

# Syllabus

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**Course:** Supply Chain Management and Transactions

**Credits:** 6 ECTS

**Program:** Business Administration and Management

**Module:** Core Education

**Subject:** Supply Chain Management and Transactions

**Code:** 802329

**Abbreviation:** MA10

**Subject coordinator:** DA. Mariona Vila

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## 01 Faculty

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### 01.1 Subject coordinator

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## 02 Presentation

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### 02.1 Description

The subject presents the main concepts and techniques related to the area of production and operations of companies. Although this is an area traditionally dominated by professionals related to engineering or studies closer to the nature of the operations of companies, it is increasingly important for students of Business Administration to know the area in some depth by of the reasons.

### 02.2 Relevant Professional Applications

The first is the interaction of virtually any area of the company with that of operations, which requires knowledge of the functions, techniques and jargon used in this area essential and critical for any company. Secondly, as a result of globalization and the possibilities of outsourcing, a growing knowledge of business strategy and the systemic operation of the company, aspects that bring together the undergraduate students, is increasingly prioritized among operations managers.

## 03 Competencies

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### 03.1 Course Competencies

#### Basic Competencies

- CB02 -** Students know how to apply their knowledge to their work or vocation in a professional way. They possess the competencies that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study.
- CB04 -** Identify key environmental factors that affect operations strategy
- CB05 -** Students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.

#### Specific Competencies

- CEDPR01 -** Measure productivity and analyze its evolution over time using sophisticated models
- CEDPR03 -** Being able to achieve a goal through an organized collective task, with roles and responsibilities distributed among the different members.
- CGPR01 –** Manejar la terminología básica de la gestión de proyectos empresariales.
- CGPR02 –** Aplicar las técnicas y métodos de gestión de proyectos para la definición, planificación y seguimiento de proyectos de empresa o de alguna de sus áreas funcionales.
- CGPR03 –** Utilizar aplicaciones informáticas de gestión de proyectos.
- CGPR04 –** Trabajar como miembro de un equipo en la realización de proyectos.
- CEDPR07 -** Define objectives, develop strategies and plan tasks and schedules to achieve the objectives.

- CEDPR09** - Develop an adaptation to changes and different situations, people or groups, enriching themselves with diversity.
- CEDPR10** - Being able to influence, direct and develop others through appropriate actions and behaviors, with involvement and management towards continuous improvement

### General Competencies

- CG02** - Communicating orally and in writing with others about learning outcomes, thinking development and decision making; participating in debates on topics of the specialty itself.
- CG03** - Being able to work as a member of an interdisciplinary team either as a member, or as performing tasks of management and development of people in order to contribute to developing projects with pragmatism and sense of responsibility, assuming commitments taking into account resources available.
- CG04** - Managing the acquisition, structuring, analysis and visualization of data and information in the field of specialty and critically assess the results of this management.
- CG05** - Detecting limitations and lack of knowledge and own competences and overcome them through critical reflection and the choice of the best performance to expand them.
- CG06** - Identifying obstacles and opportunities problems. Know how to propose improvements and find new strategies or solutions, planning and organizing tasks to achieve the objectives within the established deadlines. Committing to quality work, through effort, perseverance and desire for personal and professional growth.
- CG07** - Being able to perceive and understand the social situations of the people around them. Showing flexibility and adaptability to new challenges and professional demands in order to achieve efficiency in managing change and in the development of interpersonal skills

## Transversal competencies

- CT03 –** Managing talent and innovation.
- CT04 -** Integrating into any functional area of the company and / or organization and perform professionally any assigned management work.

## 04 Program

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### UNIT 1. INTRODUCTION TO OPERATIONS MANAGEMENT AND THE MEASUREMENT OF PRODUCTIVITY

#### Contents

- 1.1 The logistics system and supply chain management
- 1.2 Decisions of the area of operations
- 1.3 Trading strategy
  - 1.3.1 The current competitive environment
  - 1.3.2 Key competitive variables
  - 1.3.3 Types of strategy and their evolution over time
- 1.4 New trends in operations: industry 4.0
- 1.5 Types of production processes
- 1.6 Productivity measurement models
  - 1.6.1 Partial productivity models
  - 1.6.2 Total Productivity Models

### UNIT 2. PROJECT MANAGEMENT

- 2.1 Concept and key variables in project management
- 2.2 Organizational aspects of the projects
  - 2.2.1 Phases of the project
  - 2.2.2 The project leader
  - 2.2.3 The team
  - 2.2.4 Communication and reporting systems in the project
- 2.3 Techniques for the temporary planning of projects. Gantt and ROY charts
- 2.4 Resource planning
  - 2.4.1 Load diagram
  - 2.4.2 Resolution of over-allocation of resources
    - 2.4.2.1 Simple method
- 2.5 Software for project management

### UNIT 3. DESIGN OF PROCESSES

#### Contents

- 3.1 Design of new products

- 3.2 Main process diagrams
- 3.3 Capacity and performance measures
- 3.4 Design of assembly lines
  - 3.4.1 Determination of cycle times
  - 3.4.2 Assignment of operations to workstations
  - 3.4.3 Determination of productive inefficiency and its impact on costs
- 3.5 Measurement of work
  - 3.5.1 Time measurement systems
  - 3.5.2 Cycle time calculation
  - 3.5.3 Cost calculation

#### UNIT 4. PRODUCTION PLANNING

##### Contents

- 4.1 Levels of aggregation of the product portfolio
  - 4.2 Production planning
    - 4.2.1 Production plans in the company according to time horizon and its dynamics
    - 4.2.2 The planning system in ERPs
    - 4.2.3 KPIs for planning compliance
  - 4.3 The production plan
    - 4.3.1 Plans based on non-optimal methods
    - 4.3.2 Plans based on cost minimization: Bowman's method
- The master plan (MPS)

#### UNIT 5. PLANNING RESOURCE NEEDS

##### Contents

- 5.1 From MPS to MRP (Material Requirements Planning)
- 5.2 Dependent vs. independent demand
- 5.3 Concepts prior to MRP
  - 5.3.1 BOM (Bill of materials)
  - 5.3.2 Inventory control
- 5.4 MRP algorithm
- 5.5 MRP batching policies
- 5.6 Historical evolution of the MRP.
  - 5.6.1 Infinite Capacity MRP
  - 5.6.2 Finite Capacity MRP
- 5.7 The MRP in service companies

#### UNIT 6. INVENTORY MANAGEMENT WITH INDEPENDENT DEMAND

##### Contents

- 6.1 Introduction to inventory management systems
- 6.2 Classification, types of inventory control, ABC analysis and rotations
- 6.3 Types of costs and other parameters associated with inventories
- 6.4 Deterministic models. The EOQ model (Economic Order Quantity)
- 6.5 Non-deterministic models
  - 6.5.1 The reorder point model (System Q)
  - 6.5.2 The Periodic Replenishment Model (System P)

## 05 Teaching methodology

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Considering the student's profile, the teaching model is articulated around four types of methodologies:

- ME1.** Participatory Exhibition Class
- ME2.** Co-operative work
- ME3.** Autonomous work
- ME4.** Problem-based learning
- ME7.** Assessment

## 06 Educational Activities

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Considering the competencies of the subject and based on the proposed teaching methodologies, the following training activities are scheduled:

<b>Evaluation Activities</b>	<b>Hours</b>	<b>Classroom Teaching Tiem</b>
<b>AF1.</b> Contents presentation with student participation	24	100%
<b>AF2.</b> Problem solving, exercises and case studies with student participation.	24	100%
<b>AF4.</b> Study and preparation of teaching units	46	0%
<b>AF5.</b> Performance of exercises and case studies	25	0%
<b>AF6.</b> Problem solving	25	0%
<b>AF13.</b> Written/oral evaluations	6	100%



## 07 Assessment

Evaluation Items 0.6 · EV1 + 0.2 · EV2 + 0.2 · EV3	Specific assessed competencies	Weight
EV1. Final written exam of all subject matter	CEDPR01 - CG02 – CG03 CG04 -CG05 - CG06 - CG07  CEDPR03      CGPR01– CGPR02      CGPR03– CGPR04      CEDPR07 CEDPR09 - CEDPR10	40%
EV2. Control or midterm written test	CEDPR01 - CG02 – CG03 CG04 - - CG06 -	20%
EV3. Exercises, problems, reports development, assignments  - Exercises and problems	CEDPR01 - CG02 – CG03 CG04 - - CG06 -  CEDPR03      CGPR01– CGPR02–      CGPR04 CEDPR07 - CEDPR10 -	40%

"The maximum grade that students will be able to obtain in the revaluation tests [...] shall be 5,0. In addition, "the grade of the revaluation tests shall in any case constitute the final grade of the subject". Thus, **only students who, having completed the midterm exam, the final exam and having carried out 100% of the continuous evaluation activities of the subject**, and have suspended (final grade of the subject below 5) will be entitled to the revaluation examination.

## o8 Learning Resources

Topics	Resources	Type
Topic	Transparencies, notes and exercises	Class and Blackboard

## o9 Code of Academic Conduct

Plagiarism is a fraudulent activity whose commission can lead to serious sanctions, both academic and legal. Academic honesty is one of the pillars on which the educational commitment of the School is based, and the members of the teaching unit are specially sensitized and prepared to detect this type of actions. Given the difficulty that often involves the conceptualization of plagiarism, it has been considered convenient to clearly delineate its content and scope in these regulations and policies.

Plagiarism is understood as the appropriation of other people's works or works by making them happen as their own; that is, without proving its origin explicitly. Plagiarism may consist of the unauthorized total or partial copy of a third-party work, or the presentation of the copy as its own original work, supplanting the true author. Some examples of plagiarism are:

- Deliver a third-party job as if it were their own, regardless of whether the copy is total or partial.
- Paraphrase a text to translate it with other words but make small changes in the language to hide and without citing sources.
- Buy or get a job and present it as your own.
- To base on an idea or phrase from another to write a new work without citing the author of the work.

As provided for in art. 10 of the Student Code of Academic Conduct (EAE Barcelona or EAE Madrid), notwithstanding the academic sanctions resulting from its application, the Academic Committee shall promote the corresponding legal actions in the event that plagiarism could contravene the applicable regulations regarding intellectual property.

## 10 Bibliography

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### 10.1 Basic bibliography

- Shou Y, Kang M, Park Y. Supply chain integration for sustainable advantages. Springer Books. 2022.

### 10.2 Complementary bibliography

- Kerzner H. Project management case studies. John Wiley & Sons; 2022 Mar 1..
- Coghlan D, Shani AB, Coughlan P. Enhancing the quality of project management through action research. *International Journal of Managing Projects in Business*. 2022 Mar 17.
- Lockee, B. B. (2021). Shifting digital, shifting context:(re) considering teacher professional development for online and blended learning in the COVID-19 era. *Educational Technology Research and Development*, 69(1), 17-20.
- Shaukat MB, Latif KF, Sajjad A, Eweje G. Revisiting the relationship between sustainable project management and project success: The moderating role of stakeholder engagement and team building. *Sustainable Development*. 2022 Feb;30(1):58-75.