

## 820252 - CAEIA - Advanced Control

Coordinating unit:	295 - EEBE - Barcelona East School of Engineering		
Teaching unit:	707 - ESAIL - Department of Automatic Control		
Academic year:	2019		
Degree:	BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN ENERGY ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN ENERGY ENGINEERING (Syllabus 2009). (Teaching unit Optional)		
ECTS credits:	6	Teaching languages:	Spanish

### Teaching staff

Coordinator:	RAUL BENITEZ IGLESIAS
Others:	JOSÉ MARÍA HUERTA SÁNCHEZ - RAUL BENITEZ IGLESIAS

### Degree competences to which the subject contributes

#### Transversal:

1. 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.

### Teaching methodology

L'assignatura utilitza una metodologia expositiva de conceptes teòrics en un 20%, el treball individual presencial (problemas i laboratori) en un 20%, treball individual en un 20%, treball en grups (cooperatiu o no) en un 30% i l'aprenentatge basat en projectes en un 10%.

### Learning objectives of the subject

- Complementar los conocimientos sobre control automático adquiridos en las asignaturas Señales y Dinámica de Sistemas y Técnicas de Control.
- Introducir al alumno en técnicas de control en el espacio de estado.
- Introducción a los métodos de análisis y diseño de sistemas de control no-lineal.
- Conocer las técnicas de control de sistemas multivariables.

### Study load

Total learning time: 150h	Hours large group:	45h	30.00%
	Hours medium group:	0h	0.00%
	Hours small group:	15h	10.00%
	Self study:	90h	60.00%

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### Content

(ENG) -Introducción a las técnicas avanzadas de control

Degree competences to which the content contributes:

(ENG) -Diseño de sistemas de control en el espacio de estados

Degree competences to which the content contributes:

(ENG) -Introducción y análisis de sistemas no-lineales

Degree competences to which the content contributes:

(ENG) -Control adaptativo

Degree competences to which the content contributes:

(ENG) -Introducción a los sistemas multivariables

Degree competences to which the content contributes:

### Qualification system

Controls parcials: 20%  
Exercicis/problemes: 20%  
Últim control: 20%  
No presencial: 20%  
Pràctiques: 20%

### Regulations for carrying out activities

L'avaluació es realitzarà mitjançant la valoració objectiva dels exàmens, la realització d'informes de pràctiques de laboratori i els exercicis entregats al llarg del curs.

### Bibliography

Basic:

Ogata, Katsuhiko. Sistemas de control en tiempo discreto. 2ª ed. México [etc.]: Prentice Hall Hispanoamericana, cop. 1996. ISBN 9688805394.