

## Course guides

# 820142 - ACIE - Industrial Automation and Communications

Last modified: 04/06/2021

**Unit in charge:** Barcelona East School of Engineering  
**Teaching unit:** 709 - DEE - Department of Electrical Engineering.

**Degree:** BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Optional subject).

**Academic year:** 2021    **ECTS Credits:** 6.0    **Languages:** Catalan

### LECTURER

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**Coordinating lecturer:** Romero Perez, Daniel

**Others:** MIGUEL ANGEL SAIGI GRAU

### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

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**Specific:**

1. Understand the basics of production and manufacturing systems.
2. Understand machine control and electric drives and their applications.
3. Understand the fundamentals of automatic control methods.
4. Understand automatic regulation and control techniques and their application to industrial automation.

**Transversal:**

6. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.
9. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.
10. ENTREPRENEURSHIP AND INNOVATION - Level 3. Using knowledge and strategic skills to set up and manage projects. Applying systemic solutions to complex problems. Devising and managing innovation in organizations.
13. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.

### TEACHING METHODOLOGY

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### LEARNING OBJECTIVES OF THE SUBJECT

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### STUDY LOAD

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| Type              | Hours | Percentage |
|-------------------|-------|------------|
| Hours large group | 45,0  | 30.00      |
| Hours small group | 15,0  | 10.00      |
| Self study        | 90,0  | 60.00      |

**Total learning time:** 150 h



## CONTENTS

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(ENG) Introducció a l'automatització industrial

(ENG) Filosofia i aplicació de l'automat programable

(ENG) Introducció a la programació d'automats

(ENG) Introducció al GRAFCET

(ENG) Pantalles d'operador. Programes SCADA. Xarxes d'automats

## GRADING SYSTEM

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## BIBLIOGRAPHY

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### Basic:

- Bouteille, D. [et al.]. Los automatismos programables. Rueil-Malmaison: CITEF, 1991. ISBN 2907314149.
- Bouteille, N. [et al.]. Le GRAFCET. Toulouse: Cépaduès, 1992. ISBN 271350631X.
- Boix i Aragonès, O., Saigí i Grau, M., Zabaleta i Alañà, F. Automatismes elèctrics programables. Barcelona: Edicions UPC, 1993. ISBN 8476533055.
- Piedrafita Moreno, R. Ingeniería de la automatización industrial. 2ª ed. Paracuellos de Jarama: Ra-Ma, 2004. ISBN 8478976043.