

Academic Year: ( 2019 / 2020 )

Review date: 20-04-2020

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: USERO SANCHEZ, MARIA BELEN

Type: Basic Core ECTS Credits : 6.0

Year : 2 Semester : 2

Branch of knowledge: Engineering and Architecture

**REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)**

No prerequisites.

**OBJECTIVES**

By the end of this subject, students will be able to have:

1. knowledge and understanding of the scientific and mathematical principles underlying the branch of industrial engineering;
2. awareness of the wider multidisciplinary context of engineering, applying knowledge of mathematics, statistics, economics and other scientific fields to the analysis of business situations.
3. the ability to apply their knowledge and understanding to analyse engineering products, processes and methods;
4. an understanding of methodologies, and an ability to use them in the analysis of business situations;
5. the ability to select and use appropriate methods in the management of the companies;
6. an awareness of the non-technical implications of engineering practice within the management of the companies;
7. function effectively as an individual and as a member of a team;
8. demonstrate awareness of the health, safety and legal issues and responsibilities of engineering practice, the impact of engineering solutions in a societal and environmental context, and commit to professional ethics, responsibilities and norms of engineering practice;
9. demonstrate an awareness of project management and business practices, such as risk and change management, and understand their limitations;

**DESCRIPTION OF CONTENTS: PROGRAMME**

1. The Firm. Types
  - 1.1. Concept and nature of the firm. The entrepreneur and the firm
  - 1.2. Business processes and business functions
  - 1.3. The role of engineering and engineers in Business Administration
  - 1.4. Types of companies & legal forms
2. Value creation: environment and competitive advantage
  - 2.1. Value creation and firm's goals
  - 2.2. The business environment and competence
  - 2.3. Firm's internal analysis and value chain
  - 2.4. Competitive strategy and business models
3. Financial management (I)
  - 3.1. Introduction to Accounting
  - 3.2. Firm's Financial-economic structure. Financial statements
  - 3.3. Alternatives for financing the firm
4. Financial management (II)
  - 4.1. Firm's economic and financial viability
  - 4.2. Ratios and financial leverage analysis
  - 4.3. Investment analysis: NPV and IRR
5. Marketing and sales management
  - 5.1. The marketing Plan

- 5.2. Segmentation and positioning
- 5.3. The marketing mix variables

- 6. The management function.
  - 6.1. The role of management
  - 6.2. Human resource management
  - 6.3. Projects and teams management

- 7. Entrepreneurship and innovation: Technology-based companies
  - 7.1. Concept and types of innovation
  - 7.2. Innovation Management. Strategies for the protection and exploitation of technology
  - 7.3. Technological entrepreneurship. Technology-based companies

#### LEARNING ACTIVITIES AND METHODOLOGY

Lectures, exercises, business plan, cases and assignments to be carried out by the students and discussed during the sessions, readings assigned by the instructor or identified by the students.

#### ASSESSMENT SYSTEM

60% Final written exam. Minimum grade required in the final exam: 4/10  
40 % Continuous evaluation. Partial exams will be held, approximately in the tentative weeks indicated in the schedule and complementary evaluation system.

<b>% end-of-term-examination:</b>	60
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	40

#### BASIC BIBLIOGRAPHY

- Rudansky-Kloppers, S et al. Introduction to Business Management, Oxford University Press, 2013

#### ADDITIONAL BIBLIOGRAPHY

- Christensen, C. The innovators dilemma: when new technologies cause great firms to fail, Harvard Business Review Press, 2013
- Christensen, C., Raynor, M. The innovators solution: Creating and sustaining successful growth, Harvard Business Review Press., 2013
- Diaz, E. et al. NEBTs \$ nuevas empresas de base tecnológica, Fundación para el Conocimiento Madri+D, 2016
- Drucker, P. Innovation and Entrepreneurship, Harper Business, 2006
- Schilling, M. Strategic Management of Technological Innovation, McGraw Hill, 2017