

Academic Year: (2019 / 2020)

Review date: 30-04-2019

Department assigned to the subject: Department of Mechanical Engineering

Coordinating teacher: USERO SANCHEZ, MARIA BELEN

Type: Basic Core ECTS Credits : 6.0

Year : 2 Semester : 2

Branch of knowledge: Engineering and Architecture

STUDENTS ARE EXPECTED TO HAVE COMPLETED

No prerequisites.

COMPETENCES AND SKILLS THAT WILL BE ACQUIRED AND LEARNING RESULTS.

The main objectives for this course are to familiarize future engineers with the concept of private companies and their institutional and legal framework, as well as with the essentials of business management. In addition, it will convey the relevant role of engineering and engineers in business management.

Specific capabilities:

- Understand the concept of a company as a system, its various constituent subsystems and their interrelationships.
- Position engineering within the overall business activities, and understand the engineer's role in the management of the companies.
- Appropriate understanding of the company's institutional and legal framework.
- Identify, for each major functional area, its scope and the main approaches and techniques used in this area.
- Identify the main business processes, and the need for their cross-functional integration.
- Analyze how economic or sustainability constraints restrict viable options for approaching and solving technical challenges

Generic capabilities:

- Analysis of unstructured situations and decisions, with incomplete and not fully reliable information and multiple, conflicting objectives.
- Qualitative reasoning and argumentation. Written expression of this qualitative reasoning
- Ability to apply knowledge of mathematics, statistics, economics and other scientific fields to the analysis of business situations.
- Ability to communicate with non-technical executives, applying the appropriate vocabulary and structuring tools.

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.

% end-of-term-examination: 60

% of continuous assessment (assignments, laboratory, practicals...): 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