



Universitat de Lleida

# DEGREE CURRICULUM **ORGANIZATION OF PRODUCTION**

Coordination: BADIA CLAVERA, JAVIER

Academic year 2023-24

# ORGANIZATION OF PRODUCTION 2023-24

## Subject's general information

Subject name	ORGANIZATION OF PRODUCTION			
Code	102117			
Semester	1st Q(SEMESTER) CONTINUED EVALUATION			
Typology	Degree	Course	Character	Modality
	Bachelor's Degree in Automation and Industrial Electronic Engineering	3	COMPULSORY	Attendance-based
	Bachelor's Degree in Energy and Sustainability Engineering	3	COMPULSORY	Attendance-based
	Bachelor's Degree in Mechanical Engineering	3	COMPULSORY	Attendance-based
	Double bachelor's degree: Degree in Mechanical Engineering and Degree in Energy and Sustainability Engineering	3	COMPULSORY	Attendance-based
Course number of credits (ECTS)	6			
Type of activity, credits, and groups	Activity type	PRAULA		TEORIA
	Number of credits	3		3
	Number of groups	3		1
Coordination	BADIA CLAVERA, JAVIER			
Department	ECONOMICS AND BUSINESS			
Teaching load distribution between lectures and independent student work	60 hrs. presential and 90hrs independent work			
Important information on data processing	Consult <a href="#">this link</a> for more information.			
Language	Català			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
BADIA CLAVERA, JAVIER	javier.badia@udl.cat	12	

## Subject's extra information

This course requires continuous work throughout the semester to achieve the objectives.

Critical thinking and capacity for abstraction is required.

You can find educational materials in the Virtual Campus: <http://cv.udl.cat> - Schemes notes - Collection of statements of exercises - Articles and publications - Materials and additional resources necessary to properly develop learning.

We recommend visiting frequently Virtual Campus space associated with the subject, announcements of relevant information and the publication of notices.

Besides tutoring schedule established, you can always send an email to the teacher to request a specific tutoring.

One way to approach the study of this subject is:

- Follow the explanations made by the teacher and make notes settings.
- Perform the exercises at the end of each topic.
- Read regularly notes and materials of different issues that are regularly made available through the virtual campus.
- Consult the literature to expand or emphasize key concepts
- To relate the theoretical contents that have been learned from the experience of the real environment.

## Learning objectives

1. Understand the fundamentals of production organization: The first objective is to gain a deep understanding of the basic principles of production organization, including key concepts and methodologies used in this field.
2. Analyze and design production processes: The objective is to be able to analyze existing processes in an organization and design them efficiently, optimizing resources and reducing costs, as well as improving quality and productivity.
3. Apply methods and techniques of production planning: It is essential to be able to select and appropriately apply different production planning techniques, such as linear programming, simulation models, MRP (Materials Requirement Planning) systems, and other relevant tools.
4. Optimize the supply chain: The objective is to understand the importance of coordination and optimization of the supply chain, including supplier management, distribution logistics, and production control, to achieve maximum efficiency and superior customer service.

5. Implement quality control strategies: It is important to know different techniques and methods for quality control in the production process, such as statistical methods, process control, and total quality management (TQM), to ensure production of high-quality products and services.
6. Manage production optimization: The objective is to effectively manage and control production resources, such as plant capacity, inventory control, production planning, and scheduling, aiming for optimal results.
7. Analyze and improve productivity: The objective is to identify areas for productivity improvement and implement strategies to increase it. This may include the use of innovative technologies, workflow optimization, and the application of lean work methods.
8. Develop management and leadership skills: In addition to technical knowledge, it is important to develop management and leadership skills to lead efficient, motivated, and cohesive work teams. This includes effective communication, decision-making, problem-solving, and change management.

## Competences

### Specific competencies of the degree

- GEM15. Basic knowledge of production and manufacturing systems.
- GEM17. Applied knowledge of business organization.

### Transversal competencies of the degree

- EPS8. Capacity for personal work planning and organization.
- EPS10. Ability to integrate within the company's structure.
- EPS13. Ability to consider the socio-economic context as well as sustainability criteria in engineering solutions.

## Subject contents

### 1. Introduction to the organization of production and design of the product and process.

- 1.1. Company concept.
- 1.2. Company subsystems.
- 1.3. Business strategy.
- 1.4. Production.
- 1.5. Production organization.
- 1.6. Contributions to the organization of production.
- 1.7. Product design.
- 1.8. Selection and design of the production process.
- 1.9. Process analysis.

### 2. Plant location and distribution strategies.

- 2.1. The location of productive activity.
- 2.2. Distribution in plant.

### 3. Project management in operations.

- 3.1. Project management.

3.2. Project planning and control techniques.

## 4. Current approaches to operations management (OCD and Lean).

4.1. Lean Manufacturing.

4.2. Theory of limitations.

## 5. Production planning.

5.1. Introduction to operations management.

5.2. Production planning.

5.3. Aggregate planning.

5.4. Master production programming.

## 6. Inventory management and material requirements planning (MRP).

6.1. Inventory management.

6.2. Inventory management of items with independent demand.

6.3. Inventory management of items with dependent demand.

## 7. Quality management.

7.1. Quality and quality management.

7.2. Quality control.

## Methodology

- Master class: They will be held during large group sessions. Presentation of theoretical contents and proposal and / or resolution of some practical examples.
- Problems and case studies: They will be done during the middle group sessions. Approach and discussion of problems, which will be solved by the students individually or in groups.
- Practices: They will be carried out during the middle group sessions. Application of the contents worked in real problems of the industrial environment. The practices will have to expose to the rest of classmates.
- Company visit: It will take place during a large group session. Making a report on the visit.
- Reading and participation in the forum: In the event that it is not possible to visit the company, there will be a reading and subsequent discussion in the forum.
- Questionnaires: At the end of each block students will have to complete a questionnaire in order to consolidate the knowledge acquired.

## Development plan

Week	Methodology	Topic	Face-to-face hours	Self-employment hours
1	Master class	Topic 0	2	0
2	Master class Practice	Topic 1	2 2	5

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Week	Methodology	Topic	Face-to-face hours	Self-employment hours
3	Practice Master class	Topic 1 Topic 2	2 2	8
4	Problems	Topic 2	3	4
5	Master class Problems	Topic 3	2 2	5
6	Exhibitions Problems	Topic 1 Topic 3	2 2	5
7	Master class	Topic 4	4	5
8	Case studies	Topic 4	4	8
9	Evaluation	Test 1	2	6
10	Master class Problems	Topic 5	2 2	5
11	Master class Problems	Topic 5	2 2	5
12	Master class Problems	Topic 6	2 2	5
13	Master class Problems	Topic 6	1 2	5
14	Exhibitions Master class	Topic 4 Topic 7	2 2	5
15	Exposicions Master class	Topic 7	2 2	5
16 - 17	Evaluation	Test 2	2	6
18	Tutoring	Tutoring	2	4
19	Evaluation	Test	2	4
			60	90

## Evaluation

Activities	Criteria	%	Dates	O/V (1)	I/G (2)	Observations
EXAM BLOCK: PTP 1 (Test 1)	Topics 1 al 3	30%	Week 9	O	I	Minimum grade: 4 Can be recovered
EXAM BLOCK: PTP 2 (Tesy 2)	Topics 4 al 7	30%	Week 16/17	O	I	Minimum grade: 4 Can be recovered
PRACTICE BLOCK: Practice 1	Topic 1	10%	Week 6	O	G	It is mandatory to deliver this activity correctly in time and form. Cannot recover
PRACTICE BLOCK: Practice 2	Topic 4	10%	Week 14	O	G	It is mandatory to deliver this activity correctly in time and form. Cannot recover

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Activities	Criteria	%	Dates	O/V (1)	I/G (2)	Observations
BLOCK OTHER ACTIVITIES Questionnaires		10%	At the end of each unit	O	I	It is mandatory to deliver this activity correctly in time and form. Cannot recover
BLOCK OTHER ACTIVITIES Reading or business visit forum		10%	Week 15	O	I	It is mandatory to deliver this activity correctly in time and form. Cannot recover

(1) *Compulsory / Voluntary*

(2) *Individual / Group*

## Clarifications

The subject of **Production Organization** will be evaluated by **evaluation keep on**.

The continuous assessment consists of the students obtaining grades of 6 activities, coming from: 2 written tests, the deliveries and exhibition of two Practices, the realization of the Questionnaires of end of unit and the reading and back participation in the Forum .

**Therefore, to pass this subject, the continuous evaluation must be passed**, bearing in mind:

**a)** The realization of 2 written tests that will evaluate the content of the program. The first test will be of subjects 1, 2 and 3. The second test of topics 4, 5, 6 and 7 (variable depending on the rhythm)

Each written test will have a weight of 30% in the final grade and its minimum grade is 4.

**b)** The delivery and presentation of the proposed practices will be they will value and have a weight for each of 10% in the final grade.

**c)** The completion of the questionnaires of each unit will be valued and will have a total weight of 10% in the final note.

**d)** The reading and subsequent participation in a discussion forum will be valued and will have a total weight of 10% in the final note.

## Important notice

1. It is mandatory to present the proposed practical tests as mandatory in time and form. They need to be presented correctly, **there is no recovery**.
2. Both written tests have a day and time of completion that we will notify you in advance and therefore can not be performed on another day or another time. **There is a final exam to retake the parts of the theory and practice test (PTP), in the event that the grade is less than 4 in either or the final grade for continuous assessment is less than 5.00.**

## Other aspects to keep in mind when taking the written tests:

- In the written tests only the pen and the calculator (which is not programmable)
- can be brought. No mobile phones, notes or any material with the contents can be brought. of the program.
- Anyone copying through any system will get the suspension rating directly.

## Final of the subject

The final mark of this subject will be calculated by making the weighted average of the 6 marks of the six blocks of activities according to the established percentages (see the table in this section), **passing the subject with a mark. equal to or greater than 5 out of 10**. If the subject has been approved in recovery, the maximum grade will be a 5.

In the event that in any of the written tests the grade is lower than 4, the final grade will be the average grade but never exceeding 4.9.

Students who undergo **Alternative Assessment** can choose to only complete the Exam Block, with a score of 50% for each of them. These exams will be conducted according to the Exam Schedule.

## Bibliography

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