Course guide
330232 - PCTR - Concurrent and Real-Time Programming

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

LECTURER
Coordinating lecturer: ANTONI ESCOBET CANAL
Others: SEBASTIAN VILA MARTA

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. The ability to analyze, design and maintain computer applications as well as knowledge of the principles and tools of software engineering and its application.
2. Knowledge and ability to use existing tools and instrumentation for the analysis, design, development and verification of electronic, computer and communications systems.
3. The ability to perform the typical activities of the degree, taking into account the corresponding standards, rules and regulations.
4. Knowledge of and the ability to use existing tools and instrumentation for the analysis, design, development and verification of electronic, computer and communication system.
5. The ability to analyze, design and implement, select and use real-time data processing, control and automation systems, especially in embedded systems.
6. The ability to perform the typical activities of the degree, taking into account the corresponding standards, rules and regulations.

Transversal:
7. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.
8. 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.
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.

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>Hours large group</td>
<td>30,0</td>
<td>20.00</td>
</tr>
<tr>
<td>Hours small group</td>
<td>30,0</td>
<td>20.00</td>
</tr>
<tr>
<td>Self study</td>
<td>90,0</td>
<td>60.00</td>
</tr>
</tbody>
</table>

Total learning time: 150 h
CONTENTS

(ENG) TEMA 1: Introducció a la Concurrència

(ENG) TEMA 2: Programació concurrent

(ENG) TEMA 3: Sistemes en Temps real

(ENG) TEMA 4: Disseny i Implementació de Sistemes en Temps Real

(ENG) TEMA 5: Planificació de processos de Temps Real

ACTIVITIES

(ENG) ACTIVITAT 1: EXAMEN
Full-or-part-time: 2h
Theory classes: 2h

(ENG) ACTIVITAT 2: ESTUDI DE CONTINGUTS
Full-or-part-time: 25h
Self study: 25h

(ENG) ACTIVITAT 3: CLASSE EXPOSITIVA
Full-or-part-time: 14h
Theory classes: 14h

(ENG) ACTIVITAT 4: CLASSE DE PROBLEMES
Full-or-part-time: 14h
Theory classes: 14h

(ENG) ACTIVITAT 5: TREBALL DE LABORATORI
Full-or-part-time: 65h
Laboratory classes: 30h
Self study: 35h
(ENG) ACTIVITAT 6: RESOLUCIÓ DE PROBLEMES

Full-or-part-time: 30h
Self study: 30h

GRADING SYSTEM

BIBLIOGRAPHY

Basic: