

## Course guide

### 220607 - 220607 - Integrated Production Systems

Last modified: 02/04/2024

**Unit in charge:** Terrassa School of Industrial, Aerospace and Audiovisual Engineering  
**Teaching unit:** 707 - ESAII - Department of Automatic Control.

**Degree:** MASTER'S DEGREE IN AUTOMATIC SYSTEMS AND INDUSTRIAL ELECTRONICS (Syllabus 2012). (Optional subject).

**Academic year:** 2024    **ECTS Credits:** 5.0    **Languages:** Catalan

#### LECTURER

**Coordinating lecturer:** Morcego Seix, Bernardo

**Others:** Figueras Jove, Jaume  
Pascual Alsina, Jan

#### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

##### Specific:

CIA03. Research, analysis, design, implementation and evaluation of the proper performance of highly automated production lines: from the decision taking till the manufacturing plant.

CIA10. Research, analysis, design and evaluation of telecommunications architecture, designing the collaboration strategy to optimize the surrounding industrial process.

CIA04. Research, analysis, design and implementation of ISA88, ISA 95 or ISA97 standards in automated production systems to manage all the data associated to the global management of the manufacturing plant.

##### Transversal:

CT3. TEAMWORK: Being able to work in an interdisciplinary team, whether as a member or as a leader, with the aim of contributing to projects pragmatically and responsibly and making commitments in view of the resources that are available.

CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

#### TEACHING METHODOLOGY

Check the Catalan or Spanish version

#### LEARNING OBJECTIVES OF THE SUBJECT

Check the Catalan or Spanish version

#### STUDY LOAD

| Type              | Hours | Percentage |
|-------------------|-------|------------|
| Self study        | 80,0  | 64.00      |
| Hours large group | 31,0  | 24.80      |
| Hours small group | 14,0  | 11.20      |

**Total learning time:** 125 h



## CONTENTS

### Module 1: Introduction to integrated production systems

**Description:**

Check the Catalan or Spanish version

**Specific objectives:**

Check the Catalan or Spanish version

**Related activities:**

1, 2, 4

**Full-or-part-time:** 9h 20m

Theory classes: 4h 40m

Self study : 4h 40m

### Module 2: The programmable logic controller

**Description:**

Check the Catalan or Spanish version

**Specific objectives:**

Check the Catalan or Spanish version

**Related activities:**

1, 2, 3, 4

**Full-or-part-time:** 23h 20m

Theory classes: 4h 40m

Laboratory classes: 2h

Self study : 16h 40m

### Module 3: Industrial communications

**Description:**

Check the Catalan or Spanish version

**Specific objectives:**

Check the Catalan or Spanish version

**Related activities:**

1, 2, 3, 4

**Full-or-part-time:** 25h 40m

Theory classes: 5h

Laboratory classes: 4h

Self study : 16h 40m



#### Module 4: Supervisory and control systems (SCADA)

**Description:**

Check the Catalan or Spanish version

**Specific objectives:**

Check the Catalan or Spanish version

**Related activities:**

1, 2, 3, 4

**Full-or-part-time:** 31h 20m

Theory classes: 8h

Laboratory classes: 4h

Self study : 19h 20m

#### Module 5: Production management

**Description:**

Check the Catalan or Spanish version

**Specific objectives:**

Check the Catalan or Spanish version

**Related activities:**

1, 2, 3, 4

**Full-or-part-time:** 26h 20m

Theory classes: 5h 40m

Laboratory classes: 4h

Self study : 16h 40m

#### Industry 4.0

**Description:**

Check the Catalan or Spanish version

**Specific objectives:**

Check the Catalan or Spanish version

**Related activities:**

2, 4

**Full-or-part-time:** 9h

Theory classes: 3h

Self study : 6h

## GRADING SYSTEM

Check the Catalan or Spanish version



## BIBLIOGRAPHY

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### Basic:

- Sipper, D.; Bulfin, R. L. Planeación y control de la producción [on line]. México: McGraw-Hill, 1998 [Consultation: 20/09/2022]. Available on : <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?pq-origsite=primo&docID=3194706>. ISBN 970101944X.
- Krajewski, L.J.; Ritzman, L.P. Administración de operaciones. México: Prentice Hall, 2000. ISBN 9684444117.
- Hannam, Roger G.. Computer integrated manufacturing: from concepts to realisation. 1997. Harlow: Addison-Wesley, 1997. ISBN 0201175460.