

## Supply chain management II

Academic Year: ( 2022 / 2023 )

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Department assigned to the subject: Mechanical Engineering Department

Coordinating teacher: DURAN HERAS, ALFONSO

Type: Electives ECTS Credits : 6.0

Year : 4 Semester :

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

Supply Chain Management I  
Engineering Management I

## OBJECTIVES

Identify the main challenges and solution approaches in integrated Supply Chain Management, including the application of Information Systems.  
Establish the most appropriate manufacturing planning and control systems for the various types of companies.  
Application of the Lean approach in the design and operation of the productive and logistic systems, and compare them with alternative approaches.  
Apply investment project evaluation and financial Project Management methods and techniques.  
Understand the opportunities and implications of the internationalization process.

## DESCRIPTION OF CONTENTS: PROGRAMME

IMPORTANT NOTICE: In the academic year 2022/23 (as in 21/22) this subject will be taught online

Subjects SCM I and SCM II have been selected in the "1ª Convocatoria de Aprendizaje Activo en Docencia Digital (Active Learning in Digital Education) (Vicerrectorado de Estrategia y Educación Digital)", thus they will be taught entirely online (except the midterm tests and the final exam), through platforms such as BBC and/or Engageli. Thus, students enrolling in any of these elective courses must regularly attend the (online) sessions, and adhere to an active methodology, involving continuous individual and group work, as preparation and complement of the online sessions. Given the innovative and exploratory nature of this call ("Convocatoria"), by enrolling in these elective courses students accept that the (anonimized) results of these courses (academic results, surveys, experiences...) might be used for research and/or learning methodology development purposes, and eventually disseminated (e.g. in Education conferences, journals,...)

- \* Introduction
- \* Operations and supply chain strategies, within the framework of the overall business strategy
- \* Product and process design. Innovation
  - \*\* Integrated design and management of materials, infrastructures, teams, people and information
  - \*\* Strategic management of R&D&I. Technological capital and competitiveness
  - \*\* Frugal design
  - \*\* Service processes
  - \*\* Push vs. Pull, Just In Time, Lean Systems, Theory of Constraints
- \* Information Systems in the Supply Chain
- \* Advanced Project and Operations Management. Methods and tools
  - \*\* Advanced Project Management
  - \*\* Investment project evaluation

- \*\* Manufacturing Planning and Control Systems (MPCS)
- \*\* Inventory management under uncertainty
- \*\* Warehouse design and operation
- \*\* Distribution
- \* Current challenges in Supply Chain Management
  - \*\* Quantitative and Qualitative techniques and tools in Supply Chain Management
  - \*\* Digital manufacturing. Additive manufacturing
  - \*\* Internationalization. Offshoring, Reshoring
  - \*\* Lean Management

## LEARNING ACTIVITIES AND METHODOLOGY

Lectures, exercises, practical sessions, 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.

Please see "Important Notice" in "Program": In the academic year 2021/22 they will take place online (except the midterm tests and the final exam)

## ASSESSMENT SYSTEM

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

60% Final written exam.

40 % Continuous evaluation. Partial exams will be held, approximately in the tentative weeks indicated in the schedule. Optionally, complementary evaluation system. May apply sampling based grading.

See "Important Notice" in the "Program" section, regarding active online methodology (at least in academic year 2021/22)

Minimum grade required in the final exam: 4

## BASIC BIBLIOGRAPHY

- Instructor provided material: Slides, exercises.... URLs and other Internet resources provided by the instructor..., Through Aula Global.. .
- Jacobs, F.R.; Chase, R.B.; Aquilano, N.J Operations and supply chain management , McGraw-Hill (ed: 16e), 2019
- PMI PMBOK guide, PMI, 2017

## ADDITIONAL BIBLIOGRAPHY

- Goldratt, E., Cox, J. The Goal: A Process of Ongoing Improvement , Gower Publishing Ltd, 2004, 3rd Revised edition
- Jacobs, F.R.;Berry, W.L.; Whybark, D.C., Vollmann, Th.E. Manufacturing Planning and Control Systems for Supply Chain Managemen, Mc Graw Hill, 2010 - Ed. 6
- Santos, J., Wysk, R., Torres, J.M Mejorando la producción con lean thinking, Pirámide, 2010
- Schroeder, R. G Administración de Operaciones. Concepto y Casos Contemporáneos, Mc Graw Hill, 2011- Ed 5