

## 330512 - AMS - Automotive, Mobility and Sustainability

Coordinating unit: 330 - EPSEM - Manresa School of Engineering  
Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering  
Academic year: 2019  
Degree: BACHELOR'S DEGREE IN AUTOMOTIVE ENGINEERING (Syllabus 2017). (Teaching unit Compulsory)  
ECTS credits: 3 Teaching languages: English

### Teaching staff

Coordinator: Albiol Rodríguez, Jordi  
Others: Felipe Blanch, Jose Juan De

### Degree competences to which the subject contributes

#### Basic:

- CB1. The students have demonstrated to possess and to understand knowledge in an area of study that starts from the base of the general secondary education, and is usually found to a level that, although it relies on advanced textbooks, also includes some aspects that involve knowledge from the vanguard of their field of study.  
CB2. Students can apply their knowledge to their work or vocation in a professional way and possess the skills that are usually demonstrated through the elaboration and defense of arguments and problem solving within their area of study.

#### Specific:

- CE6. Adequate knowledge of the concept of company, institutional and legal framework of the company. Organization and management of companies.  
CE14. Knowledge and skills to organize and manage projects. Knowledge of the organizational structure and functions of the automotive industry.

#### Generical:

- CG3. Knowledge in basic and technological subjects that will enable them to learn new methods and theories and give them the versatility to adapt to new situations.  
CG7. Ability to analyze and assess the social and environmental impact of technical solutions.  
CG10. Ability to work in a multilingual and multidisciplinary environment.

#### Transversal:

1. ENTREPRENEURSHIP AND INNOVATION - Level 1. Showing enterprise, acquiring basic knowledge about organizations and becoming familiar with the tools and techniques for generating ideas and managing organizations that make it possible to solve known problems and create opportunities.
2. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 1. Analyzing the world's situation critically and systemically, while taking an interdisciplinary approach to sustainability and adhering to the principles of sustainable human development. Recognizing the social and environmental implications of a particular professional activity.
3. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 1. Planning oral communication, answering questions properly and writing straightforward texts that are spelt correctly and are grammatically coherent.
4. TEAMWORK - Level 1. Working in a team and making positive contributions once the aims and group and individual responsibilities have been defined. Reaching joint decisions on the strategy to be followed.
5. EFFECTIVE USE OF INFORMATION RESOURCES - Level 1. Identifying information needs. Using collections, premises and services that are available for designing and executing simple searches that are suited to the topic.
6. SELF-DIRECTED LEARNING - Level 1. Completing set tasks within established deadlines. Working with recommended information sources according to the guidelines set by lecturers.
7. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.

## 330512 - AMS - Automotive, Mobility and Sustainability

### Teaching methodology

- MD1 Master class or lecture (EXP)
- MD2 Problem solving and case study (RP)
- MD6 Large-scale project or assignment (PA)

### Learning objectives of the subject

The subject aims to provide basic knowledge about road mobility and the development of a product aimed at customer satisfaction and minimising the social and environmental impact.

The learning objectives include the following:

- Knowing and understanding the fundamentals of road transport.
- Knowing and understanding the concept of sustainability and sustainable design.
- Knowing and understanding examples of sustainable design practices.
- Knowing, understanding and applying the process of design and development of a product for launching on the market.

### Study load

Total learning time: 75h	Hours large group:	30h	40.00%
	Hours medium group:	0h	0.00%
	Hours small group:	0h	0.00%
	Guided activities:	0h	0.00%
	Self study:	45h	60.00%

## 330512 - AMS - Automotive, Mobility and Sustainability

### Content

<p>Topic 1: Road transport</p>	<p>Learning time: 25h Theory classes: 10h Self study : 15h</p>
<p>Description: The concept of mobility. Road transport. Types and characteristics. Applicable legislation.</p> <p>Related activities: Specific work on content (Activity 1).</p> <p>Specific objectives: Knowledge of road transport. Understanding of the sector. Knowledge of basic European and national legislation.</p>	
<p>Topic 2: Sustainability</p>	<p>Learning time: 25h Theory classes: 10h Self study : 15h</p>
<p>Description: The concept of sustainability. The principles of sustainable development. The main social and environmental impacts of the car. Sustainable design practices.</p> <p>Related activities: Specific work on content (Activity 2).</p> <p>Specific objectives: Understanding, analysis and application of the concept of sustainability in the automotive sector.</p>	
<p>Topic 3: Product Design and Development</p>	<p>Learning time: 25h Theory classes: 10h Self study : 15h</p>
<p>Description: Market research. Identification of the target. Client expectations. Objectives of the product. Product design and development. Collaborative design. The product layout feature (PLF).</p> <p>Related activities: Specific work on content (Activity 3).</p> <p>Specific objectives: Knowledge and understanding of the processes of design and development of a product.</p>	

## 330512 - AMS - Automotive, Mobility and Sustainability

### Planning of activities

<b>Activity 1: Road transport</b>	Hours: 16h Theory classes: 1h Self study: 15h
<p><b>Description:</b>            An assignment on road transport chosen from those proposed by the professor. The assignment must be presented in public.</p> <p><b>Support materials:</b>            On the Atenea virtual campus</p> <p><b>Descriptions of the assignments due and their relation to the assessment:</b>            20% of the mark</p> <p><b>Specific objectives:</b>            Development of techniques and reasoning strategies for analysis.            Written and oral communication.            Teamwork.            A third language.            Competent use of information resources.            Social commitment and sustainability.            Innovation.</p>	
<b>Activity 2: Sustainability</b>	Hours: 16h Theory classes: 1h Self study: 15h
<p><b>Description:</b>            An assignment on road transport sustainability chosen from those proposed by the professor. The assignment must be presented in public.</p> <p><b>Support materials:</b>            On the Atenea virtual campus</p> <p><b>Descriptions of the assignments due and their relation to the assessment:</b>            35% of the mark</p> <p><b>Specific objectives:</b>            Development of techniques and reasoning strategies for the analysis.            Written and oral communication.            Teamwork.            A third language.            Competent use of information resources.            Social commitment and sustainability.            Innovation.</p>	
<b>Activity 3: Product design and development</b>	Hours: 16h Theory classes: 1h Self study: 15h

## 330512 - AMS - Automotive, Mobility and Sustainability

### Description:

An assignment on the processes of design and development of a product chosen from those proposed by the professor. The assignment must be presented in public.

### Support materials:

On the Atenea virtual campus

### Descriptions of the assignments due and their relation to the assessment:

35% of the mark

### Specific objectives:

Development of techniques and reasoning strategies for analysis.

Written and oral communication.

Teamwork.

A third language.

Competent use of information resources.

Social commitment and sustainability.

Innovation.

## Qualification system

Activity 1: 20% of the mark

Activity 2: 35% of the mark

Activity 3: 35% of the mark

Class attendance and participation: 10% of the mark

## Regulations for carrying out activities

Students must attend 70% of the classes to pass the subject.

## Bibliography

### Basic:

Cuervo Mongui, Oscar Andrés. Diseño sostenible: una propuesta metodológica como eje de desarrollo. Saarbrücken: Editorial Académica Española, 2013. ISBN 9783659080586.

Aguayo González, Francisco, i altres. Ecodiseño: ingeniería sostenible de la cuna a la cuna (2C2). San Fernando de Henares: RC Libros, 2011. ISBN 9788493831264.

Anfac. Anfac. Asociación Española de Fabricantes de Automóviles y Camiones: portal de transparencia [on line]. 2012 [Consultation: 16/07/2018]. Available on: <<http://www.anfac.com/portada.action>>.

Sernauto. Sernauto. Asociación Española de Proveedores de Automoción [on line]. 2018 [Consultation: 16/07/2018]. Available on: <<http://www.sernauto.es/>>.

### Others resources: