TECHNICAL SHEET OF THE SUBJECT

Data of the subject	
Subject name	Innovation and Technological Change
Subject code	E000012136
Mainprogram	Grado en Análisis de Negocios/Business Analytics
Involved programs	Grado en Administración y Dirección de Empresas y Grado en Análisis de Negocios/Business Analytics [Fifth year]
Credits	6,0 ECTS
Type	Optativa (Grado)
Department	Departamento de Gestión Empresarial
Coordinator	Blanca Moro
Schedule	Consult for this purpose the schedules of the different groups in which it is taught.
Office hours	Check with the teacher for the schedule
Course overview	ANECA: Innovation is, by definition and essence, a driving force for organizational change, enabling firms to identify new opportunities and execute them in original ways within a globalized and hyperconnected environment. The purpose of the Innovation and Technological Change course is to provide students with a solid understanding of the essential aspects of managing innovation in a digitalized and global context, as a source of sustainable competitive advantage. The course also aims to help students recognize and avoid the most common mistakes in innovation management. Starting with the conceptual foundations of innovation—its definition, processes, and different types—the course progresses to address key aspects such as: - Strategic and operational decisions inherent to the innovation process. - The role of data analytics in supporting innovation strategy. - The development of new products and services. - The design and implementation of innovative business models.

Teacher Information	
Teacher	
Name	Blanca Moro Cañada
Department	Departamento de Gestión Empresarial
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SPECIFIC DATA OF THE SUBJECT

Contextualization of the subject
Contribution to the professional profile of the degree

Interest

The company's ability to innovate is increasingly recognized as essential for the survival of organizations operating in environments of hypercompetition, regardless of the sector in which they operate. For this reason, it is important for students to have a dedicated space to reflect on this issue and to understand the uniqueness of managing this dimension of the firm—something they will inevitably face in their professional careers. The relevance of innovation is not limited to technology-intensive industries; today, it plays a central role in the competitive dynamics of virtually every sector.

Objective

To understand how firms can achieve and sustain competitive advantage in emerging sectors and in industries shaped by technology and digital transformation.

Contents

- Strategies and operations for innovation and change.
- The role of data analytics in supporting innovation.
- Key managerial decisions, organizational design, and creativity in innovation processes.
- Challenges of technology adoption and sustainable exploitation.
- Management practices for fostering innovation across diverse sectors.

Prerequisites

Due to its nature, this subject maintains close and permanent links with the courses *Strategic Analysis* and *Business Strategy*, which provide the fundamental pillars on which to build the discussion around innovation in the firm. However, no specific prior training is required to enroll in this course.

Competencies - Objectives

Competences

GENERALES

CG01		Capacidad de organización y planificación en la identificación de problemas en el contexto de datos masivos
	RA1	Describe, relaciona e interpreta situaciones y planteamientos de nivel medio
	RA2	Selecciona los elementos más significativos y sus relaciones en las situaciones planteadas
	RA3	Es capaz de enfrentarse con el estudio analítico de casos y escenarios, así como de llevar a efecto síntesis de información y de datos, empleando los conceptos adecuados.
CG02		Capacidad de análisis de datos masivos procedentes de diversas fuentes: texto, audio, numérica e imagen
	RA1	Identifica y define, adecuada y proactivamente, un problema y sus posibles causas
	RA2	Plantea posibles soluciones pertinentes y diseña un plan de acción para su aplicación
CG08		Capacidad crítica y autocrítica en la sociedad de la información
	RA1	Identifica los supuestos y las limitaciones de métodos y teorías
	RA2	Identifica, establece y contrasta hipótesis, variables y resultados de manera lógica y crítica
	RA3	Es capaz de construir un discurso propio, en un contexto de intercambio de opiniones.
CG09		Compromiso ético en la sociedad de la información
	RA1	Persigue la excelencia en las actuaciones profesionales

	RA2	Se preocupa por las consecuencias que su actividad y su conducta pueden tener para los demás
	RA3	Incorpora en su discurso y en sus propuestas de actuaciones, las consecuencias que las mismas pueden tener para los distintos stakeholders de una organización global
CG11		Capacidad para aprender y trabajar autónomamente en la sociedad de la información
	RA1	Es capaz de recopilar, preparar y ampliar información con carácter previo a su participación en actividades que implican la construcción de un discurso propio argumentado o la propuesta de soluciones innovadoras a un problema
	RA2	Realiza sus trabajos y su actividad necesitando sólo unas indicaciones iniciales y un seguimiento básico, poniendo en práctica las habilidades necesarias para la investigación independiente
	RA3	Busca y encuentra recursos adecuados para sostener sus actuaciones y realizar sus trabajos
ESPECÍFICAS		
CEO03		Conocer y comprender las habilidades necesarias para gestionar la innovación en los niveles estratégicos y operativos de una empresa, orientándose a la creación de una ventaja competitiva sostenible mediante la generación, la transferencia y la explotación de las innovaciones
	RA1	Identifica la dinámica de los procesos de innovación en sus diferentes tipologías y componentes, reconociendo los factores que llegado el caso impulsan o limitan dichos procesos, con especial hincapié en las acciones que incentivan la creatividad e incrementan la generación de ideas innovadoras.
	RA2	Distingue y evalúa críticamente los diferentes modelos de gestión y de organización de la innovación, que se concretan en distintos mecanismos de obtención de tecnología, de protección de la innovación y explotación de la tecnología
	RA3	Identifica las cuestiones más actuales relativas a la gestión de la innovación en un escenario digitalizado global (innovación abierta; innovación disruptiva; protección de la innovación; innovación sostenible)
	RA4	Conoce herramientas de analítica de datos (o combinaciones de ellas) aplicadas a la estrategia de innovación de una organización, con especial énfasis en su contribución al desarrollo de nuevos productos/servicios y de nuevos modelos de negocio

THEMATIC BLOCKS AND CONTENTS

Contents - Thematic Blocks
CONTENTS: strategies and operations for innovation and change with the contribution of data analytics: Key decisions, organization, creativity and management, challenges and challenges, adoption and sustainable exploitation of technologies. ASSIGNMENT PROGRAM BLOCK 1: INTRODUCTION Topic 1: Invention, innovation and competitive advantage

Topic 2: Competitive advantage in emerging and technology-intensive sectors

BLOCK 2: IDENTIFICATION OF OPPORTUNITIES TO INNOVATE

Topic 3: Patterns of change and technological transition: the failure of leaders

Topic 4: Standards Control and Network Effects

Topic 5: Strategies for the acquisition of technologies

BLOCK 3: EXPLOITATION OF INNOVATION

Topic 6: Capturing the benefits of innovation: legal protection and complementary goods

Topic 7: The sale of technology

BLOCK 4: CREATION AND MANAGEMENT OF THE INNOVATIVE COMPANY

Topic 8: External and internal incentives for innovation: people management

Topic 9: Organizing for innovation: the relevance of shared innovation

Topic 10: Innovation and sustainability: new products and new business models

TEACHING METHODOLOGY

General methodological aspects of the subject

METHODOLOGY and EVALUATION: case study.

The course adopts a **practical, student-centered approach** designed to foster autonomy, critical thinking, and active participation. The overall objective is to guide students in the development of the skills and competences outlined above.

In-class Methodology: Activities

AF1. Participatory sessions of an expository nature

Each lecture will combine exposition with debate and/or discussion on the topic scheduled for that class. Students are expected to come prepared, having reviewed the assigned readings and bibliographic material. The professor will introduce the basic concepts, while students actively participate by raising questions, clarifying nuances, and debating relevant issues to ensure a deeper understanding of the content. Practical cases will serve as the backbone for presenting ideas, supported by dynamic presentations and both structured and spontaneous student participation.

Active participation is a powerful tool for enhancing learning, not only for the student who contributes but also for classmates. A productive learning environment requires the active involvement of everyone in the classroom.

AF2. Analysis and resolution of cases

Students will work on cases proposed by the professor and/or by leading strategic consulting firms invited to the course to collaborate with students on real or realistic business cases. The supporting material (reports, readings, or other current documentation) will be made available through the Course Resources Portal.

These sessions are designed to allow students to apply theoretical knowledge in practice while developing their analytical and argumentative skills. Directed work sessions will be carried out in groups. The activity will consist of preparing written responses to specific questions based on real company cases.

During these sessions, the professor will guide the process, responding to questions and encouraging students to resolve doubts within their groups or through intergroup discussion. It is essential that students read and prepare the assigned bibliographic material before each directed session.

AF3. Oral presentations of topics and projects

In line with the course objectives, each group will present in class an oral commentary on company news related to the course content, according to the schedule. These presentations will take place during class hours and will be directed to their peers, who are expected to ask questions and provide feedback.

To foster debate, each group must conclude its presentation by posing a discussion question to the class. Every group member must participate, presenting part of the commentary, and should be able to explain the relevant concepts or theories identified in the news item, as well as the logic of the strategic decision discussed, making use of the theoretical frameworks of the course.

In addition to news commentaries, students may also be required to present other group research projects in class, according to the instructions and planning provided by the professor.

Non-Presential Methodology: Activities

AF4. Individual study and independent learning

Students are expected to engage in self-directed study to understand, rework, and retain scientific content with a view to its application in their professional careers. This includes individual reading of texts and other materials related to the subject. All session materials, documentation, and practical activities will be available on the Course Resources Portal.

AF5. Academic tutoring

The teaching team will be available to students at designated times and locations to address questions or problems related to the study of course content, assigned activities, or any other issues directly or indirectly linked to the subject *Innovation and Strategy*. Tutoring is a support tool provided by the teaching staff to enhance the student's learning process. However, the decision to use (or not use) this resource will not affect the student's final grade.

AF6. Organized reading

Students will complete assigned readings and analyses of relevant texts, supported by a variety of tasks designed to assess reading comprehension individually or in groups.

AF7. Cooperative learning: company news commentaries

As part of cooperative learning, students will work in groups to select press articles (from general or specialized sources) on current and relevant business news connected to the course content. Each group will prepare a written commentary that includes:

A brief synopsis of the news.

Full bibliographic reference(s) of the source.

A group commentary linking the article to course concepts, including detailed and accurate explanation, as well as critical judgments, evaluations, or reflections on both the news and the subject matter.

SUMMARY STUDENT WORKING HOURS

CLASSROOM HOURS	
Lecciones de Carácter expositivo	Ejercicios y resolución de casos y de problemas

15.00	50.00		
NON-PRESENTIAL HOURS			
Estudios individual y/o en grupo, y lectura organizada	Ejercicios y resolución de casos y de problemas	Trabajos monográficos y de investigación, individuales o colectivos	Sesiones tutoriales
25.00	30.00	25.00	5.00
ECTS CREDITS: 6,0 (150,00 hours)			

EVALUATION AND CRITERIA

The use of AI to produce full assignments or substantial parts thereof, without proper citation of the source or tool used, or without explicit permission in the assignment instructions, will be considered plagiarism and therefore subject to the University's General Regulations.

Evaluation activities	Evaluation criteria	Weight
Final written exam: with an orientation essentially practical, based on the discussion of case/s practical/s, allows students to prove their knowledge and apply it to innovation management problem solving. The final exam will be handwritten and must be completed without access of course materials, external sources or AI tools.	Comprehensive and relational capacity. Argumentative and expository capacity.	50 %
Analysis of real business cases: Students will apply the concepts, models, and tools developed during the course to real-world business cases. These cases may be proposed by the professor or by external consultants of recognized prestige.	Practical application and teamwork. Depth of analysis and understanding.	20 %
Active class participation: Active engagement in the classroom will be assessed, including the search for additional information, personal reflection and the ability to take a reasoned stance on specific topics, as well as proactivity and other participatory behaviors. Both contributions and attitudes will be valued, as long as they reflect a learning process connected to the competences defined for this course.	Quality of attitude towards individual work Participation and rigor. Proactivity	15 %
Oral presentation of news commentaries: According to the course schedule, students will also deliver oral presentations of their news analyses. These presentations will take place weekly throughout the semester.	Search and presentation of information. Rigor and Proactivity	15 %

Assessment Methods and Requirements

The evaluation of this course is based on a combination of written work, oral presentations, class participation, and a final exam. Each component must be successfully completed in order to pass the course.

- **Analysis of real business cases:** Students will apply the concepts, models, and tools developed during the course to real-world cases proposed by the professor or by external experts. The final grade for this component will be the arithmetic mean of all exercises/cases completed throughout the semester.
- **News commentaries (written work):** Short written analyses based on current business news, focusing on the relevance of the selected article to the topics covered in the course.
- **Oral presentation of news commentaries:** According to the course schedule, students will present their news commentaries weekly.
- **Active participation in class:** Active engagement will be assessed, including contributions to class discussions, search for additional information, critical reflection, proactivity, and other participatory behaviors that reflect a learning process aligned with the course competences.
- **Final exam:** A comprehensive exam, completed by hand and without the use of AI tools, is required to demonstrate mastery of the course material.

General Conditions

- To pass the course in the ordinary session, students must pass **all** the activities that form part of the final grade (final exam, case analyses, written and oral news commentaries, and class participation).
- Exercises not submitted under the exact conditions of time, place, and deadlines specified in the course schedule will not be graded.
- Attendance at all directed work sessions is mandatory. Absence from such sessions will result in a grade of **0** for the corresponding group activity, unless justified.

Use of Artificial Intelligence (AI)

Students are encouraged to make thoughtful use of AI tools as part of their learning process. The following guidelines apply:

- **Encouraged use:** AI may be used to support research, structuring of ideas, and drafting of assignments.
- **Student responsibility:** Regardless of AI use, students remain fully responsible for understanding and mastering the content of their work. They must have complete knowledge and control over all material they submit.
- **Oral defense:** Special importance will be given to the oral defense of written work. Students must be able to explain and justify their submissions without any external support.
- **Final exam:** The final exam will be handwritten and must be completed without the use of AI tools.

Extraordinary Call (Resit Exam)

- Students who fail the final exam in the ordinary session must retake it. Once passed, the general weighting of evaluation will apply.
- Students who fail the other components of evaluation (case analyses and/or news commentaries) must retake the exam on the full course content **and** complete a series of complementary assignments defined by the professor.

Exemption from Attendance

Students officially exempt from attendance will only be required to take the **final exam**, which will count for 100% of their final grade.

BIBLIOGRAPHY AND RESOURCES

Basic Bibliography

Cetindamar, D.; Phaal, R. y Probert, D. (2016). Technology Management. Activities and Tools. Palgrave Macmillan, Second edition.

Harford, T (2018) Cincuenta innovaciones que han cambiado el mundo. Conecta.

Michalko, M (2007) Los secretos de los genios de la creatividad. Gestión 2000.

Mootee, I. (2014) Design ThinOOking para innovación estratégica. Empresa activa.

Tidd, J. y Bessant, J. (2013). Managing Innovation: Integrating Technological, Market and Organizational Change.

Chichester: John Wiley, Fifth edition.

Westland, J. C. (2017). Global innovation management. Palgrave Macmillan, Second edition.

Oficina Española de Patentes y Marcas (www.oepm.es)

Websites

Moodlerooms of the Subject and links of interest on Technology and Innovation (among others):

EUROSTAT (http://ec.europa.eu/eurostat/data/database)

INE (www.ine.es)

Índice de competitividad del IMD International Lausana (https://www.imd.org/wcc/world-competitivenesscenter/)

Índice de Competitividad Global (ICG) del Foro Económico Mundial (https://www.weforum.org/reports/theglobal-competitiveness-report-2017-2018)

Informes de la Fundación COTEC (www.cotec.es)

INNOSIGHT (https://www.innosight.com/)

Ministerio de Economía y Competitividad. Secretaría de Estado de Investigación, Desarrollo e Innovación (http://www.idi.mineco.gob.es)

Complementary Bibliography

Borghino, M (2019) Disrupción: mas allá de la innovación. Grijalbo.

Hidlago Nuchera, A (2002) La gestión de la innovación y la tecnología. Piramide.

SHANE, S.A. (2009): Technology Strategy for Managers and Entrepreneurs, Prentice Hall.

3M (2002): A Century of Innovation. The 3M Story, 3M Company.

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