UAB
Universitat Autònoma de Barcelona

Introduction to Innovation Management

Code: 102163
ECTS Credits: 6

2024/2025

Degree	Type	Year
2500003 Business and Information Technology	OB	3
2501233 Aeronautical Management	OT	4

Contact

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Teaching groups languages

You can view this information at the end of this document.

Prerequisites

There are no prerequisites to take this subject.

Objectives and Contextualisation

OBJECTIVES FOR THE STUDENT:

- A vision of innovation as an integrated business process in the context of the company, deepening the development of organizational competencies to innovate and the specific dynamics of technological innovation.
- Address the issue from a strategic, organizational and operational perspective.
- Understand the importance of managing innovation in a business environment characterized by uncertainty.
- Identify the vectors that organizations have to manage to achieve successful innovation.
- Understand innovation as a result of a business strategy.
- Understand the legal mechanisms of intellectual property.
- Value the talent of people and work teams, as a key factor in an innovative process.
- Understand the process of social costruction of technoloy
- Understance the importance of a responsible governance of technology

KEY VECTORS THAT SHOULD BE REINFORCED TO STUDENTS TO GET SUCCESS IN THIS AREA:

- Knowing what innovation is and how it is embedded in productive processes
- Different models of innovation and when applied: entrepreneurship, open innovation, corporate innovation, technology transfer
- Analyze the keys to disruptive technologies and exponential organizations
- Include innovation in the strategy of companies
- Draw up an innovation roadmap aligned with the strategy of the organizations
- What role the customer plays in innovation and what are the tools of a generation of insight costumer
- The role of the work teams and the talent to obtain the maximum performance of the innovation
- Knowledge of the most relevant tools used for the generation of innovation in both industrial and service organizations

Competences

Business and Information Technology
- Capacity for working in teams.
- Demonstrating a concern for quality in the objectives and development of the work.
- Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
- Proving they know the dynamic nature of technology and innovation and their effect in the change of organisations.
- Students must be capable of adapting to new situations and new knowledge that may lead to new analysis and different stances.
- Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
- Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
- Students must develop the necessary learning skills in order to undertake further training with a high degree of autonomy.
- Students must prove they know where and why organizations use technology, emphasizing the integrative role of technology in organisations.
- Take account of social, economic and environmental impacts when operating within one's own area of knowledge.

Aeronautical Management
- Apply specific software for solving problems in the aeronautical sector.
- Communication.
- Personal work habits.
- Thinking skills.
- Work in teams.

Learning Outcomes

1. Accept and respect the role of the various team members and the different levels of dependence within the team.
2. Analyse a situation and identify its points for improvement.
3. Appreciate the strategic role of technology and innovation in organisations.
4. Appropriately drawing up technical reports according to the customer's demands.
5. Carrying out different oral presentations for different audiences.
6. Communicate knowledge and findings efficiently, both orally and in writing, both in professional situations and with a non-expert audience.
7. Communicating with experts of other fields and non-experts.
8. Demonstrating a comprehension of the individual and collective human behaviour in professional environments.
9. Demonstrating a concern for quality in the objectives and development of the work.
10. Develop critical thinking and reasoning.
11. Develop independent learning strategies.
12. Develop systemic thinking.
13. Develop the ability to analyse, synthesise and plan ahead.
14. Identify situations in which a change or improvement is needed.
15. Make efficient use of ICT in communicating ideas and results.
16. Manage time and available resources. Work in an organised manner.
17. Propose new methods or well-founded alternative solutions.
18. Propose new ways to measure success or failure when implementing innovative proposals or ideas.
19. Propose viable projects and actions to boost social, economic and environmental benefits.
20. Propose ways to evaluate projects and actions for improving sustainability.

21. Students must be capable of adapting to new situations and new knowledge that may lead to new analysis and different stances.
22. Students must be capable of searching and analysing information of different sources.
23. Students must develop the necessary learning skills in order to undertake further training with a high degree of autonomy.
24. Students must prove they know where and why organizations use technology, emphasizing the integrative role of technology in organisations.
25. Understand the dynamic nature of technology.
26. Understanding the dynamic nature of technology.
27. Valuing the multidimensional nature of the relationships between technology and functional processes and areas of a company.
28. Valuing the strategic role of technology and innovation in an organisation.
29. Weigh up the risks and opportunities of suggestions for improvement: one's own and those of others.
30. Work cooperatively.
31. Work independently.
32. Working in teams, sharing knowledge and communicating it to the rest of the team and the organisation.

Content

1. Module 1: Introduction to Innovation Management

    1. Overview of Innovation
        1. Definition and types of innovation (product, process, business model, etc.)
        2. Importance of innovation in contemporary business
    2. Innovation vs. Invention
        1. Differences between innovation (commercialization and application of new ideas) and invention (creation of a new idea or concept)
    3. Historical Evolution and Current Trends
        1. Key milestones, influential figures, and future directions
    4. Case Studies
        1. Examples from leading innovative companies

    Module 2: Innovation Strategies and the Role of Knowledge and Competencies

    1. Developing Innovation Strategies
        1. Aligning innovation with business strategy
        2. Strategic frameworks (Porter's Five Forces, SWOT analysis)
        3. MABA Analysis
            1. Market Attractiveness and Business Attractiveness (MABA) matrix to prioritize strategic initiatives
    2. Role of Knowledge Management
        1. Capturing, sharing, and utilizing organizational knowledge
    3. Building Competencies for Innovation
        1. Skill development, organizational learning, and fostering an innovation-supportive culture
    4. Case Studies
        1. Analysis of companies with successful innovation strategies

    Module 3: Innovation Models and Frameworks

    1. Classic and Modern Models of Innovation
        1. Linear model, interactive model, open innovation
        2. Disruptive innovation, lean startup, agile methodology
    2. Comparative Analysis
        1. Strengths and weaknesses of different models
    3. Case Studies
        1. Application of frameworks in real-world scenarios

Module 4: Ideation

1. Idea Generation Techniques
    1. TRIZ (Theory of Inventive Problem Solving)
    2. Design Thinking
    3. Brainstorming
    4. 5W1H (Who, What, When, Where, Why, and How)
    5. Fishbone Analysis (Ishikawa)
    6. Other techniques: mind mapping, SCAMPER
2. Creative Thinking
    1. Encouraging creativity and out-of-the-box thinking
3. Tools and Technologies for Ideation
    1. Digital platforms and collaborative tools
4. Case Studies
    1. Successful ideation processes in various industries

Module 5: Selection

1. Evaluating Ideas
    1. Criteria for idea evaluation (feasibility, market potential, strategic fit)
2. Qualitative Selection Methods
    1. Expert panels, Delphi method, SWOT analysis
3. Quantitative Selection Methods
    1. Financial analysis, net present value (NPV), internal rate of return (IRR)
4. Mix Matrix/Scoring Approach
    1. Weighted scoring models, matrix approach combining qualitative and quantitative criteria
5. Decision-Making Processes
    1. Stage-gate process, innovation funnel
6. Portfolio Management
    1. Balancing risk and reward in innovation projects
7. Case Studies
    1. Companies' approaches to selecting the best ideas

Module 6:Implementation and Impact Maximization

1. Planning and Execution
    1. Developing a roadmap for innovation implementation
    2. Project management principles
2. Overcoming Challenges
    1. Common obstacles in innovation implementation and how to overcome them
3. Measuring Impact
    1. Key performance indicators (KPIs) for innovation
    2. Assessing financial, social, and environmental impact
4. Scaling and Sustaining Innovation
    1. Strategies for sustaining innovation over the long term
5. Case Studies
    1. Successful implementation and impact stories

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Master class	6	0.24	3, 12, 13, 25

Theoretical classes	26.5	1.06	3, 12, 13, 25, 30
Workshops	17	0.68	3, 13
Type: Supervised			
Tutorship	15	0.6	3, 12, 13, 25, 30
Type: Autonomous			
Preparation and elaboration of classwork's and homework's	33	1.32	1, 6, 13, 15, 30
Study and information search	49	1.96	3, 12, 13, 15, 25, 30

Teacher-pupils relationship

The general and relevant information about the subject that details the contents of the teaching guide, such as the dates of continuous assessment and dates and conditions of the work assignments, will be published on the virtual campus (or equivalent site) and may be subject to changes of programming for reasons of adaptation to possible incidents; the virtual campus will always be informed about these changes as it is understood that the virtual campus is the usual mechanism for exchanging information between teacher and student.

Languages

Classes will be conducted primarily in Spanish. However, some specific classes may be in Catalan or English (master classes with external speakers if applicable). English terms will also frequently appear. The written or supporting material for the course will be in English. Exercises during continuous assessment, the final exam, and re-evaluation will have instructions primarily in English but can be requested in Catalan or Spanish in advance. Responses to exams and exercises can be submitted (and if applicable, presented) in Catalan, Spanish, or English. The final exam will have questions in Spanish and English, although students can answer open questions in any of the three languages.

Theoretical classes

It is in these sessions that present the basic contents that students need to enter into the topics that make up the program. At the same time, they will indicate the possible ways to complete or deepen the information received in these sessions.

During the sessions, discussions will be generated and students' participation will be promoted both individually and in groups.

Workshops

In these sessions, the practical implementations of the concepts treated in theory classes will be made and challenges and exercises that can be both group and individual will be developed and will be developed through the use of active learning tools. You will need your PC inmost of the practical sessions.

Master Class

Experts from the sector will be invited, who, under the guidance of the teachers, will be able to transfer knowledge of innovation management very applied to their field of expertise. Approximately 4-5 sessions are planned.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Final Exam	45%	3.5	0.14	3, 4, 6, 10, 12, 13, 15, 16, 23, 24, 25, 26, 27, 28
Individual in-class work	10%	0	0	3, 6, 8, 9, 10, 11, 12, 13, 15, 21, 22, 25, 31
Midterm Individual excercise	20%	0	0	8, 9, 11, 12, 15, 30, 32
Workshops: group project	25%	0	0	1, 2, 3, 5, 6, 7, 9, 12, 13, 14, 15, 17, 18, 19, 20, 24, 25, 29, 30, 32

"This subject/module does not offer the option for comprehensive evaluation."

General Conditions to Approve

- At least 5 out of 10 must be taken to pass

1. Continuous assessment (55%) two parts:
   1. CA1: Workshops and group project (30%). 7 group workshops on the topics of the coursewhere students will cooperatively work on subject topics to ideate and plan a technological idea. It is requiered to participate actively to be evaluated: in case of no participation, activity will considered not performed and thus the global mark that the group has obtained will not be considered. Class participation will also be valued.
   2. CA2: Individual exercices in class (10%): Problem-based learning exercises, case discussion or individual work, presentation in class of the results and other tests that are determined.
   3. CA3: Individual midterm excercise (20%): In class project or excercise solutions done individualy It is required to have a minimum of 5 to be able to pass the course without a retake.
3. Exam (45%):
   1. Final exam:
      We will evaluate all the topics seen during the whole length of the course, and the exam may combine test questions, short answers or exercises, among others.
      A minimum grade of 5 is required to pass and sum it to the AC grades.
5. Calculation of the final grade:
   1. If CA> = 5 and Exam>=5, the final grade of the subject (N) will be: N = 45% (exams) + 55% (continuous assessment). The student passes the course if N>=5, and does not pass if N <3.5. In the intermediate case, the student can do the recovery process detailed below.
   2. If AC <5 and/or Exam <5, fail the course, but if from the previous calculation a value of N exceeding 3.5 is obtained, the student can go to the retake process.

Calendar of evaluation activities

The dates of the evaluation activities (midterm exams, exercises in the classroom,assignments, ...) will be announced well in advance during the semester.

The date of the final exam is scheduled in the assessment calendar of the Faculty.

"The dates of evaluation activities cannot be modified unless there is an exceptional and duly justified reason why an evaluation activity cannot be carried out. In this case, the degree coordinator will contact both the teaching staff and the affected student, and a new date will be scheduled within the same academic period to make up for the missed evaluation activity." *Section 1 of Article 115. Calendar of evaluation activities (Academic Regulations UAB).* Students of the Faculty of Economics and Business, who in accordance with the previous paragraph need to change an evaluation activity date must process the request by filling out an

Application for exams' reschedule https
://eformularis.uab.cat/group/deganat_feie/application-for-exams-reschedule

Grade revision process

After all grading activities have ended, students will be informed of the date and way in which the course grades will be published. Students will be also be informed of the procedure, place, date and time of grade revision following University regulations.

Retake Process

"Tobe eligible to participate in the retake process, it is required for students to have been previously been evaluated for at least two-thirds of the total evaluation activities of the subject." Section 3 of Article 112 third The recovery (UAB Academic Regulations). Additionally, it is required that the student to have achieved an average grade of the subject between 3.5 and 4.9.

The date of the retake exam will be posted in the calendar of evaluation activities of the Faculty. Students who take this exam and pass will get a grade of 5 for the subject. If the student does not pass the retake, the grade will remain unchanged, and hence, the student will fail the course.

Irregularities in evaluation activities

In spite of other disciplinary measures deemed appropriate, and in accordance with current academic regulations, *"in the case that the student makes any irregularity that could lead to a significant variation in the grade of evaluation activity, it will be graded with a 0, regardless of the disciplinary process that can be instructed. In case of various irregularities occur in the evaluation of the same subject, the final grade of this subject will be 0"*. **Section 10 of Article 116. Results of the evaluation. (UAB Academic Regulations).**

Bibliography

Tidd & Bessant "Managing Innovation" edition, Chapter 1-4 2nd edition

Yochai Benkler, Peer Production, the Commons, and the Future of the Firm, 15 Strategic Org. 264 (2017).

Ingenio Sistemas de Innovación - Capitulo 2 y 3

Winner 1980 - Do artefact have politics?

National Innovation Systems OECD Report

Stilgoe et al. 2013 - A framework for responsable innovation. Research Policy.

André Gorz - Ecología y Política. Capítulos 1-3, paginas 1-39

Software

Use of MS Power Point, MS Word, MS Excel and TEAMS for virtual sessions if needed.

MURAL in case of virtual practical sessions, if needed.

For the practical sessions, you need to bring your PC.

Language list

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	201	Spanish	second semester	morning-mixed
(TE) Theory	20	Spanish	second semester	morning-mixed