Course guides
820089 - PDM - Mobile Devices Programming

Unit in charge: Barcelona East School of Engineering
Teaching unit: 723 - CS - Department of Computer Science.

Degree: BACHELOR’S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR’S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR’S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR’S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR’S DEGREE IN MATERIALS ENGINEERING (Syllabus 2010). (Optional subject).

Academic year: 2020 ECTS Credits: 6.0 Languages: Catalan, Spanish

LECTURER

Coordinating lecturer: Antoni Perez-Poch
Others: Antoni Perez-Poch

PRIOR SKILLS

Basic programming. (Subject: Informatics, first course)

REQUIREMENTS

None.

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. Understand the basics behind the use and programming of PCs, operating systems, databases and software with applications in engineering.
3. Apply their knowledge to industrial informatics and communications.

Transversal:

TEACHING METHODOLOGY

The course uses a methodology based on PBL - Project Based Learning: guided work (laboratory) - 30 % - and a final project - 70%.

LEARNING OBJECTIVES OF THE SUBJECT

- Let the student know about the concepts and basic usages of mobile device programming (phones and tablets) with Android.
- Provide programming techniques for mobile devices.
STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours small group</td>
<td>60,0</td>
<td>40.00</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) Instalación e introducción al entorno de desarrollo (SDK) de Android.*

**Description:**
Introduction to the programming framework

**Specific objectives:**
Knowing how to develop standard programs

**Related activities:**
Lab 1

**Related competencies:**
CEEIA-28. Apply their knowledge to industrial informatics and communications.
CEB-03. Understand the basics behind the use and programming of PCs, operating systems, databases and software with applications in engineering.

**Full-or-part-time:** 10h
Laboratory classes: 4h
Self study : 6h

*(ENG) Estructuras básicas de programación en el entorno Android.*

**Description:**
Basic Programming

**Specific objectives:**
Be able to develop elementary programs within a given programming framework

**Related activities:**
Lab 3

**Related competencies:**
CEEIA-28. Apply their knowledge to industrial informatics and communications.
CEB-03. Understand the basics behind the use and programming of PCs, operating systems, databases and software with applications in engineering.

**Full-or-part-time:** 10h
Laboratory classes: 4h
Self study : 6h
### (ENG) Tratamiento de gráficos.

**Description:**
Graphics programming

**Specific objectives:**
Be able to program with graphics

**Related activities:**
Lab 3

**Related competencies:**
CEEIA-28. Apply their knowledge to industrial informatics and communications.
CEB-03. Understand the basics behind the use and programming of PCs, operating systems, databases and software with applications in engineering.

**Full-or-part-time:** 10h
Laboratory classes: 4h
Self study: 6h

### (ENG) Acceso a los accesorios del dispositivo móvil.

**Description:**
I/O device interface programming

**Specific objectives:**
Be able to program the I/O device communications

**Related activities:**
Lab 4

**Related competencies:**
CEEIA-28. Apply their knowledge to industrial informatics and communications.
CEB-03. Understand the basics behind the use and programming of PCs, operating systems, databases and software with applications in engineering.

**Full-or-part-time:** 10h
Laboratory classes: 4h
Self study: 6h

### (ENG) Programación con bases de datos.

**Description:**
Database programming.

**Specific objectives:**
Be able to program a data base with the device

**Related activities:**
Lab 5

**Related competencies:**
CEEIA-28. Apply their knowledge to industrial informatics and communications.
CEB-03. Understand the basics behind the use and programming of PCs, operating systems, databases and software with applications in engineering.

**Full-or-part-time:** 10h
Laboratory classes: 4h
Self study: 6h
**Applications development with MIT App Inventor**

- **Description:**
  Applications development with MIT App Inventor

- **Specific objectives:**
  Mobile app development.

- **Related activities:**
  Programming project

- **Full-or-part-time:** 100h
  - Laboratory classes: 40h
  - Self study: 60h

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**GRADING SYSTEM**

Final grade will result from adding that of laboratory work (30%) and a final project (another 70%).

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**EXAMINATION RULES.**

Laboratory works are guided work. The final project will be elected by the student with the previous approval of the professor.

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**BIBLIOGRAPHY**

- **Basic:**

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**RESOURCES**

- **Other resources:**
  https://appinventor.mit.edu/