Coordinating unit: 295 - EEBE - Barcelona East School of Engineering
Teaching unit: 748 - FIS - Department of Physics
Academic year: 2017
Degree: BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN BIOMEDICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN ENERGY ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN ENERGY ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN BIOMEDICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional)
BACHELOR'S DEGREE IN MATERIALS ENGINEERING (Syllabus 2010). (Teaching unit Optional)
ECTS credits: 6
Teaching languages: Catalan

Teaching staff
Coordinator: Muriel Botey
Others: Muriel Botey
Roberto Macovez

Prior skills
Students should have the prior knowledge of mathematics and physics acquired in the initial phase.

Degree competences to which the subject contributes
Transversal:
1. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.

Learning objectives of the subject
# Study load

<table>
<thead>
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<th>Total learning time: 150h</th>
<th>Hours large group: 45h</th>
<th>30.00%</th>
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<tbody>
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<td></td>
<td></td>
<td>Hours medium group: 0h</td>
<td>0.00%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hours small group: 15h</td>
<td>10.00%</td>
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<td></td>
<td></td>
<td>Guided activities: 0h</td>
<td>0.00%</td>
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<tr>
<td></td>
<td></td>
<td>Self study: 90h</td>
<td>60.00%</td>
</tr>
</tbody>
</table>

*Study load*
### Content

**Tema1:** Naturalesa i propagació de la llum: pinces òptiques i antenes.

Degree competences to which the content contributes:

**Tema2:** Fonts de llum: energia solar, bombetes, LEDs i Làsers.

Degree competences to which the content contributes:

**Tema3:** Polarització: filtres i visó 3D.

Degree competences to which the content contributes:

**Tema4:** Òptica geomètrica, de les micres als anys llum: microscopis, antenes parabòliques, telescopis,...

Degree competences to which the content contributes:

**Tema5:** Interferències lluminoses: mesura indirecta nanomètrica, filtres de colors,...

Degree competences to which the content contributes:

**Tema6:** Difracció i holografia.

Degree competences to which the content contributes:

**Tema7:** Tecnologia làser: tall, soldadura, marcatge,...

Degree competences to which the content contributes:

**Tema8:** Comunicacions òptiques. Fibres òptiques.

Degree competences to which the content contributes:
Bibliography

Basic:

