Universitat de Lleida

DEGREE CURRICULUM

INDUSTRIAL ECONOMICS AND INNOVATION

Coordination: VINTRO SANCHEZ, CARLA

Academic year 2021-22

INDUSTRIAL ECONOMICS AND INNOVATION 2021-22

Subject's general information

<table>
<tr><td>Subject name</td><td>INDUSTRIAL ECONOMICS AND INNOVATION</td></tr>
<tr><td>Code</td><td>102409</td></tr>
<tr><td>Semester</td><td>2nd Q(SEMESTER) CONTINUED EVALUATION</td></tr>
<tr><td>Typology</td><td>
<table>
<tr><th>Degree</th><th>Course</th><th>Character</th><th>Modality</th></tr>
<tr><td>Bachelor's degree in Industrial Organization and Logistics Engineering</td><td>3</td><td>COMPULSORY</td><td>Attendance-based</td></tr>
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<tr><td>Course number of credits (ECTS)</td><td>6</td></tr>
<tr><td>Type of activity, credits, and groups</td><td>
<table>
<tr><th>Activity type</th><td>PRAULA</td><td>TEORIA</td></tr>
<tr><th>Number of credits</th><td>3</td><td>3</td></tr>
<tr><th>Number of groups</th><td>1</td><td>1</td></tr>
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<tr><td>Coordination</td><td>VINTRO SANCHEZ, CARLA</td></tr>
<tr><td>Department</td><td>BUSINESS ADMINISTRATION</td></tr>
<tr><td>Teaching load distribution between lectures and independent student work</td><td>Classroom hours: 60 hours
Autonomous work: 90 hours</td></tr>
<tr><td>Important information on data processing</td><td>Consult this link for more information.</td></tr>
<tr><td>Language</td><td>Catalan / Spanish</td></tr>
<tr><td>Distribution of credits</td><td>Theoretical: 3 ECTS
Room practices: 3 ECTS</td></tr>
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INDUSTRIAL ECONOMICS AND INNOVATION 2021-22

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
VINTRO SANCHEZ, CARLA	carla.vintro@udl.cat	6	

Subject's extra information

Subject that is studied in the 2nd semester of the 3rd year of the Degree in Industrial and Logistics Organization. It corresponds to the Subject "Economy" within the Module "Specific Technology Training: Industrial and Logistics Organization".

Subject that requires continuous work throughout the semester in order to achieve the stated goals. Critical thinking and abstract reasoning abilities are required.

It is recommended to frequently visit the Virtual Campus space associated with the subject as all the corresponding information is announced.

Learning objectives

The aim of this subject is to introduce students to the field of study of Industrial Economics and Innovation. Innovation plays a fundamental role in business competitiveness, in the economic development and economic growth, and in the sustainability and ethics of business. Increasingly, companies demand a profile of innovation manager that has a multidisciplinary vision, and an ability to develop new ideas and put them successfully at the service of stakeholders through the commercialization of goods and services in the market.

Learning outcomes:

- Know how tproduction technology and costs determine the industrial structure.
- Be aware of the market power of industrial companies and their influence on strategic decisions.
- Understand the importance of innovation within the business strategy, and its relation to competitivesss and socio-economic development.
- Learn conceptual and analitical tools to understand the complexity and nature of the innovation process.
- Integrate ethical and sustainable commitment in the innovation process.
- Learn creativity tools that can be used in the process of generating innovative ideas.

Competences

B03: That students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical issues.

CG4: To solve problems with initiative, make decisions, creativity, critical reasoning and to communicate and transmit knowledge, skills and abilities in the field of Industrial Organization Engineering.

CG9: To organize and plan in the field of the company, and other institutions and organizations.

CG10: Work in a multilingual and multidisciplinary environment.

CE19: To have applied knowledge of basics and principles of quality management and technological innovation.

CE27: To have applied knowledge of basics and principles of market research.

Subject contents

Topic 1: Introduction to the innovation economy

- Technology and cost
- Macroeconomic aggregates
- Market structures, market power and innovation

Topic 2: What does it mean to innovate? Types of innovation

- What it means to innovate
- Types of innovation
    - Radical vs incremental
    - Technological
    - Management

Topic 3: Geography of innovation

- National and regional systems
- National and global technological development
- Globalization and impact on technology transfer
- Innovation support infrastructures

Topic 4: Innovation with social and environmental responsibility

- Responsible innovation
- Social and environmental objectives
- Innovations with social and environmental responsibility

Topic 5: Collaborative innovation

- Collaborate to maximize results
- Phases of collaborative innovation
- The synergy cycle.

Topic 6: Creativity and innovation

- Individual and team creativity
- Stages of the creative process
- Enablers and barriers
- Tools for creativity and innovation
- Tools to generate ideas
- Tools to present ideas

Topic 7: Design thinking

- What is Design Thinking
- Stages and tools

Topic 8: Strategic direction of innovation

- Innovation as a strategy
- Application to the integrating project

Methodology

The course will be taught with a combination of master lessons and practical activities that will involve lectures and

article analyses and case study analyses.

The usual format of the sessions will consist of a first part of explanation of the main concepts, and then a practical classroom-guided activity that will allow students to internalize and consolidate the concepts discussed in the session.

Integrating project:

The project coordinator will monitor the tasks to be submitted, as outlined in the timeline provided at the beginning of the course.
All the subjects involved in the project will be registered jointly. In the circumstance that the students might have passed more than 50% of the subjects involved in the project, they will be allowed to write an equivalent project focused on the subject they are currently taking.

The time distribution of dedications will be:

Activity	Classroom activity		Homework activity		Total time
	Goals	Hours	Student work	Hours	Hours/ECTS
Master class	Explanation of concepts	30	Study: know, understand and synthesize knowledge	45	75
Problems and case studies	Case study analyses, article analyses, group dynamics, ...	20	Solve study cases	30	50
Integrating project	Development of the integrating project	8	Develop the integrating project	12	20
	Oral presentation of the integrating project	2	Prepare the oral presentation of the integrating project	3	5
Totals		60		90	150

Development plan

Week 1: Topic 1_Introduction to the innovation economy

Introduction to the subject. Technology and cost. Macroeconomic aggregates. Market structures, market power and innovation.

Week 2: Topic 2_What does it mean to innovate? Types of innovation

What it means to innovate. Types of innovation. Radical innovations. Technological innovations. Examples.

Week 3: Topic 2_What does it mean to innovate? Types of innovation

Management innovations. Examples.

Week 4: Topic 3_Geography of innovation

Geography of innovation. National and regional systems. National and world technological development. Globalization and impact on technology transfer. Innovation support infrastructures. Silicon Valley and the other cities of innovation.

Week 5: Topic 8_Strategic direction of innovation

Analysis of technological trends. Application to the Integrating Project

Week 6: Topic 8_Strategic direction of innovation

Management trend analysis. Benchmarking of best practices. Application to the Integrating Project

Week 7: Topic 4_Innovation with social and environmental responsibility

Responsible innovation. Social and environmental objectives. Innovations with social and environmental responsibility.

Topic 5_Collaborative innovation

Collaborate to maximize results. Phases of collaborative innovation. The cycle of synergy.

Week 8: Topic 6_Creativity and innovation

Individual and team creativity. Phases of the creative process. Stimuli and barriers. Tools for creativity and innovation. Tools to generate ideas. Tools for presenting ideas.

Week 10: Theme 7_Design Thinking

What is Design Thinking. Stages and tools. Group activity.

Week 11: Theme 7_Design Thinking

Group activity (cont.).

Week 12: Topic 8_Strategic direction of innovation

The idea of innovation. Application to the Integrating Project

Week 13: Topic 8_Strategic direction of innovation

Development of innovation. Application to the Integrating Project

Week 14: Completion of Integrating Project

Week 15: Tutoring and delivery and defense of the Integrating Project

Week 16: Exam

Evaluation

Exam : 30% (research activity: 50%; test: 50%)

Portfolio: 45% (delivery 1: 75%; delivery 2: 25%)

Integrating project: 20%

Portfolio is a form of evaluation that allows monitoring of the learning process and that allows continuous improvement throughout the process. It is a collection of all activities that demonstrate the knowledge and skills acquired. You need to take care of spelling, syntax and presentation in general, always indicating the bibliography.

The integrative project is a group work that is done in coordination with several subjects of the course in order to deal with an engineering problem in a transversal way. In the case of the integrative project of 3rd year 2nd semester, the involved subjects are: Quantitative Methods for Logistics, Information and Distribution Systems, Industrial Economics and Innovation. You need to take care of spelling, syntax and presentation in general, always indicating the bibliography.

Note: in case the student does not develop the project or equivalent work, the mark of the subject will be of Not attended.

Bibliography

Fagerberg Jan et al. (2005). **The Oxford Handbook of Innovation**. Oxford University Press.