

Course guide 240358 - 240ST1133 - Operations Management II

Last modified: 16/05/2023

Academic year: 2023	ECTS Credits: 3.0	Languages: English	
Degree:	MASTER'S DEGREE IN INDUSTRIAL ENGINEERING (Syllabus 2014). (Optional subject). MASTER'S DEGREE IN SUPPLY CHAIN, TRANSPORT AND MOBILITY MANAGEMENT (Syllabus 2014). (Optional subject). MASTER'S DEGREE IN MANAGEMENT ENGINEERING (Syllabus 2021). (Optional subject).		
Unit in charge: Teaching unit:	Barcelona School of Industrial Engineering 732 - OE - Department of Management.		

LECTURER	
Coordinating lecturer:	MANUEL MATEO DOLL

Others:

Moliné Boixareu, Joan Ignasi Gras Basañez, Iñaki Mateo Doll, Manuel

TEACHING METHODOLOGY

The course will consist of the following training activities:

"Theory" sessions correspond to the magistral format. The rest of the time of the sessions corresponds to the participatory - directed format.

Practice sessions correspond to a laboratory format, where students apply computational instruments to understand the practical application of the procedures introduced in the theory classes.

This is complemented by theoretical-practical, individual work and a business game, all of them non-face-to-face.

Finally, assessment activities is considered (in theory sessions, practical sessions and final exam).

LEARNING OBJECTIVES OF THE SUBJECT

The main objective is to introduce a set of decisions related to the management of manufacturing and logistics systems and supply chain, focussed on the operations management, and provide some management tools.

At the end of the course, the student is expected to be able to:

* Identify the types of problems in management of the manufacturing and logistics systems and developing the appropriate procedures of resolution to provide feasible and reasonable solutions.

* Identify which decisions to take in the short-term and medium-term in the behaviour of industrial engineering (Operations Management) and the most common criteria.

 \ast Use the appropriate quantitative techniques to support the decision making.

 \ast Develop the ability of reasoning in real situations of management.

* Manage several kinds of manufacturing and logistics systems (goods or services, product-focused or process-focused ...).

STUDY LOAD

Туре	Hours	Percentage
Self study	48,0	64.00
Hours large group	13,5	18.00
Hours small group	13,5	18.00



Total learning time: 75 h

CONTENTS

TOPIC 1. Introduction

Description:

Definition of production, manufacturing and logistic system, supply chain management. Production and business. Subsystems in the business. Management decisions: design decisions and operations management decisions.

Specific objectives:

Identify the managerial characteristics for different organizations and in particular for manufacturing and logistics systems. Place each of the decisions for productive and logistic systems in the general decision-making scheme.

Related activities:

Theoretical lecture. Exercise.

Full-or-part-time: 10h Theory classes: 1h Practical classes: 2h Self study : 7h

TOPIC 2. Inventory management

Description:

Review of models of deterministic demand, both homogeneous and inhomogeneous. Random demand. Introduction. Safety stock, stockout cost and service quality. Inventory management: fixed order quantity model and fixed time period model. Management of multiple products in a single order. Management at multiple levels of the supply chain. Distribution Requirements Planning (DRP).

Specific objectives:

Understand the information given in a situation of random inventory management.

Determine the values of the variables used in the considered management model: order point (fixed order quantity) or periodic supply (fixed time period).

Manage the inventory policies according to the given indicators of service quality.

Related activities: Theoretical lecture. Short-duration activity. Exercises.

Full-or-part-time: 32h Theory classes: 6h Practical classes: 6h Self study : 20h



TOPIC 3. Operations scheduling

Description:

Assignment, sequencing, timing. Classification of problems. Notation. Parallel machines. Job-shop problem. The dispatching method.

Specific objectives:

Determine the type of flow in a given production system. Determine a schedule for manufactuing operations, using the appropriate procedure.

Related activities:

Theoretical lecture. Short-duration activity. Exercises.

Full-or-part-time: 26h

Theory classes: 5h Practical classes: 4h Self study : 17h

TOPIC 4. Global management

Description:

KPIs. Lean Management and TOC. Evolution: continuous improvement and reengineering.

Specific objectives:

Identify areas of improvement in methods of work. Acquire a vocabulary of concepts used in management.

Related activities:

Theoretical lecture. Short-duration activity. Exam on the practical exercises.

Full-or-part-time: 7h Theory classes: 1h 30m Practical classes: 1h 30m Self study : 4h

GRADING SYSTEM

The evaluation is carried out through several procedures:

(1) a final exam (EF) which lasts a maximum of 2 hours, consisting of several theoretical and practical exercises in which the student must demonstrate the ability to apply learned knowledge and develop specific procedures of resolution;

(2) evaluation during practical sessions (EP), in which the student must demonstrate his/her progressive learning during practical sessions;

(3) some activities of continuous assessment (AC), individual or in group, in theory;

(4) a business game (BG) in which the student must apply concepts in the simulation of a real case and learn the group work.

The final grade for the course Nfinal will be obtained Nfinal = $0.5 \cdot AC + 0.3 EP + 0.2 \cdot MAX\{BG; EF\}$



EXAMINATION RULES.

The final exam (EF) are open books. Electronic devices are not allowed, except pocket calculator (mobile phone or any other devices are not allowed).

The evaluation during practical sessions (EP) will be held answering the requested questions, during each session.

The business game BG and the activities of continuous evaluation in theory AC will be made following the specific rules published on campus.

BIBLIOGRAPHY

Basic:

- Jacobs, F. R.; Chase, R. B. Operations and supply chain management. 16th ed. New York: McGraw Hill, 2021. ISBN 9781260575941.

Waller, Derek L. Operations management : a supply chain approach. 2a ed. London [etc.]: Thomson, cop. 2003. ISBN 1861528035.
Vollmann, Thomas E. Manufacturing planning and control for supply chain management. 5th ed. New York [etc.]: McGraw-Hill-Irwin, cop. 2005. ISBN 0072299908.

RESOURCES

Audiovisual material:

- Nom recurs. Slides. Practice descriptions