

Course guide

295558 - 295EQ023 - Management and Organization

Last modified: 26/06/2025

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

Degree: MASTER'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2019). (Compulsory subject).

Academic year: 2025 **ECTS Credits:** 6.0 **Languages:** English

LECTURER

Coordinating lecturer:

Others: Segon quadrimestre:
MARIONA VILÀ BONILLA - T11, T12

PRIOR SKILLS

Knowledge of English at a sufficient level to speak, understand and read normally.
Due to the fact it is a subject that the student has not done during their undergraduate studies, it is not necessary to get other previous capacities but a minimal technical knowledge (mathematics and calculation in general) that students enrolled in the master already own.

REQUIREMENTS

- Theoretical activities and class exercises can be done in any classroom with the only requirement of having a computer, projector and office software (PowerPoint, Excel, Word, Acrobat).
- For the development of the practical classes, it is necessary to have a classroom where tables and chairs can be moved in different ways to form dynamic groups. The practices are concreted in business cases. The cases are studied in groups of 4 or 5 students, and the conclusions are presented in two weeks in an oral presentation.

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

CEMUEQ-07. Directing and organizing companies, as well as production and service systems, applying knowledge and capabilities of industrial organization, commercial strategy, planning and logistics, commercial and labor legislation, financial and cost accounting
CEMUEQ-08. Direct and manage the organization of work and human resources, applying criteria of industrial safety, quality management, occupational risk prevention, sustainability, and environmental management
CEMUEQ-11. Direct and carry out verification, control of facilities, processes and products, as well as certifications, audits, verifications, tests and reports

Generical:

CGMUEQ-01. Ability to apply the scientific method and the principles of engineering and economics, to formulate and solve complex problems in processes, equipment, facilities and services, in which the matter undergoes changes in its composition, state or energy content, characteristic of the chemical industry and other related sectors among which are the pharmaceutical, biotechnological, materials, energy, food or environmental
CGMUEQ-03. To lead and to manage technically and economically projects, facilities, plants, companies and technology centers in the field of chemical engineering and related industrial sectors
CGMUEQ-08. Lead and define multidisciplinary teams capable of solving technical changes and management needs in national and international contexts
CGMUEQ-10. Adapt to changes, being able to apply new and advanced technologies and other relevant developments, with initiative and entrepreneurial spirit

Transversal:

01 EIN. ENTREPRENEURSHIP AND INNOVATION: Knowing about and understanding how businesses are run and the sciences that govern their activity. Having the ability to understand labor laws and how planning, industrial and marketing strategies, quality and profits relate to each other.

03 TLG. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.

TEACHING METHODOLOGY

- Master Class Participatory: Documentation and bibliography on the theory of each subject will be identified and mostly provided in advance.
- Problem-based learning: Preparation and completion of case studies and exercises in class.
- Autonomous learning

LEARNING OBJECTIVES OF THE SUBJECT

Get an awareness of a company operating in an open system with continuous relationships with the environment. Know how to identify and analyze business models, key business functions, formulation, planning, deploying and implementation of business strategies, decision-making in situations of uncertainty, troubleshooting and tools for management control (scorecards), management of intangible assets and the nature of the management function. This awareness can be applied in managing complex projects, Organizational business units and whole Organizations.

Ability to analyze economic information and evaluate the impact of business decisions on the company's economic and financial situation.

Specific objectives:

1. Get an awareness of the concepts, principles and tools of the administration and management of any kind of enterprises.
2. To have a global and integrated vision of the Organization.
3. Ability to formulate policies and business strategies.
4. Ability to analyze the economic and financial information of the company, for decision-making processes.
5. To Develop managerial skills.
6. Get capacity to apply the knowledge acquired in the design and management of enterprises or business units.

STUDY LOAD

Type	Hours	Percentage
Hours large group	40,5	27.00
Hours small group	13,5	9.00
Self study	96,0	64.00

Total learning time: 150 h

CONTENTS

Introduction to Organizations

Description:

Definitions. The fundamentals: Mission, vision and values.

Different types of Organizations.

The organization as an open system. Processes. Functional structure an organization

Specific objectives:

1 i 2

Full-or-part-time: 8h

Theory classes: 8h

Business Models and strategy

Description:

Different methodologies for the identification of business models.

Strategy, concepts. Competitive analysis (external and internal analysis).

Enhancing intellectual capital management as a key source of sustainable competitive advantage

Specific objectives:

1, 2, 3 i 6

Full-or-part-time: 12h

Theory classes: 12h

Managerial skills

Description:

Managing people. Team working and multicultural team working. Organizational leadership

Specific objectives:

1 and 5

Full-or-part-time: 8h

Theory classes: 8h

Economic and financial structure of organisations

Description:

Economic and financial structure of the Organization: Balance sheet and P&L statements. Economic and Financial Analysis: tools and ratios

Economic and financial planning (budgets and Forecasts).

Specific objectives:

1, 2, 4, i 6

Full-or-part-time: 12h

Theory classes: 12h

Costs

Description:

Concept and differences between cost, overheads and payments

Type of cost: fixed costs. Variable/semi-variable costs. Direct/indirect costs

Methods for calculating costs: Full costing. Direct costing. ABC/ABM (Activity Based Cost/ Activity based Management).

Specific objectives:

1, 2, 4, i 6

Full-or-part-time: 8h

Theory classes: 8h

Investment Decisions. Investment Analysis

Description:

Concepts.

Types of investments.

Key variables Initial outlay and cash-flow

Investment analyses: Static and dynamic methods

Specific objectives:

1, 2, 4, i 6

Full-or-part-time: 8h

Theory classes: 8h

Operations Planning and Management

Description:

Production management.

Production systems (Push Systems, Pull Systems, TOC, JIT)

Continuous improvement. 5S, TPM

Specific objectives:

1, 3 i 6

Full-or-part-time: 8h

Theory classes: 8h

Project Management

Description:

Project Management: Introduction

Project planning

Project execution

Closure and revision; The Learning Cycle

Specific objectives:

1, 3 i 6

Full-or-part-time: 4h

Theory classes: 4h

GRADING SYSTEM

- 2 Partial examinations each one weighting 35% of the final grade. (Total 70%)
- Participation and exercises run in class (Periodic controls): 10%
- Average of the oral presentations of the conclusions obtained from each of the business cases seen in the practice sessions: 20%

If the course is not passed, the students will take a final exam, with the final result being achieved in this exam.

In case of the final exam is not being aproved, students do a re-evaluation test. The criteria that will govern this evaluation test are set out in point 1.1.3 of the Evaluation and Permanence Regulations for the EEBE undergraduate and master studies.

<http://eebe.upc.edu/ca/estudis/normatives-academiques/documents/eebe.normativa-avaluacio-i-permanencia-18-19-aprovat-je-2018-06-013.pdf>

EXAMINATION RULES.

Rules will be facilitated at the beginning of the academic year

BIBLIOGRAPHY

Basic:

- Aguer Hortal, Mario; Pérez Gorostegui, Eduardo. Manual de administración y dirección de empresas : teoría y ejercicios resueltos. 2010. Madrid: Centro de Estudios Ramón Areces, DL 2010. ISBN 9788480049887.
- Fuentes Fuentes, María del Mar; Cordon Pozo, Eulogio (coords.). Fundamentos de dirección y administración de empresas. 3a ed. Madrid: Pirámide, cop. 2014. ISBN 9788436832044.
- Iborra Juan, María [et al.]. Fundamentos de dirección de empresas : conceptos y habilidades directivas. Madrid: Thomson, cop. 2007. ISBN 8497323718.
- Moyano Fuentes, José [et al.]. Administración de empresas : un enfoque teórico-práctico. Madrid [etc.]: Pearson Prentice Hall, cop. 2011. ISBN 9788483227527.

Complementary:

- Grant, Robert M. Contemporary strategy analysis. 8th ed. Chichester, UK: John Wiley & Sons, cop. 2012. ISBN 9780470747100.
- Lewis, Richard D. When cultures collide : leading across cultures. 3rd ed. Boston ; London: Nicholas Brealey International, 2006. ISBN 9781904838029.
- Suárez Suárez, Andrés S. Decisiones óptimas de inversión y financiación en la empresa. 21ª ed. Madrid: Pirámide, cop. 2008. ISBN 9788436818994.