220043 - Sostenibilidad en el Entorno Construido

**Unidad responsable:** 205 - ESEIAAT - Escuela Superior de Ingenierías Industrial, Aeroespacial y Audiovisual de Terrassa

**Unidad que imparte:** 758 - EPC - Departamento de Ingeniería de Proyectos y de la Construcción

**Curso:** 2019

**Titulación:**
- GRADO EN INGENIERÍA MECÁNICA (Plan 2009). (Unidad docente Optativa)
- GRADO EN INGENIERÍA EN VEHÍCULOS AEROESPACIALES (Plan 2010). (Unidad docente Optativa)
- GRADO EN INGENIERÍA EN TECNOLOGÍAS AEROESPACIALES (Plan 2010). (Unidad docente Optativa)
- GRADO EN INGENIERÍA EN TECNOLOGÍAS INDUSTRIALES (Plan 2010). (Unidad docente Optativa)

**Créditos ECTS:** 3

**Idiomas docencia:** Inglés

**Profesorado**

**Responsable:** MARTA GANGOLELLS SOLANELLAS

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**Metodologías docentes**

The course is divided into parts:
- Theory classes
- Practical classes
- Self-study for doing exercises and activities.

In the theory classes, teachers will introduce the theoretical basis of the concepts, methods and results and illustrate them with examples appropriate to facilitate their understanding.

In the practical classes (in the classroom), teachers guide students in applying theoretical concepts to solve problems, always using critical reasoning. We propose that students solve exercises in and outside the classroom, to promote contact and use the basic tools needed to solve problems.

Students, independently, need to work on the materials provided by teachers and the outcomes of the sessions of exercises/problems, in order to fix and assimilate the concepts.

The teachers provide the syllabus and monitoring of activities (by ATENEA).

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**Objetivos de aprendizaje de la asignatura**

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**Horas totales de dedicación del estudiantado**

<table>
<thead>
<tr>
<th>Dedicación total: 75h</th>
<th>Horas grupo grande: 30h</th>
<th>40.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Horas aprendizaje autónomo: 45h</td>
<td>60.00%</td>
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### Contenidos

<table>
<thead>
<tr>
<th>(CAST) Energy certification and energy saving measures applied to the built environment</th>
<th>Dedicación: 75h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grupo grande/Teoría: 30h</td>
</tr>
<tr>
<td></td>
<td>Aprendizaje autónomo: 45h</td>
</tr>
</tbody>
</table>

#### Descripción:
- (CAST) Introduction to energy consumption in the built environment
- Introduction to the legal framework related to the energy efficiency in buildings
- Limitation of buildings' energy demand. Software LIDER.
- Energy certification of buildings. Software CALENER.
- Energy saving measures
- Real experiences on the integration of smart technologies (energy metering and sensor-actuator networks) in residential and tertiary buildings.

#### Actividades vinculadas:
- (CAST) Project developed in small groups related to an energy certification and proposal of energy performance improvements. Each group will choose the building object of analysis.
- During some sessions, small exercises will be conducted in the class individually or in small groups and some others will be virtual.

### Sistema de calificación

The final grade depends on the following assessment criteria:
- Project (part 1), weight: 35 %
- Project (part 2), weight: 35 %
- Class activities, weight: 30 %

Non-satisfactory results in the project will be able to be redirected by improving the project individually after highlighting weak points. All the students have the right to improve the project. The improved project will have to be delivered the day scheduled by the school within the period of final exams. Marks in the improved project can range from 0 to 10. Only the best mark will be taken into account.

### Bibliografía

### Otros recursos: