60826 - Safe and sustainable mobility

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	532 - Master's in Industrial Engineering
ECTS	6.0
Course	2
Period	Second semester
Subject Type	Optional
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The learning process that is designed for this subject is based on the following:

At the level of the entire group, the methodology proposed aims to encourage the continued work of the student and focuses on the most practical and understanding of the behavior of the vehicle and driving environments shared circulation aspects, reinforcing aspects of the calculation and optimization of safe and sustainable vehicles.
In sessions with the whole group theoretical and descriptive aspects of the systems studied in the form of master class

are treated and design criteria, procedures and sample calculation for the different systems covered in the course resolved cases are also explained.

In the practical classes, existing real situations are discussed today, in which the use of the vehicle in familiar environments, allows a certain casuistry with which to analyze the vehicle and the type of driving, so that it can be optimized, both the designs of the component systems of the vehicle, the vehicle as a whole in itself, and how to use them, through the management of numerical and experimental techniques. actual design variables are handled.
The evaluation focuses on the theoretical and practical aspects of analysis and assessment of the factors involved in establishing a safe and sustainable mobility. Also, procedures to determine the assessment criteria that define a safe and sustainable vehicle and use. The criteria used in the evaluation process are explained in this guide.

5.2.Learning activities

The program that the student is offered to help achieve the expected results includes the following activities:

The course is organized with 45 hours of class during the 15 weeks of the semester. They are taught the whole group analysis of the problems of accidents with vehicles, the description of services and specific characteristics of safe and sustainable vehicles, the organization of efficient use of vehicles in urban and interurban environments, procedures are explained design, calculation and test procedures and case studies are conducted. Other 15 hours are given to small groups in computer or experimental laboratory to develop skills in solving real problems and interpretation of results. Detailed information regarding the conduct of laboratory practices appear on the web or in the center of the subject.

More specifically:

Activity

No. hours, % attendance

A 01 Lecture (presentation of content by teachers, external experts or by the students themselves, for all students of the subject). Troubleshooting and cases (practical exercises with all students of the subject)
45, 100

A 02 Special activities (visits to company facilities of interest, etc. Whenever there is availability)

60826 - Safe and sustainable mobility

5, 100

A 03 Lab work (practical exercises in small groups of students of the subject)
15, 100

A 04 Carrying out research or practical application .
30, 0

A 05 study and personal work
50, 0

A 06 Evaluation tests
5, 100
the following learning modules are proposed:

Module 1: Safe Mobility
Module 2: Sustainable Mobility

5.3.Program

The course comprises two thematic blocks which are:
Safe Mobility block; familiarize students with issues related to the safe mobility are:
1. The accident in the context of sustainable mobility
2. Determination of the causes of traffic accidents in urban and interurban environments
3. Impact on the accident of the introduction of new sustainable transport modes
4. Preventive Plans traffic accidents

Sustainable Mobility block; familiarize students with issues related to sustainable mobility which are:
1. Transport systems, intelligent, efficient and sustainable.
2. Technology of clean vehicles.
3. Performances and dimensioning of electric vehicles.
4. Efficient Mobility in urban and suburban environments.

60826 - Safe and sustainable mobility

5.4.Planning and scheduling

Schedule sessions and presentation of works

Lectures, problem sessions and lab sessions are given in the corresponding class and laboratory according to schedule set by the center (schedules available on their website).
Other related activities will be organized depending on the number of students and will be announced in advance time. It will be available on http://add.unizar.

5.5.Bibliography and recomended resources

[1]

Accidentes de tráfico: Manual básico de investigación y reconstrucción

Autores Juan José Alba López, Jesús Monclús González, Alberto Iglesia Pulla

Editor Pons, 2006

ISBN 8495044609, 9788495044600

N.º de páginas 138 páginas

[2]

Automóviles eléctricos

Autor Emilio Larrodé Pellicer

Editor Editorial Reverte, 1997

ISBN 8414360092, 9788414360095

N.º de páginas 475 páginas