### Degree competences to which the subject contributes

**Specific:**
1. CE20. Fundamental knowledge and application of analogue electronics.
2. CE24. Ability to design electronic, analog, digital and power systems.
3. CE25. Knowledge and ability of systems modeling and simulation.

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

### Learning objectives of the subject

At the end of the course, the student should be able to:

### Prior skills

It is necessary to have a certain knowledge about both discrete and integrated analog devices (diodes, transistors and operational amplifiers).

It is also recommended to have advanced skills on electrical circuits analysis and the use of circuit simulation software.

### Requirements

Sistemes Electrònics (SIEK)
- determine the normal behaviour of an analog circuit.
- design the components of an electronic system so that it develops an analog function to accomplish some specifications.
- use electronic simulation software to understand the behaviour of analog circuits and design component values.
- mount, verify and test analog circuits.

### Study load

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

### Content

1. **Learning time:** 60h
   - Theory classes: 18h
   - Laboratory classes: 6h
   - Self study: 36h

2. **Learning time:** 51h
   - Theory classes: 15h
   - Laboratory classes: 6h
   - Self study: 30h

3. **Learning time:** 39h
   - Theory classes: 12h
   - Self study: 27h
The course includes regular assignments consisting in activities in the laboratory (NLab), and two exams (NEx1 and NEx2).

The final grade (NF) is calculated by means of the following expression:

\[ NF = 0.4 \times NEx1 + 0.4 \times NEx2 + 0.2 \times NLab \]

## Regulations for carrying out activities

The exams will be individually developed by the student. All the lab activities must be done to pass the course. A follow-up will be taken into account as part of the student evaluation in his lab activities.

## Bibliography

**Basic:**