Course guides
804131 - BETMA7-M - Specialization Block in Applied Multimedia Technologies VII

Unit in charge: Image Processing and Multimedia Technology Centre
Teaching unit: 804 - CITM - Image Processing and Multimedia Technology Centre.
Degree: BACHELOR’S DEGREE IN MULTIMEDIA STUDIES (Syllabus 2009). (Optional subject).

Academic year: 2021  ECTS Credits: 6.0  Languages: Catalan

LECTURER
Coordinating lecturer: Fernandez Duran, Pablo

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
5. Apply new theoretical and practical knowledge related to the creation of content and interactive multimedia applications for use in the areas of: training, health, leisure and entertainment and business and professional activities.

Transversal:
1. SELF-DIRECTED LEARNING. Detecting gaps in one’s knowledge and overcoming them through critical self-appraisal. Choosing the best path for broadening one's knowledge.
2. EFFICIENT ORAL AND WRITTEN COMMUNICATION. Communicating verbally and in writing about learning outcomes, thought-building and decision-making. Taking part in debates about issues related to the own field of specialization.
4. EFFECTIVE USE OF INFORMATION RESOURCES. Managing the acquisition, structure, analysis and display of information from the own field of specialization. Taking a critical stance with regard to the results obtained.

TEACHING METHODOLOGY
Mixed theory and programming sessions.

LEARNING OBJECTIVES OF THE SUBJECT
Learn the skills to use the necessary tools for the programming of mobile applications.

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 medium group</td>
<td>60,0</td>
<td>40.00</td>
</tr>
</tbody>
</table>

Total learning time: 150 h
CONTENTS

Programming in Dart

Description:
Review of Dart Programming

Specific objectives:
Learn a strong enough level in Dart programming to be able to use Flutter.

Related activities:
Dart Programming Exercise

Full-or-part-time: 22h
Practical classes: 8h
Guided activities: 6h
Self study: 8h

Programming Mobile Graphical User Interfaces

Description:
Widgets in Flutter.
Text, Containers and Styles.
Rows and Columns.
Buttons and TextInput.
Lists and Grids.

Specific objectives:
Knowing and using the majority of Flutter's basic elements.

Related activities:
Layout Exercise

Full-or-part-time: 22h
Practical classes: 8h
Guided activities: 6h
Self study: 8h

Global state management and navigation

Description:
Routes (screens).
Communication phases between screens.
Named routes.
Global state and management.
The Provider library.

Related activities:
Exercise about a simple app

Full-or-part-time: 26h
Practical classes: 10h
Guided activities: 6h
Self study: 10h
### Local and Cloud Persistence

**Description:**
- Storing files on the device.
- The JSON format.
- Local persistence.
- Firebase and Cloud Firestore.
- Collections and Documents.
- Basic Operations with Firestore.

**Full-or-part-time:** 20h  
Practical classes: 10h  
Self study: 10h

### Developing a Project

**Description:**
- Graphic Design and functional specification.
- Project Development.

**Related activities:**
- Mobile App Project

**Full-or-part-time:** 60h  
Practical classes: 12h  
Guided activities: 24h  
Self study: 24h

### ACTIVITIES

#### Layout Exercise

**Description:**
- Develop a screen for an app from a given design.

**Full-or-part-time:** 6h  
Guided activities: 6h

#### Exercise about Dart Programming

**Description:**
- Write a non-trivial program in Dart

**Full-or-part-time:** 6h  
Guided activities: 6h

#### Exercise about a simple app

**Description:**
- Develop a simple app with bounded functionality

**Full-or-part-time:** 6h  
Guided activities: 6h
Mobile App Project

Description:
Develop a project about a full mobil app in groups.

Full-or-part-time: 48h
Guided activities: 24h
Self study: 24h

GRADING SYSTEM

Tasks: 30%
Partial Exam: 15%
Project Design: 15%
Project Implementation: 30%
Attitude and Participation: 10%

EXAMINATION RULES.

Re-evaluation only affects the Partial Exam and it overrides its mark.