

## 66430 - Advanced design of home appliances

### Información del Plan Docente

<b>Academic Year</b>	2016/17
<b>Academic center</b>	110 - Escuela de Ingeniería y Arquitectura
<b>Degree</b>	536 - Master's in Mechanical Engineering
<b>ECTS</b>	4.5
<b>Course</b>	1
<b>Period</b>	Second semester
<b>Subject Type</b>	Optional
<b>Module</b>	---

### **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**

Learning process will be developed by means of master classes, study cases, practical sessions and mentored working.

- During master classes theoretical basis of the subject will be exposed some standard problems will be solved.

- Study cases are an efficient complement to master classes.

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- During practical sessions, different engineering CAE tools are used to encourage a practical learning.
- Mentored working is a global mean of learning by applying all the knowledge acquired with the previous methodologies.

### 5.2.Learning activities

- 1: Master classes (33 h) Theoretical basis will be exposed and different problems and study cases will be discussed.
- 2: Practical sessions (12 h) to complement the learning of the master classes.
- 3: Mentored works (9 h non-face). Different activities will be proposed and mentored by the teacher. Group working.
- 4: Individual study (27.5 h non face). Individual study in a continuous way during the semester is recommended.
- 5: Evaluation (2.5 h)

### 5.3.Program

#### *Thermal module*

1. Energy Label
2. Thermal simulation
3. Design process, thermal requirements
4. Selection of materials

#### *Mechanical module*

- 1.- Material families of materials and applications for home appliances.
- 2.- Mechanical behavior of plastics: creep, fatigue, temperature dependence.
- 3.- Influence of molding and machine on plastic components design.
- 4.- Tools and methodologies for structural analysis.

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5.- Structural design of fridges, washing machines and hobs.

6.- Equipment for noise and vibration measurement.

7.- Modal tests

8.- EOperational tests.

### 5.4.Planning and scheduling

The scheduling for the subject can be found in the EINA website.

Any change will be communicated to the students by the teacher.

### 5.5.Bibliography and recomended resources

Bibliography can be consulted at Library website.