Course guide
220206 - 220206 - Operations Management

Last modified: 19/04/2023

Unit in charge: Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 732 - OE - Department of Management.

Degree: MASTER'S DEGREE IN INDUSTRIAL ENGINEERING (Syllabus 2013). (Compulsory subject).

Academic year: 2023 **ECTS Credits:** 5.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: FEDERICO GARRIGA GARZON

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. Knowledge and skills to organize and manage companies.
2. Knowledge and skills of strategy and planning applied to different organizational structures.
3. Knowledge of management, industrial organization, production, logistics, quality management and information systems.
4. Skills for work organization and human resource management. Knowledge of risk prevention.
5. Extension of some specific technology areas such as Materials Science and Metallurgical Engineering, Construction Engineering, Systems Engineering, Automation and Computer Engineering, Electrical Engineering, Electronics Engineering, Mechanical Engineering, Chemical Engineering, Textile and Paper, Statistics and Operations Research, Graphic Expression in Engineering, Physics and Nuclear Engineering, Language and Systems, Heat Engines, Applied Mathematics, Fluid Mechanics and Turbo machines, Business Administration, Engineering Design, Strength of Materials and Structures, Aerospace Engineering.

TEACHING METHODOLOGY

The course is developed by the use of three types of methodology:
- Lecture sessions.
- Case study debates and problem-solving classes (case studies and exercises).
- Self-study for doing exercises and activities.

In the lecture sessions, lecturers will introduce the theoretical basis of the concepts, methods and results and illustrate them with examples appropriate to facilitate their understanding.
In the case study debates and problem solving sessions, lecturers guide students in applying theoretical concepts to solve problems and cases, always using critical reasoning. We propose that students solve exercises in and outside the classroom, to promote contact and use the basic tools needed to solve problems.
Students, independently, need to work on the materials provided by lecturers and the outcomes of the sessions of exercises/problems, in order to fix and assimilate the concepts.
The lecturers provide the curriculum and monitoring of activities (by ATENEA).

LEARNING OBJECTIVES OF THE SUBJECT

The aim of the course is that students deepen in the management techniques used in making strategic decisions, tactical and operative in the functional area of operations.

STUDY LOAD

Type	Hours	Percentage
Hours large group	30,0	24.00
Self study	80,0	64.00
Hours small group	15,0	12.00

Total learning time: 125 h

CONTENTS

Module 1: Operations Management

Description:
Simulation.
Process strategy.
Plant layout.
Toyota Production System.
Production Planning

Related activities:
Activity 1: Large/Theory group sessions.
Activity 2: Exercises/Medium groups sessions.
Activity 3: Atenea tasks, which will take place throughout the class period.
Activity 4: Final Exam.
Activity 5: Practices.

Full-or-part-time: 125h
Theory classes: 30h
Laboratory classes: 15h
Self study : 80h

GRADING SYSTEM

The final grade depends on the following assessment criteria:
- Activity 3 (Atenea tasks, which will take place throughout the class period), weight: 35%.
- Activity 4 (exam), weight: 35%.
- Activity 5 (Practices), weight: 30%.

Unsatisfactory exam (4 activity) results (less than six points) may be redone by a written test to be done on the day set for the final exam. The note obtained in the revision test will only replace the original in case of being greater.

BIBLIOGRAPHY

Basic:

- Garriga Garzón, F. Problemas resueltos de dirección de operaciones [on line]. Barcelona: OmniaScience, 2013 [Consultation: 30/09/2022]. Available on: http://dx.doi.org/10.3926/oss.13. ISBN 9788494211836.
- Companys, Ramón; Corominas, Albert. Organización de la producción II: dirección de operaciones. Barcelona: Edicions UPC, 1995-1996.
- Heizer, Jay H.; Render, Barry. Dirección de la producción y de operaciones: decisiones estratégicas [on line]. 11ª ed. Madrid [etc.]: Prentice Hall, 2015 [Consultation: 15/06/2022]. Available on: https://www-ingebook-com.recursos.biblioteca.upc.edu/ib/NPcd/IB_BooksVis?cod_primaria=1000187&codigo_libro=5779. ISBN 9788490352878.
- Heizer, Jay H; Render, Barry. Dirección de la producción y de operaciones: decisiones tácticas. 8ª ed. Madrid [etc.]: Prentice Hall, cop. 2007. ISBN 9788483223611.
- Domínguez Machuca, J. A. Dirección de operaciones: aspectos tácticos y operativos en la producción y los servicios. Madrid [etc.]: McGraw-Hill, cop. 1995. ISBN 9788448118037.
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- Companys, Ramón; Corominas, Albert. Organización de la producción I: diseño de sistemas productivos. Barcelona: Edicions UPC, 1993-1994.
- Garriga Garzón, F. Tome la mejor decisión experimentando previamente sus consecuencias: casos prácticos resueltos de simulación Monte Carlo mediante hoja de cálculo [on line]. Terrassa: OmniaScience, 2017 [Consultation: 07/10/2022]. Available on: http://dx.doi.org/10.3926/oss.35. ISBN 9788494635243.

Complementary:

- Monden, Yasuhiro. Toyota production system: an integrated approach to just-in-time [on line]. 4th ed. Boca Raton: CRC Press, 2012 [Consultation: 25/05/2022]. Available on: https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?pq-origsite=primo&docID=1446651. ISBN 9781439820971.
- Davis, M.M.; Aquilano, N.J.; Chase, R.B. Fundamentos de dirección de operaciones. Madrid: McGraw-Hill, 2001. ISBN 8448130847.
- Krajewski, L.J.; Ritzman, L.P.; Malhotra, M. Administración de operaciones: procesos y cadenas de valor. 10ª ed. México: Pearson Educación, 2013. ISBN 9786073221221.
- Chase, R.B.; Aquilano, N.J.; Jacobs, F.R. Administración de producción y operaciones: manufactura y servicios. 8ª ed. Santa Fe de Bogotá: McGraw-Hill, 2000. ISBN 9584100718.