Introduction to engineering management

Academic Year: (2019 / 2020) **Review date: 07-07-2020**

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: PAZ APARICIO, CARMEN

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

Upon successful completion of this course, students will be able to:

1. Have knowledge and understanding of the fundamentals of business organization and management, the concept of company, institutional and legal framework of the company.
2. Be aware of the multidisciplinary context of industrial engineering, applying knowledge of mathematics, statistics, economics and other scientific fields to the analysis of business situations.
3. Have the ability to apply their knowledge and understanding to the analysis of process engineering and methods.
4. Have an understanding of the different methods and the ability to use them to analyze business situations.
5. Be able to select and use appropriate methods for business management.
6. Be aware of the implications of engineering practice in business management.
7. Function effectively both individually and as a team.
8. Demonstrate awareness of the responsibility of engineering practice, social and environmental impact, and commitment to professional ethics, responsibility and standards of engineering practice.
9. Demonstrate awareness of business practices and project management, as well as risk management and control, 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

Continuous evaluation (40%).
Final exam (60%).

It is compulsory to obtain a minimum of 4 points over 10.

% end-of-term-examination:	60
% of continuous assessment (assigments, laboratory, practicals…):	40

BASIC BIBLIOGRAPHY

- S Rudansky-Kloppers, B Erasmus, J Strydom, JA Badenhorst-Weiss, y otros (eds.) Introduction to Business Management., Oxford University Press, 2013

ADDITIONAL BIBLIOGRAPHY

- Schilling, M. Strategic Management of Technological Innovation, McGraw Hill, 2017