ANX-PR/CL/001-01

LEARNING GUIDE

SUBJECT

103000843 - Introduction To Technology Watch And Competitive Intelligence

DEGREE PROGRAMME

10AZ - Master Universitario en Innovación Digital

ACADEMIC YEAR & SEMESTER

2020/21 - Semester 2

Index

Learning guide

1. Description

1.1. Subject details

Name of the subject	103000843 - Introduction To Technology Watch And Competitive Intelligence
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 - Escuela Tecnica Superior de Ingenieros Informaticos
Academic year	2020-21

2. Faculty

2.1. Faculty members with subject teaching role

Name and surname	Office/Room	Email	Tutoring hours *
Pilar Quevedo Cano (Subject coordinator)	5217	pilar.quevedo@upm.es	W - 10:00 - 12:00 The tutoring schedule is indicative and subject to possible changes. Please check tutoring times with the faculty member in charge.

* 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

The subject - recommended (passed), are not defined.

3.2. Other recommended learning outcomes

- According to general prerequisites for EIT Digital master program this is the first course for all enrolled students in the Master Degree. Students should have finished their Engineering Degree Project (240 ECTS), accepted in the Master and formally regis

4. Skills and learning outcomes *

4.1. Skills to be learned

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

After presenting the basic elements of innovation management, students will receive detailed information on tools and procedures related to the identification, selection and eventually absorption/adaptation of technologies, which could be useful for the selection of the technologies required to implement their own business projects in the Master Degree.

5.2. Syllabus

1. Technology evolution
    1.1. Technology maturation
    1.2. Technology roadmaps
    1.3. Technology forecasting
    1.4. Introduction to quantitative approaches in forecasting: econometrics, exponential-smoothing techniques, s-curves, other.
2. Technology watch
    2.1. Processes used
    2.2. Internal and external
    2.3. Scouting networks
    2.4. Tools for technology watch
3. Technology intelligence

3.1. Use in decision making

3.2. Trend-charts

3.3. Connection to the maintenance of IP portfolio

3.4. Road mapping of products/services

4. Technology transfer

4.1. Technology absorption

4.2. Technology transition

5. Work on a case study (group activity)

5.1. Big data in some sectors (e.g. health)

5.2. Visual analytics

6. Schedule

6.1. Subject schedule*

Week	Face-to-face classroom activities	Face-to-face laboratory activities	Distant / On-line	Assessment activities
1			**Technology evolution** Duration: 02:00 **Technology evolution** Duration: 01:00 **Technology evolution** Duration: 45:00	**Quiz 1** Continuous assessment Presential Duration: 00:15
2			**Technology evolution** Duration: 02:00 **Technology evolution** Duration: 01:00 **Technology evolution** Duration: 00:45	**Quiz 2** Continuous assessment Presential Duration: 00:15
3			**Technology intelligence** Duration: 02:00 **Technology intelligence** Duration: 01:00 **Technology intelligence** Duration: 00:45	**Quiz 3** Continuous assessment Presential Duration: 00:15
4			**Technology transfer** Duration: 02:00 **Technology transfer** Duration: 01:00 **Technology transfer** Duration: 00:45	**Quiz 4** Continuous assessment Presential Duration: 00:15

5				**Technology Watch reports** Continuous assessment Presential Duration: 03:00
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
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.

* The schedule is based on an a priori planning of the subject; it might be modified during the academic year, especially considering the COVID19 evolution.

7. Activities and assessment criteria

7.1. Assessment activities

7.1.1. Continuous assessment

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
1	Quiz 1		Face-to-face	00:15	10%	5 / 10	CB09 CG03 CG09 CE-EIT03 CG07 CG08 CG01
2	Quiz 2		Face-to-face	00:15	10%	5 / 10	CB09 CG03 CG09 CE-EIT03 CG07 CG08 CG01
3	Quiz 3		Face-to-face	00:15	10%	5 / 10	CG09 CE-EIT03 CG07 CG08 CG01 CB09 CG03
4	Quiz 4		Face-to-face	00:15	10%	5 / 10	CB09 CG03 CG09 CE-EIT03 CG07 CG08 CG01
5	Technology Watch reports		Face-to-face	03:00	60%	5 / 10	CB09 CG03 CG09 CE-EIT03 CG01 CG07 CG08

7.1.2. Final examination

No se ha definido la evaluacion sólo por prueba final.

7.1.3. Referred (re-sit) examination

No se ha definido la evaluación extraordinaria.

7.2. Assessment criteria

The evaluation of the students will be based on two main sources:
? Continuous evaluation (40%): activities during lectures (classroom interactivity, quizzes, etc.)

? Group work (60%): development and final presentation of the group work

8. Teaching resources

8.1. Teaching resources for the subject

Name	Type	Notes
The evaluation of the students will be based on two main sources: ? Continuous evaluation (40%): activities during lectures (classroom interactivity, quizzes, etc.) ? Group work (60%): development and final presentation of the group work	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