

MODULE	SUBJECT MATTER	YEAR	SEMESTER	CREDITS	TYPE
Innovation and environment	Technology and Innovation management	4	2	6	Elective course
TEACHING STAFF ⁽¹⁾			ADDRESS, TELEPHONE NUMBER, EMAIL, ETC. DIRECCIÓN COMPLETA DE CONTACTO PARA TUTORÍAS (Dirección postal, teléfono, correo electrónico, etc.)		
<ul style="list-style-type: none"> Vanesa Barrales Molina 			Dep. Organización de empresas I, Facultad de Ciencias Económicas y Empresariales, office B218 Email: vanesabm@ugr.es		
			TIMETABLE FOR TUTORIALS OR LINK TO WEBSITE https://directorio.ugr.es/static/PersonalUGR/*/#show/7edf19293e3b418e2e2f853786165511		
BELONGS TO UNDERGRADUATE DEGREE PROGRAMME			AND ALSO TO OTHER UNDERGRADUATE DEGREE PROGRAMMES		
Grado in Business Management and Administration			<ul style="list-style-type: none"> Grado en Administración y Dirección de empresas y Derecho Grado en Marketing e Investigación de Mercados Grado en Ingeniería de Tecnologías de la Telecomunicación Grado en Ingeniería Industrial Grado en Ingeniería Informática Grado en Ingeniería Química 		
PREREQUISITES OR RECOMMENDATIONS (where applicable)					

¹ Consult any updates in Acceso Identificado > Aplicaciones > Ordenación Docente

(∞) This course guide should be filled in according to UGR regulations on assessment of student learning: ([http://secretariageneral.ugr.es/pages/normativa/fichasugr/ngc7121/!](http://secretariageneral.ugr.es/pages/normativa/fichasugr/ngc7121/))



As a last course subject, the student needs to review the previous lessons on strategic management and organizational structure

BRIEF DESCRIPTION OF CONTENT (ACCORDING TO OFFICIAL VALIDATION REPORT)

- Understanding the value of technological innovation as the origin of competitiveness in nowadays.
- Analyzing and comparing different economic models to understand technological change.
- Understanding the main integrative models to explain the innovation development.
- Understanding the key factors to shape the technology and innovation strategy.
- Analyzing the role of organizational structure to promote innovation success.
- Knowing the link between institutions, firms and innovation.

GENERAL AND SPECIFIC COMPETENCES

General abilities

- CG1: Learning abilities
- CG2: Acquire bibliographical information on the current state of technology and innovation management
- CG4: Teamwork abilities
- CG5: Working abilities in high pressure environments
- CG6: Analysis and synthesis abilities
- CG7: Decision-making abilities
- CG8: Solving-problem abilities in economic and business contexts
- CG9: Organizing and planning abilities
- CG10: Adaptation abilities in novel and changing conditions
- CG14: Communication skills
- CG15: Abilities to assume an ethical commitment
- CG19: Abilities for public and written presentations in English language
- CG20: Software skills to use applications related to the subject
- CG21: Being able to read into relevant data in order to establish an assessment
- CG24: Being able to apply knowledge to the design of strategies related to the subject

Specific abilities

- CE9: Knowing and applying the theoretical concepts and practical techniques in order to solve economic problems in real situations.
- CE22: Being able to make a diagnosis of a real situation in the business world, identifying and modeling problems, as well as proposing solutions in a solid way.

OBJECTIVES (EXPRESSED AS EXPECTED LEARNING OUTCOMES)

When passing the subject, the student should be able to:

- Explain the dynamic of innovation processes according to different types of innovation



- Link the innovation strategy to the corporate strategy
- Know the available tools for technological vigilance
- Distinguish between different models to explain innovation management
- Distinguish between different mechanisms to protect and exploit inventions

DETAILED SYLLABUS

UNIT 1. Science, technology and innovation

- 1.1 Science
- 1.2 Technology
- 1.3 Innovation
- 1.4 Linking science, technology and innovation

UNIT 2. Innovation development

- 2.1 Models to explain innovation development
- 2.2 Open innovation model
- 2.3 Real options to develop innovation in practice

UNIT 3. STRATEGIES AND BUSINESS MODELS FOR INNOVATION

- 3.1 Strategic management of innovation
- 3.2 Technological vigilance
- 3.3 Strategic options to manage innovation and technology
- 3.4 Different tool for strategic analysis of innovation
- 3.5 Business models for innovation

UNIT 4. COLLABORATION STRATEGIES FOR INNOVATION

- 4.1 Advantages derived from in-house innovation
- 4.2 Advantages derived from collaborative strategy in innovation
- 4.3 Types of collaborative deals in innovation
- 4.4 Selecting a collaborative mode
- 4.5 Selecting and controlling a partner in innovation

UNIT 5. PROTECTION STRATEGIES

- 5.1 Different options to protect innovation
- 5.2 Patenting systems
- 5.3 Intellectual property management

UNIT 6. ORGANIZING THE INNOVATION

- 6.1 Organization design for innovation
- 6.2 Contingency approach of innovation: size, environment and technological systems
- 6.3 Classic organizational structure and innovation
- 6.4 Emergent organizational structures
- 6.5 R&D department

UNIT 7. MANAGING AND ASSESSING INNOVATION PROJECTS

- 7.1 Basic concepts of project management
- 7.2 Innovation project management
- 7.3 Methods for innovation management assessment

UNIT 8. MANAGING NEW PRODUCT DEVELOPMENT PROJECTS

- 8.1 Objectives of new product development projects



- 8.2 Parallel and sequential processes in project management
- 8.3 The involvement of customers and suppliers in new product development
- 8.4 New product development teams
- 8.5 The structure of new product development teams
- 5.6 Managing new product development teams

UNIT 9. PRACTICAL TOOLS TO INNOVATION MANAGEMENT

- 9.1 Roadmapping
- 9.2 Design thinking
- 9.3 Design of the value proposition
- 9.4 Measuring the innovative performance

PRACTICAL AGENDA

- Practice 1:** Emergent technologies and Garner's curve.
- Practice 2:** Netflix, Tesla, innovation opportunities in circular economy.
- Practice 3:** Strategic choices in smartphone industry, traditional innovation strategy and real business models in innovative companies.
- Practice 4:** Patent strategy and R&D manager profiles.

BIBLIOGRAPHY

Goffin, K. y Mitchell, R. (2017). Innovation Management: Effective strategy and implementation (Third edition). Macmillan Education.
 Prahalad, C. K. y Krishnan, M. S. (2017). The new age of innovation. Editorial McGraw- Hill.
 Schilling, M. A. (2012). Strategic management of technological innovation. Editorial McGrawHill.
 Tidd, B. y Bessant, J. (2013). Managing innovation. Editorial Wiley and Sons.

BIBLIOGRAFÍA COMPLEMENTARIA:

- Stone, B. (2017). The Upstarts: How Uber, Airbnb, and the Killer Companies of the New Silicon Valley are Changing the world. Transworld.

RECOMMENDED LINKS

Fill in text as appropriate

TEACHING METHODOLOGY

The subject is organized through theoretical lessons, proposed readings and practical activities.

1. **Theoretical lectures.** Concepts, models and theories will be presented through summarized slides.
2. **Weekly news.** Recent related news will be employed to open up the theoretical lecture in order to be related to theoretical contents. These reading will be included as exam materials.
3. **Glossary of the subject.** Along the course, students will contribute to define key current words employed in practice in the field of technology and innovation.
4. **Activities.** Students will be asked to apply theoretical lessons to understand real problem



and make decisions related to technology and innovation strategy.

5. **Close reading of 3 articles.** Along the course, the reading in depth of 3 articles will be proposed, developing three seminars to highlight the keypoints that should be understood. The students will be asked to demonstrate his/her understanding in a written exam.
6. **Conferences.** Students will be invited to attend to any conference related to the field of technology and innovation management.
7. **Tutorials.** Students will be encouraged to use time devoted to tutorials, in order to promote more interactive learning ways: guiding the development of activities and solving doubts related to theoretical lessons and proposed reading.

ASSESSMENT (ASSESSMENT INSTRUMENTS, CRITERIA AND PERCENTAGE VALUE OF FINAL OVERALL MARK, ETC.)

A) General system (ongoing evaluation)

Skills and knowledge acquired by students will be assessed along the course, adding partial marks and the results obtained in a final exam.

- i. **Activities** will define the 40% of the final mark: practical questions, glossary of the subject (20%) and proposed reading (20%).
- ii. **Final exam** will define the 60% of final mark. The written test will be divided into two parts: 'true or false' sentences (50%) and short questions, asking to relate news analyzed in lectures and theoretical contents (50%).

IMPORTANT: In order to consider the mark of the activities, students should achieve 4 points in the final exam (total points: 10).

B) Extraordinary evaluation. Students who failed the official date of exam, will have the opportunity to make an extraordinary evaluation which will fit the structure of the test in 'Unique final evaluation'. Students will be allowed to maintain the mark of the activities, just being asked to make the first part ('True or false' sentences and short questions, 6 points).

DESCRIPTION OF THE EXERCISES WHICH WILL CONSTITUTE SINGLE FINAL ASSESSMENT AS ESTABLISHED IN UGR REGULATIONS

Unique final evaluation. Student may request this option, and in case of approval, they will be evaluated through an unique evaluation, including the following parts:

- i. 'True or false' sentences and short questions (6 points)
- ii. Questions about practical issues of the subject (2 points)
- iii. Questions about reading of the proposed book (2 points)

In order to pass the exam, students must achieve at least 5 points with this test.



SCENARIO A (ON-CAMPUS AND REMOTE TEACHING AND LEARNING COMBINED)

TUTORIALS

TIMETABLE

(According to Official Academic Organization Plan)

https://directorio.ugr.es/static/PersonalUGR/*/show/7edf19293e3b418e2e2f853786165511

TOOLS FOR TUTORIALS

(Indicate which digital tools will be used for tutorials)

Tutorials will be attended through online meetings using Google meet, once the student requests them.

MEASURES TAKEN TO ADAPT TEACHING METHODOLOGY

- Theory lessons will be developed online using Google Meet, for all the students enrolled at the same time.
- Practical lessons will be developed face-to-face in the classroom for reduced groups of students.

MEASURES TAKEN TO ADAPT ASSESSMENT (Instruments, criteria and percentage of final overall mark)

Ordinary assessment session

- The Ordinary assessment will be the same as previously described, except that we will use Prado exámenes platform to do the exam.

Extraordinary assessment session

- The Extraordinary assessment session will be the same as previously described, except that we will use Prado exámenes platform to do the exam.

Single final assessment

- The Single final assessment will be the same as previously described except that we will use Prado exámenes platform to do the exam.

SCENARIO B (ONCAMPUS ACTIVITY SUSPENDED)

TUTORIALS

TIMETABLE

(According to Official Academic Organization Plan)

https://directorio.ugr.es/static/PersonalUGR/*/show/7edf19293e3b418e2e2f853786165511

TOOLS FOR TUTORIALS

(Indicate which digital tools will be used for tutorials)

Tutorials will be attended through online meetings using Google meet, once the student requests them.

MEASURES TAKEN TO ADAPT TEACHING METHODOLOGY

- Both theoretical and practical lectures will be developed online using Google Meet and Prado platform.

MEASURES TAKEN TO ADAPT ASSESSMENT (Instruments, criteria and percentage of final overall mark)

Ordinary assessment session



The Ordinary assessment will be the same as previously described, except that we will use Prado exámenes platform to do the exam.

Extraordinary assessment session

The Extraordinary assessment session will be the same as previously described, except that we will use Prado exámenes platform to do the exam.

Single final assessment

The Single final assessment will be the same as previously described except that we will use Prado exámenes platform to do the exam.

ADDITIONAL INFORMATION (if necessary)

