Learning objectives of the subject

This course is based in the practical development of a "hands-on" project of a robotized system applied to a real case study. The project must be proposed by lecturers and can include a different set of technologies all of them integrated with robotics (that is computer vision, artificial reasoning, PLCs, OPC, SCADA systems, etc). Projects can be based on different mobile robots platforms and could consider some different programming languages. Projects will be developed by groups and teachers will assess each student’s teamwork in order to help them in the project development. Nevertheless students, organized in teamwork, need to work on the used equipment in order to develop solutions according to the project goals. Students could be asked to prepare written reports, oral presentations and public demonstration of the project functionality. Teachers provide the curriculum and monitoring of activities through ATENEA.

The teachers provide the syllabus and monitoring of activities (by ATENEA)
### Study load

<table>
<thead>
<tr>
<th>Total learning time: 75h</th>
<th>Hours large group:</th>
<th>27h</th>
<th>36.00%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group:</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td></td>
<td>Hours small group:</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td></td>
<td>Guided activities:</td>
<td>0h</td>
<td>0.00%</td>
</tr>
<tr>
<td></td>
<td>Self study:</td>
<td>48h</td>
<td>64.00%</td>
</tr>
</tbody>
</table>

### Content

**Module 1: Mobile Robots: real case study and implementation**

**Learning time: 75h**

- **Theory classes:** 27h
- **Self study:** 48h

**Description:**

This course is based in the practical development of a "hands-on" application of a mobile robot applied to a real case study. The applications must be proposed by lecturers and can include a different set of technologies all of them integrated with mobile robotics (that is computer vision, artificial reasoning, PLCs, OPC, SCADA systems, etc).

Applications will be developed by groups and teachers will assess and supervise each student's teamwork in order to help them in the project development and to solve possible doubts.

**Related activities:**

Students, organized in teamwork need to work also in autonomous way, on the used equipment in order to develop solutions according to the project goals.

### Qualification system

- Partial laboratory test: 20%
- Project results: 50%
- Small project modification: 30%

The course will provide procedures enabling to retrieve the partial unsatisfactory marks.
Bibliography

Basic:


Complementary: