

DOI-IND-525 Production and Manufacturing Systems

SEMESTER: Fall

CREDITS: 6 ECTS (4 hrs. per week: 3 Theory + 1 Lab, on average)

LANGUAGE: Spanish

DEGREES: MII (Official Master's Degree in Industrial Engineering)

Course overview

This course is a general introduction to Production and Manufacturing Systems: Strategic and Tactical decisions, Manufacturing Process, Layout Design, Supply Chain, Work Design Quality Management and Lean Manufacturing Techniques. There are practical sessions on Manufacturing processes and Supply chain performance.

Prerequisites

No prerequisites.

Course contents

Theory:

1. Operations Management. Decisions. Planning. Objectives and current trends.
2. Manufacturing Process. Selection. Capacity. Analysis and Design Tools. Reengineering.
3. Automatic Manufacturing Technologies. Flexible Manufacturing Systems, Transportation and Handling Equipment.
4. Supply Chain. Concepts and Design. Materials Requirement Planning.
5. Layout. Layout Classification. Assembly Line Balancing.
6. Quality Management. Quality Control. Acceptance Sampling.
7. Work Design. Human Resources Planning. Work Design Components. Measurement Time Method
8. Lean Manufacturing. Concepts and tools.

Laboratory:

There are several practical sessions simulating manufacturing processes and supply chain performances.

Textbook

- Heizer, J, Render. B., Dirección de la Producción. Ed. Prentice Hall

Grading

The following conditions must be accomplished to pass the course:

- A minimum exam grade of at least 4 over 10.
- A minimum overall grade of at least 5 over 10.

The exam grade is obtained as follows:

- Mid Term Exam weight: 2/7
- Final Exam weight: 5/7

The overall grade is obtained as follows:

- Mid Term exam: 20%
- Final exam: 50%.
- Lab grades: 20%.
- Attendance and performance: 10%.

Lack of attendance more than 15% may lead the student to lose the regular take

Retake

The following conditions must be accomplished to pass the course:

- A minimum exam grade of at least 4 over 10.
- A minimum overall grade of at least 5 over 10.

The exam grade is the Final Exam grade

The overall grade is obtained as follows:

- Final exam: 70%.
- Lab grades: 20%.
- Attendance and performance: 10%.