 17
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### 6.1.3. Referred (re-sit) examination

No se ha definido la evaluación extraordinaria.

## 6.2. Assessment criteria

### Progressive Evaluation:

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

4 presentations:

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

2 compulsory activities with a previous approval form: each activity values 25% of 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	<a href="http://ocw.upm.es/organizacion-de-empresas/intellectual-capital-and-knowledge-management/class-material">http://ocw.upm.es/organizacion-de-empresas/intellectual-capital-and-knowledge-management/class-material</a>
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 Economy" <a href="https://ec.europa.eu/environment/green-growth/index_en.htm">https://ec.europa.eu/environment/green-growth/index_en.htm</a>	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 Company's 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

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### 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 all SDG (Sustainable

Development Goals):

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

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