

COURSE GUIDE

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Innovation and Technology Management

Grado (Bachelor's Degree)	Bachelor's Degree in Business Administration and Management	Branch	Social and Legal Sciences
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Module	Innovación y Medioambiente	Subject	Dirección de la Innovación y la Tecnología
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Year of study	4 ^o	Semester	2 ^o	ECTS Credits	6	Course type	Elective course
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PREREQUISITES AND RECOMMENDATIONS

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

BRIEF DESCRIPTION OF COURSE CONTENT (According to the programme's verification report)

- Recognize and understand the importance of technological innovation as the origin and determinant of business competitiveness in the 21st century.
- Analyze and differentiate the most significant economic approaches in the treatment of Exchange Technological and Innovation.
- Analyze the integrating models of the technological innovation process, both from an internal business perspective, as from an industrial, evolutionary and dynamic point of view.
- Know and understand the fundamental factors to undertake the design of a strategy technological and innovation.
- Organizational design for technological innovation
- Institutional relations between company, innovation and technology

SKILLS

GENERAL SKILLS

- CG01 - Capacidad de aprendizaje y trabajo autónomo
- CG02 - Habilidad para analizar y buscar información proveniente de fuentes diversas aplicables al ámbito de estudio
- CG04 - Capacidad de trabajo en equipo
- CG05 - Capacidad de trabajo en entornos de presión
- CG06 - Capacidad de análisis y síntesis



- CG07 - Capacidad para tomar decisiones
- CG08 - Capacidad para la resolución de problemas en el ámbito económico empresarial
- CG09 - Capacidad de organización y planificación
- CG10 - Capacidad de adaptación a nuevas situaciones o situaciones cambiantes
- CG14 - Poder transmitir información, ideas y soluciones sobre problemas planteados
- CG15 - Capacidad para asumir un compromiso ético en el trabajo
- CG19 - Comunicación oral y escrita en castellano
- CG20 - Conocimientos de informática relativos al ámbito de estudio
- CG21 - Saber reunir e interpretar datos relevantes para emitir juicios
- CG24 - Capacidad para aplicar los conocimientos a la práctica

SUBJECT-SPECIFIC SKILLS

- CE09 - Conocer y aplicar los conceptos teóricos y/o las técnicas instrumentales y herramientas para la resolución de problemas económicos y situaciones reales
- CE22 - Elaborar un diagnóstico de la situación y resultados del mundo empresarial, identificar y diagnosticar problemas, modelarlos y ofrecer soluciones de forma razonada

TRANSFERABLE SKILLS

- CT01 - Gestionar y administrar una empresa u organización entendiendo su ubicación competitiva e institucional e identificando sus fortalezas y debilidades. Integrarse en cualquier área funcional de una empresa u organización mediana o grande y desempeñar con soltura cualquier labor de gestión en ella encomendada.

LEARNING OUTCOMES

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

- Identify the main concepts related to technological innovation as key phenomenon to define the level of competitiveness
- 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

PLANNED LEARNING ACTIVITIES

THEORY 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 Practical methodologies 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 SYLLABUS

Practice 1: Emergent technologies and Garner's curve.

Practice 2: New business models introducing disruption in consolidated industries

Practice 3: Implementing design thinking I: problem space

Practice 4: Implementing design thinking II: solution space

RECOMMENDED READING

ESSENTIAL READING

- Goffin, K. y Mitchell, R. (2017). *Innovation Management: Effective strategy and implementation* (Third edition). Macmillan Education.
- Lewrick, M. y otros (2020). *The Design Thinking Toolbox: A Guide to Mastering the Most Popular and Valuable Innovation Methods*. John Wiley & Sons.
- 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.
- Schilling, M. A., & Shankar, R. (2019). *Strategic management of technological innovation*. McGraw-Hill Education.
- Tidd, B. y Bessant, J. (2013). *Managing innovation*. Editorial Wiley and Sons.

COMPLEMENTARY READING

- Brown, T., & Katz, B. (2019). *Change by design: how design thinking transforms organizations and inspires innovation* (Vol. 20091). New York, NY: HarperBusiness.
- Catmull, E., & Wallace, A. (2014). *Creativity, Inc: overcoming the unseen forces that stand in the way of true inspiration*. Random House.
- De Bono, E. (2010). *Lateral thinking: a textbook of creativity*. Penguin UK.
- Iger, R. (2019). *The ride of a lifetime: Lessons learned from 15 years as CEO of the Walt Disney Company*. Random House.
- Knapp, J., Zeratsky, J., & Kowitz, B. (2016). *Sprint: How to solve big problems and test new ideas in just five days*. Simon and Schuster.
- Linkner, Josh. (2021). *Big Little Breakthroughs: How Small, Everyday Innovations Drive Oversized Results*. New York: Post Hill Press.
- Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). *Value proposition design: How to create products and services customers want*. John Wiley & Sons.
- Osterwalder, A., Pigneur, Y., Smith, A., & Etienne, F. (2020). *The Invincible Company: How to Constantly Reinvent Your Organization with Inspiration From the World's Best Business Models*. John Wiley & Sons.
- Ridley, M. (2020). *How innovation works: And why it flourishes in freedom*. New York: Harper.
- Ries, E. (2014). *Lean Startup: Schnell, risikolos und erfolgreich Unternehmen gründen*. Redline Wirtschaft.
- Senor, D., & Singer, S. (2011). *Start-up nation: The story of Israel's economic miracle*. Random House Digital, Inc..



RECOMMENDED LEARNING RESOURCES/TOOLS

- [Innovation - HBR](#)
- [Technology - HBR](#)
- [Topics Innovation \(mit.edu\)](#)
- [Topics Managing Technology \(mit.edu\)](#)

TEACHING METHODS

- MD01 Docencia presencial en el aula
- MD02 Estudio individualizado del alumno, búsqueda, consulta y tratamiento de información, resolución de problemas y casos prácticos, y realización de trabajos y exposiciones.
- MD03 Tutorías individuales y/o colectivas y evaluación

ASSESSMENT METHODS (Instruments, criteria and percentages)

ORDINARY EXAMINATION DIET

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

1. **Activities** will define the 40% of the final mark: practical questions, glossary of the subject (20%) and proposed readings (20%).
2. **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)

EXTRAORDINARY EXAMINATION DIET

Students who failed the ordinary assessment session, 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).

SINGLE FINAL ASSESSMENT (evaluación única final)

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

1. 'True or false' sentences and short questions (6 points)
2. Questions about practical issues of the subject (2 points)





3. 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.

