Course guide
240072 - 240072 - Electronics

Unit in charge: Barcelona School of Industrial Engineering
Teaching unit: 710 - EEL - Department of Electronic Engineering.
Degree: BACHELOR’S DEGREE IN INDUSTRIAL TECHNOLOGY ENGINEERING (Syllabus 2010). (Compulsory subject).
Academic year: 2023  ECTS Credits: 7.5  Languages: Catalan, Spanish

LECTURER

Coordinating lecturer: Suñé Socias, Víctor
Others: Busquets Monge, Sergio
        Carrasco Lopez, Juan Antonio
        Català, Roger
        Llamas, Francisco
        Moreno, Manuel
        Santos Miranda, Jose Antonio
        Tomàs, Ernest
        Vega, Dídac
        Suñé, Víctor

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. Knowledge of electronics fundaments.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

General objective:
Know the different types of electronic systems, their functionality, their components, and their applicability in the industry.

Specific objectives:
Know the essence of electronic systems and the different types of electronic systems: analog systems, digital systems, power electronics systems, and electronic instrumentation systems.
Know the main components used in electronic systems.
Know the behavior models of the main electronic components.
Know some analysis and synthesis techniques of electronic circuits.
Know the main analog systems and their most significant applications.
Know the main digital systems and their most significant applications.
Become familiar with the use of common instruments found in an electronics laboratory.
Know how to interpret the information from electronic component datasheets.
Know the basic vocabulary to communicate with electronic engineers.
Know how to set the specifications of electronic systems.
Know how to analyze and design simple electronic systems.
STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours small group</td>
<td>15,0</td>
<td>8.00</td>
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<tr>
<td>Self study</td>
<td>112,5</td>
<td>60.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>60,0</td>
<td>32.00</td>
</tr>
</tbody>
</table>

Total learning time: 187.5 h

CONTENTS

Course presentation

Description:
Course presentation

Full-or-part-time: 0h 30m
Theory classes: 0h 30m

Introduciton

Description:
- Electric signals and systems
- Electronic systems
- Sensors and actuators
- Review of circuit theory

Full-or-part-time: 3h 30m
Theory classes: 3h 30m

Devices and basic circuits

Description:
content english

Full-or-part-time: 20h
Theory classes: 20h

Analog systems

Description:
content english

Full-or-part-time: 12h
Theory classes: 12h
Digital systems

Description:
content english

Full-or-part-time: 20h
Theory classes: 20h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:

Complementary: