

Academic Year: ( 2023 / 2024 )

Review date: 12-02-2024

Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: PAZ APARICIO, CARMEN

Type: Electives ECTS Credits : 6.0

Year : Semester :

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

No prerequisites

**SKILLS AND LEARNING OUTCOMES**

CB1. Students have demonstrated possession and understanding of knowledge in an area of study that builds on the foundation of general secondary education, and is usually at a level that, while relying on advanced textbooks, also includes some aspects that involve knowledge from the cutting edge of their field of study.

CB4. Students should be able to communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.

CG3. Solve problems with initiative, decision making, creativity, and communicate and transmit knowledge, skills and abilities, understanding the ethical, social and professional responsibility of the engineering activity. Capacity for leadership, innovation and entrepreneurial spirit.

CT1. Work in multidisciplinary and international teams as well as organize and plan work making the right decisions based on available information, gathering and interpreting relevant data to make judgments and critical thinking within the area of study.

CT4. Acquire and handle basic humanistic knowledge to complete the student's cross-sectional formative profile.

CT5. Handle interpersonal skills about initiative and responsibility, negotiation, emotional intelligence, etc. as well as calculation tools that allow to consolidate the basic technical skills that are required in any professional environment.

CT4. Acquire and handle basic humanistic knowledge to complete the student's cross-sectional formative profile.

CT5. Handle interpersonal skills about initiative and responsibility, negotiation, emotional intelligence, etc. as well as calculation tools that allow to consolidate the basic technical skills that are required in any professional environment.

RA1. To have acquired sufficient knowledge and proved a sufficiently deep comprehension of the basic principles, both theoretical and practical, and methodology of the more important fields in science and technology as to be able to work successfully in them.

RA2. To be able, using arguments, strategies and procedures developed by themselves, to apply their knowledge and abilities to the successful solution of complex technological problems that require creating and innovative thinking.

RA3. To be able to search for, collect and interpret relevant information and data to back up their conclusions including, whenever needed, the consideration of any social, scientific and ethical aspects relevant in their field of study.

RA4. To be able to successfully manage themselves in the complex situations that might arise in their academic or professional fields of study and that might require the development of novel approaches or solutions.

RA6. To be aware of their own shortcomings and formative needs in their field of specialty, and to be able to plan and organize their own training with a high degree of independence.

**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

- 60% Final exam
- 40% Continuous evaluation (20% Business Plan, 15% Partial Exams, 5% Individual Participation)

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

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