Course guide
330224 - DP - Programmable Devices

Unit in charge: Manresa School of Engineering
Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering.

Degree: BACHELOR’S DEGREE IN ICT SYSTEMS ENGINEERING (Syllabus 2010). (Compulsory subject).

Academic year: 2022  ECTS Credits: 6.0  Languages: Catalan, Spanish, English

LECTURER

Coordinating lecturer: FRANCISCO DEL AGUILA LOPEZ

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. Knowledge and understanding of the architecture of programmable devices, including the identification of the elements that make it up and their interaction, with emphasis on the most common architectures of embedded systems.
2. Develop the ability to abstract procedures and generic data in the face of a real small and medium-sized industrial problem.
3. (ENG) La capacitat d’especificar, analitzar, dissenyar, avaluar i documentar circuits digitals, tant seqüencials com combinacionals, així com les seves alternatives d’implementació.
4. The ability to use the tools and languages of specification, synthesis and verification of electronic circuits.
5. The knowledge and ability to use existing tools and instrumentation for the analysis, design, development and verification of electronic, computer and communications systems.
6. Develop their ability to solve real problems through the development of small and medium-sized programs at the industrial level.

Transversal:
7. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.
8. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.
9. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.
10. 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.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self study</td>
<td>90,0</td>
<td>60.00</td>
</tr>
<tr>
<td>Hours small group</td>
<td>30,0</td>
<td>20.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>30,0</td>
<td>20.00</td>
</tr>
</tbody>
</table>
Total learning time: 150 h

### CONTENTS

**1. CIRCUITS DIGITALS PROGRAMABLES**
- **Full-or-part-time:** 25h
- Theory classes: 6h
- Practical classes: 4h
- Self study: 15h

**2. ESTRUCTURA I PROGRAMACIÓ D'UN MICROCONTROLADOR**
- **Full-or-part-time:** 120h
- Theory classes: 22h
- Practical classes: 26h
- Self study: 72h

**3. PROCESSADORS DIGITALS DE SENAL (DSP)**
- **Full-or-part-time:** 5h
- Theory classes: 2h
- Self study: 3h

### ACTIVITIES

**1. CLASSES MAGISTRALS I PARTICIPATIVES**
- **Full-or-part-time:** 26h
- Theory classes: 26h

**2. CLASSES DE LABORATORI**
- **Full-or-part-time:** 60h
- Laboratory classes: 30h
- Self study: 30h

**3. TREBALL PERSONAL INDIVIDUAL / EN GRUP**
- **Full-or-part-time:** 30h
- Self study: 30h

**4. PROVES**
- **Full-or-part-time:** 34h
- Theory classes: 4h
- Self study: 30h
GRADING SYSTEM

BIBLIOGRAPHY

Basic:
- Manual de referència i notes d'aplicació del fabricant.