# 320046 - DSF - Photovoltaic System Design

**Coordinating unit:** 205 - ESEIAAT - Terrassa School of Industrial, Aerospace and Audiovisual Engineering  
**Teaching unit:** 710 - EEL - Department of Electronic Engineering  
**Academic year:** 2019  
**Degree:** BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Optional)  
**ECTS credits:** 6  
**Teaching languages:** Catalan, Spanish

## Teaching staff

**Coordinator:** Joan Salaet Pereira  
**Others:** Jordi Zaragoza Bertomeu

## Degree competences to which the subject contributes

### Transversal:

1. **SELF-DIRECTED LEARNING** - Level 2: Completing set tasks based on the guidelines set by lecturers. Devoting the time needed to complete each task, including personal contributions and expanding on the recommended information sources.

2. **EFFICIENT ORAL AND WRITTEN COMMUNICATION** - Level 2. Using strategies for preparing and giving oral presentations. Writing texts and documents whose content is coherent, well structured and free of spelling and grammatical errors.

3. **SUSTAINABILITY AND SOCIAL COMMITMENT** - Level 3. Taking social, economic and environmental factors into account in the application of solutions. Undertaking projects that tie in with human development and sustainability.

4. **TEAMWORK** - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.

5. **EFFECTIVE USE OF INFORMATION RESOURCES** - Level 2. Designing and executing a good strategy for advanced searches using specialized information resources, once the various parts of an academic document have been identified and bibliographical references provided. Choosing suitable information based on its relevance and quality.

## Learning objectives of the subject

### Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group:</th>
<th>30h</th>
<th>20.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours medium group:</td>
<td>0h</td>
<td>0.00%</td>
<td></td>
</tr>
<tr>
<td>Hours small group:</td>
<td>30h</td>
<td>20.00%</td>
<td></td>
</tr>
<tr>
<td>Guided activities:</td>
<td>0h</td>
<td>0.00%</td>
<td></td>
</tr>
<tr>
<td>Self study:</td>
<td>90h</td>
<td>60.00%</td>
<td></td>
</tr>
<tr>
<td>TEMA</td>
<td>Learning time</td>
<td>Theory classes</td>
<td>Practical classes</td>
</tr>
<tr>
<td>------------</td>
<td>---------------</td>
<td>----------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>TEMA 1: INTRODUCCIÓ</td>
<td>6h</td>
<td>2h</td>
<td>1h</td>
</tr>
<tr>
<td>TEMA 2: LA RADIACIÓ SOLAR</td>
<td>19h</td>
<td>4h</td>
<td>2h</td>
</tr>
<tr>
<td>TEMA 3: LA CEL·LA SOLAR</td>
<td>31h</td>
<td>6h</td>
<td>5h</td>
</tr>
<tr>
<td>TEMA 4: EL GENERADOR FOTOVOLTAIC</td>
<td>22h</td>
<td>4h</td>
<td>3h</td>
</tr>
<tr>
<td>TEMA 5: ACUMULADORS D'ENERGIA</td>
<td>21h</td>
<td>4h</td>
<td>2h</td>
</tr>
</tbody>
</table>
The assessment of the level of knowledge acquired by the student will be carried out based on her/his activity in the large, medium and small groups. In the first case two tests will be carried out, one at the end of the first two-month period (modules 1, 2 and 3) and the other at the end of the second one (modules 4, 5 and 6). With regard to his/her activity in the medium group, it will be evaluated by the correction of various exercises that the student will have to be delivering online (via Athena) during the course. Finally, their activity in the small group will be evaluated by the reports (given by the groups) of the laboratory sessions. The weighting of each assessment activity shall be as follows:

- Exam of the first two-month period: 25%
- Exam of the second two month period: 30%
- Online exercises: 15%
- Lab reports: 30%

### Bibliography

**Basic:**


**Complementary:**


**Others resources:**

- (ENG) TEMA 6: SISTEMES FOTOVOLTAICS AUTÒNOMS
  - Learning time: 29h
    - Theory classes: 6h
    - Practical classes: 3h
    - Laboratory classes: 3h
    - Self study: 17h

- (ENG) TEMA 7: SISTEMES FOTOVOLTAICS CONNECTAS A LA XARXA ELÈCTRICA PÚBLICA.
  - Learning time: 25h
    - Theory classes: 4h
    - Practical classes: 3h
    - Laboratory classes: 3h
    - Self study: 15h