Course guide
240EI533 - 240EI533 - Technological Innovation

Last modified: 15/06/2023

Unit in charge: Barcelona School of Industrial Engineering
Teaching unit: 732 - OE - Department of Management.

Degree: MASTER'S DEGREE IN INDUSTRIAL ENGINEERING (Syllabus 2014). (Compulsory subject).

Academic year: 2023 **ECTS Credits:** 3.0 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: Calleja Sanz, Gema

Others: Calleja Sanz, Gema
Inetskaya, Anna
De La Torre Chirivella, Rita Sofia
Magallón Hernández, Ignacio
Vilà PIcas, Ferran

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. Manage the research, development and technological innovation, based on the transfer of technology and property rights and patents
2. Manage the Research, Development and Technological Innovation, based on the transfer of technology and property rights and patents.

TEACHING METHODOLOGY

MD1. Dynamic master lecture
MD2. Flipped classroom with teaching videos available at the virtual campus
MD3. Autonomous learning
MD4. Project-based learning
MD5. Design Thinking
MD6. Team work
MD7. CAse-based learning

LEARNING OBJECTIVES OF THE SUBJECT

The lessons are built on practical knowledge outlining how technology innovation is managed in real companies. The subject covers specifically Innovation Management through acquisition of new technologies and innovations. Additionally, this subject aims to provide the student with the necessary knowledge to deal with management, acquisition and protection of new research-based knowledge and innovations, as the base for ensuring a sustainable competitive advantage for companies in their market.

Specific objectives:
1. Identify the dynamics of the innovation processes in its different typologies and components
2. Understand Innovation Management tools and how to proceed to launch new products and services
3. Know how to protect innovation through different mechanisms

STUDY LOAD

Type	Hours	Percentage
Self study	48,0	64.00
Hours large group	27,0	36.00

Total learning time: 75 h

CONTENTS

1. TECHNOLOGY AND STRATEGY

Description:
Concept and types of technology. New technology trends and their impact in the organizations. Technology life cycle. Technology and strategy in a company.

Specific objectives:
1

Full-or-part-time: 83h
Theory classes: 8h
Self study : 75h

2. INNOVATION

Description:
Innovation and technology change. The technology innovation process: models.
Invention and innovation. Creativity and innovation. Diffusion of the innovation. The design in a company.

Full-or-part-time: 12h
Theory classes: 4h
Practical classes: 2h
Self study : 6h

3. INNOVATION AND ORGANIZATIONS

Description:
Main elements and drivers influencing innovation in a company. Innovation in SME?s (Small-Medium Enterprises). R & D department: basic characteristics and organization. Relations of the R & D department.

Full-or-part-time: 12h
Theory classes: 4h
Practical classes: 2h
Self study : 6h

4. TECHNOLOGY TRANSFER

Description:
Purchase and sell of technology. Different methods of technology transfer. Technological alliances. The problem of technology adoption.

Full-or-part-time: 6h
Theory classes: 2h
Self study : 4h

5. PROTECTION OF INNOVATION

Description:
Patent and commercial secret. Legal regime to protect inventions and innovations. Protection of distinctive signs. Licensing.

Full-or-part-time: 6h
Theory classes: 2h
Self study : 4h

GRADING SYSTEM

Course grade = 50% Course team project + 45% Class activities + 5% Class participation
Course project = 0,7*Written report+ 0,3*Pitch Presentation

Where:

Written report: Report of a technology innovation project, ideated by the students. The written report is done in groups, and all the group members share the same grade.
Pitch Presentation: Oral presentation of the innovation opportunity. The presentation is grades in groups and the grade is scored individually.
Deliverables on campus (45%, average grade of all the deliverables: Coure project milestones, practical exercises, tech trends, other activities).

The act of reevaluation will be the delivery of a report. If the student who attends the reevaluation does not pass the course, the highest grade between the result of the ordinary evaluation (if any) and the reevaluation is kept.

BIBLIOGRAPHY

Basic:
- Trott, Paul. Innovation Management and New Product Development [on line]. 6th ed. Harlow: Pearson, 2017 [Consultation: 27/05/2020]. Available on: https://ebookcentral.proquest.com/lib/upcatalunya-ebooks/detail.action?docID=5186181. ISBN 9781292133423.
- Barba, E. Innovación : 100 consejos para inspirarla y gestionarla. Barcelona: Libros de Cabecera, 2011. ISBN 9788493830335.

Complementary:
- Cornella, Alfons ; Epi Amiguet. La alquimia de la innovación. Barcelona: DEUSTO, 2007. ISBN 9788423424627.
- Chesbrough, H.. Open Innovation: The new imperative for creating and profiting from technology. Boston: Harvard Business School Press, 2003. ISBN 9781422102831.
- Escorsa, P. ; Solé, F. La Innovació tecnològica a Catalunya. Barcelona: Edicions de la Magrana, 1988. ISBN 84-7410-402-5.
- Ponti, F. ¡Innovación! : 7 movimientos para construir una empresa innovadora. Barcelona [etc.]: Granica, 2009. ISBN 9788483581568.
- Kelley, Tom. Las Diez caras de la innovación : estrategias para una creatividad excelente. Barcelona: Paidos Ibérica, 2010. ISBN 9788449323263.