ANX-PR/CL/001-01

LEARNING GUIDE

SUBJECT

103000843 - Introduction To Technology Watch And Competitive I

DEGREE PROGRAMME

10AZ - Master Universitario En Innovación Digital

ACADEMIC YEAR & SEMESTER

2025/26 - Semester 2

Index

Learning guide

1. Description

1.1. Subject details

Name of the subject	103000843 - Introduction To Technology Watch And Competitive I
No of credits	1 ECTS
Type	Compulsory
Academic year ot the programme	First year
Semester of tuition	Semester 2
Tuition period	February-June
Tuition languages	English
Degree programme	10AZ - Master Universitario en Innovación Digital
Centre	10 - E.T.S. De Ingenieros Informáticos
Academic year	2025-26

2. Faculty

2.1. Faculty members with subject teaching role

Name and surname	Office/Room	Email	Tutoring hours *
Alberto Tejero Lopez (Subject coordinator)	Office D5215	alberto.tejero@upm.es	W - 09:00 - 10:00 W - 14:00 - 15:00

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

3. Prior knowledge recommended to take the subject

3.1. Recommended (passed) subjects

- Introduction To Innovation And Entrepreneurship Ma

3.2. Other recommended learning outcomes

The subject - other recommended learning outcomes, are not defined.

4. Skills and learning outcomes *

4.1. Skills to be learned

CB07 - Que los estudiantes sepan aplicar los conocimientos adquiridos y su capacidad de resolución de problemas en entornos nuevos o poco conocidos dentro de contextos más amplios (o multidisciplinares) relacionados con su área de estudio

CB08 - Que los estudiantes sean capaces de integrar conocimientos y enfrentarse a la complejidad de formular juicios a partir de una información que, siendo incompleta o limitada, incluya reflexiones sobre las responsabilidades sociales y éticas vinculadas a la aplicación de sus conocimientos y juicios

CB09 - Que los estudiantes sepan comunicar sus conclusiones y los conocimientos y razones últimas que las sustentan a públicos especializados y no especializados de un modo claro y sin ambigüedades

CE-EIT03 - Capacidad para identificar el nivel de madurez de una tecnología y desarrollar e interpretar un roadmap tecnológico seleccionando la mejor manera de proteger esa tecnología dependiendo de su tipo, nivel de madurez y las restricciones geográficas, y entendiendo las consecuencias de acceder a ella y comercializarla.

CG01 - Que los estudiantes sean capaces de predecir y controlar la evolución de situaciones complejas mediante el desarrollo de nuevas e innovadoras metodologías de trabajo adaptadas al ámbito científico/investigador, tecnológico o profesional concreto, en general multidisciplinar, en el que se desarrolle su actividad.

CG03 - La capacidad de usar la lengua inglesa de manera competente, es decir, con capacitación para tareas complejas de trabajo y estudio.

CG07 - Capacidad de trabajar y comunicarse también en contextos internacionales.

CG08 - La capacidad de traducir innovaciones en soluciones comerciales factibles.

CG09 - La capacidad de transformar las experiencias prácticas en problemas y desafíos de investigación.

4.2. Learning outcomes

RA104 - - In depth understanding the basics of technology watch and transfer

* 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.

5. Brief description of the subject and syllabus

5.1. Brief description of the subject

To provide students with some conceptual and practical tools to understand the possible evolution of technologies for specific purposes.

To know how develop and interpret a technology roadmap in specific technical areas.

To understand the relationship of technology intelligence to decision making in innovation management.

5.2. Syllabus

1. Welcome session
   1.1. Contents, grading processes and groups creation
2. Technology watch basics
   2.1. Technology watch basic concepts, procedure and tools
3. Definition of the technology watch purpose
   3.1. Definition of the purpose and identification of application points
4. TW Report - Critical watch factors
   4.1. Introduction to the technology watch report and identification of critical watch factors
5. TW Report - Scientific-technological information
   5.1. Identification and analysis of scientific-technological sources of information
6. TW Report - Market and industry information
   6.1. Identification and analysis of market and industrial sources of information
7. TW Report - Analysis of information
   7.1. Analysis of the information gathered and drawing conclusions to complete the TW report

6. Schedule

6.1. Subject schedule*

Week	Type 1 activities	Type 2 activities	Distant / On-line	Assessment activities
1	**Welcome session and groups creation** Duration: 01:00 Lecture			**Attendance and Class Participation in class** Other assessment Progressive assessment Presential Duration: 01:00
2	**Technology watch basics** Duration: 01:00 Lecture **Definition of the technology watch purpose** Duration: 01:00 Lecture			
3	**TW Report - Critical watch factors** Duration: 01:00 Lecture **TW Report - Scientific-technological information** Duration: 01:00 Lecture			
4	**TW Report - Market and industry information** Duration: 01:00 Lecture **TW Report - Analysis of information** Duration: 01:00 Lecture			
5	**Individual exam** Duration: 02:00 Additional activities			**Individual exam** Written test Progressive assessment Presential Duration: 02:00
6	**Group presentations** Duration: 02:00 Additional activities			**Group presentations** Group presentation Progressive assessment Presential Duration: 02:00 **Technology Watch Report** Group work Progressive assessment Presential Duration: 01:00

7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				**Global assessment test and Technology Watch Report (individual)** Other assessment Global examination Presential Duration: 02:00

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.

7. Activities and assessment criteria

7.1. Assessment activities

7.1.1. Assessment

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
1	Attendance and Class Participation in class	Other assessment	Face-to-face	01:00	10%	5 / 10	
5	Individual exam	Written test	Face-to-face	02:00	30%	5 / 10	CB07 CB08 CB09 CG01 CG03 CG07 CG08 CG09 CE-EIT03
6	Group presentations	Group presentation	Face-to-face	02:00	20%	5 / 10	CB07 CB08 CB09 CG01 CG03 CG07 CG08 CG09 CE-EIT03
6	Technology Watch Report	Group work	Face-to-face	01:00	40%	5 / 10	CB07 CB08 CB09 CG01 CG03 CG07 CG08 CG09 CE-EIT03

7.1.2. Global examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills

17	Global assessment test and Technology Watch Report (individual)	Other assessment	Face-to-face	02:00	70%	5 / 10	CB07 CB08 CB09 CG01 CG03 CG07 CG08 CG09 CE-EIT03

7.1.3. Referred (re-sit) examination

Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
Extraordinary assessment test	Other assessment	Face-to-face	02:00	70%	5 / 10	CB07 CB08 CB09 CG01 CG03 CG07 CG08 CG09 CE-EIT03

7.2. Assessment criteria

Progressive assessment

Criteria	Percentage
Group presentations	20%
Technology Watch Report	40%
Individual exam	30%
Attendance and Class Participation	10%

Global assessment test

Evaluation activity	Modality	Weight	Dates	Contents
Individual exam and technology watch report submission	Individual	70%	June	Final exam of the subject for those students who have not been able to pass the subject through the progressive evaluation system and submission of the technology watch report

Extraordinary assessment test

Evaluation activity	Modality	Weight	Dates	Contents
Individual exam and technology watch report submission	Individual	70%	July	Final exam of the subject for those students who have not been able to pass the subject through the progressive evaluation system and submission of the technology watch report

NOTE: The activities that cannot be recovered in the "Global assessment test" and "Extraordinary assessment test" are the following: the presentation of the technology watch in a group (20%) and attendance and participation in class during the course (10%).

8. Teaching resources

8.1. Teaching resources for the subject

Name	Type	Notes
1. COTEC (1999). Pautas Metodológicas en Gestión de la Tecnología y de la Innovación para Empresas TEMAGUIDE. Madrid: Fundación COTEC para la Innovación Tecnológica.	Bibliography	
2. Georghiou, L., Cassingena, H., Keenan, M., Miles, I. Popper, R. (2008). ?The Handbook of technology foresight. Concepts and practice?. PRIME Series on Research and Innovation Policy, Edward Edgar Publishing Ltd.	Bibliography	
3. Gestión de la I+D+i: Sistema de vigilancia tecnológica e inteligencia competitiva. UNE 166006:2011	Bibliography	
4. Miles, I. ?From futures to foresight? in (Georghiouet al., 2008). ?The Handbook of technology foresight. Concepts and practice?.	Bibliography	
5. Moehrle, M., Isenmann, R. Phaal, R. (Edts.) (2013). ?Technology roadmapping for strategy and innovation: charting the route to success?. Springer.	Bibliography	
6. Ramona-Mihaela MATEI, Ioan RADU. Conceptual Relationship between Information and Communication Technologies and Competitive Intelligence Activities	Bibliography	

7. René Rohrbeck: Harnessing a Network of Experts for Competitive Advantage: Technology Scouting in the ICT Industry. R&D Management, Vol. 40, No. 2 pp. 169-180 http://www3.interscience.wiley.com/journal/123275929/abstract	Bibliography	
8. Tejero, A. and León, G. (2017). Plataformas cognitivas de inteligencia tecnológica como herramienta de apoyo a la inteligencia competitiva de las pymes de base tecnológica. Economía industrial, (406), 123-136.	Bibliography	
? Slides used in the lectures ? On-line material ? Selected recorded interviews with technology-based entrepreneurs ? Selected recorded interviews with business angels ? References of some case studies	Others	Available on EIT Digital Moodle e-learning platform during the course.

9. Other information

9.1. Other information about the subject

In this subject, the United Nations SDG7.Affordable and clean energy, SDG9.Industry, innovation and infrastructure, SDG12.Responsible consumption and production and SDG13.Climate action are worked through the group projects.