



Course guides

330068 - CIA - Industrial Control and Automation

Last modified: 12/05/2020

Unit in charge: Manresa School of Engineering
Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering.

Degree: BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Compulsory subject).
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Compulsory subject).
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Compulsory subject).
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Compulsory subject).
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2016). (Compulsory subject).
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2016). (Compulsory subject).
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2016). (Compulsory subject).

Academic year: 2020 **ECTS Credits:** 6.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: XAVIER GAMISANS NOGUERA

Others: SERGI GRAU TORRENT - TERESA ESCOBET CANAL

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

1. (ENG) Coneixements sobre els fonaments d'automatismes i tècniques de control.

Transversal:

3. TEAMWORK - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.

5. SELF-DIRECTED LEARNING - Level 2: Completing set tasks based on the guidelines set by lecturers. Devoting the time needed to complete each task, including personal contributions and expanding on the recommended information sources.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

ENG

STUDY LOAD

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

(ENG) 1. INTRODUCCIÓ AL CONTROL I AUTOMATITZACIÓ INDUSTRIAL

Description:

ENG

Full-or-part-time: 9h

Theory classes: 3h

Self study : 6h

(ENG) 2. AUTOMATITZACIÓ INDUSTRIAL

Description:

ENG

Full-or-part-time: 51h

Theory classes: 14h

Laboratory classes: 10h

Self study : 27h

(ENG) 3. MODELAT I ANÀLISI DE SISTEMES DINÀMICS

Description:

ENG

Full-or-part-time: 44h

Theory classes: 14h

Laboratory classes: 2h

Self study : 28h

(ENG) 4. CONTROL AUTOMÀTIC

Description:

ENG

Full-or-part-time: 44h

Theory classes: 14h

Laboratory classes: 2h

Self study : 28h

ACTIVITIES

(ENG) 1. PRÀCTIQUES D'AUTOMATITZACIÓ

Full-or-part-time: 30h

Laboratory classes: 10h

Self study: 20h



(ENG) 2. PRÀCTIQUES DE SISTEMES CONTINUS

Full-or-part-time: 12h
Laboratory classes: 4h
Self study: 8h

(ENG) 3. PROVES ESCRITES

Full-or-part-time: 17h
Theory classes: 4h
Self study: 13h

(ENG) EXERCICIS D'APRENTATGE

Full-or-part-time: 20h
Self study: 20h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:

- Apunts realitzats per els professors de l'assignatura.
- Nise, Norman S. Control systems engineering. 6th ed. Hoboken: John Wiley & Sons, 2011. ISBN 9780470646120.
- Ogata, K. Ingeniería de control moderna [on line]. 5ª ed. Madrid: Pearson Educación, 2010 [Consultation: 30/07/2020]. Available on: http://www.ingebook.com/ib/NPcd/IB_BooksVis?cod_primaria=1000187&codigo_libro=1259. ISBN 9788483226605.
- Piedrafita Moreno, R. Ingeniería de la automatización industrial. 2ª ed. Madrid: Ra-Ma, 2004. ISBN 8478976043.
- Medina García, J. L.; Guadayol, J. M. La automatización en la industria química [on line]. Barcelona: Edicions UPC, 2010 [Consultation: 08/03/2018]. Available on: <http://hdl.handle.net/2099.3/36842>. ISBN 9788498803983.
- Boix Aragonès, Oriol; Sudrià Andreu, Antoni; Bergas Jané, Joan. Automatització industrial amb GRAFCET [on line]. Barcelona: Edicions UPC, 1998 [Consultation: 08/03/2018]. Available on: <http://hdl.handle.net/2099.3/36537>. ISBN 8483014998.