

## 230107 - EA - Automobile Electronics

Coordinating unit:	230 - ETSETB - Barcelona School of Telecommunications Engineering		
Teaching unit:	739 - TSC - Department of Signal Theory and Communications 710 - EEL - Department of Electronic Engineering		
Academic year:	2019		
Degree:	BACHELOR'S DEGREE IN TELECOMMUNICATIONS SCIENCE AND TECHNOLOGY (Syllabus 2010). (Teaching unit Optional) BACHELOR'S DEGREE IN ELECTRONIC SYSTEMS ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN AUDIOVISUAL SYSTEMS ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN TELECOMMUNICATIONS TECHNOLOGIES AND SERVICES ENGINEERING (Syllabus 2015). (Teaching unit Optional)		
ECTS credits:	6	Teaching languages:	Catalan, Spanish

### Teaching staff

Coordinator:	Silva Martinez, Fernando
Others:	Silva Martinez, Fernando Ramos Castro, Juan Jose

### Prior skills

Electronic components, circuits and systems. Electronic Instrumentation.

### Learning objectives of the subject

Analyze the electronic systems that incorporate current cars, study their particular requirements and meet new applications currently being developed for future cars.

The course is developed with the advice of several companies in the automotive industry, who taught some theoretical contents.

### Study load

Total learning time: 150h	Hours large group:	26h	17.33%
	Hours small group:	26h	17.33%
	Self study:	98h	65.33%

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### Content

Introduction	Learning time: 12h Theory classes: 12h
Description: Introduction to the automotive electronics including the bus CAN	
Automotive project	Learning time: 28h Theory classes: 28h
Description: Definition, development and presentation of an automotive electronics hardware and software project	
Electronic automotive systems	Learning time: 12h Theory classes: 12h
Description: Automotive electronic development management Automotive Electromagnetic Compatibility Hybrid and electrical vehicles Fleet management ADAS systems Drive by Wire	

### Qualification system

Lessons 3 credits

- Work (content and presentation): 20%
- Final exam (test): 30%

Project 3 credits

- Laboratory work: 30%
- Final exam (issue): 20%

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### Bibliography

#### Basic:

Ribbens, W.B. Understanding automotive electronics. 6th ed. Amsterdam [etc.]: Newnes, 2003. ISBN 0750675993.

Mizutani, S. Car electronics. 2nd ed. Nippondenso; Sankaido, 1992. ISBN 4381100433.

#### Complementary:

Denton, T. Automobile electrical and electronic systems. 5th ed. Milton Park, Abingdon, Oxon: Routledge, 2017. ISBN 9780415725774.

#### Others resources:

Internet information