270736 - ISP - Intelligent System Project

Coordinating unit: 270 - FIB - Barcelona School of Informatics  
Teaching unit: 723 - CS - Department of Computer Science  
Academic year: 2019  
Degree: MASTER’S DEGREE IN ARTIFICIAL INTELLIGENCE (Syllabus 2012). (Teaching unit Optional)  
MASTER’S DEGREE IN ARTIFICIAL INTELLIGENCE (Syllabus 2009). (Teaching unit Optional)  
MASTER’S DEGREE IN ARTIFICIAL INTELLIGENCE (Syllabus 2017). (Teaching unit Optional)  
ECTS credits: 3

Teaching methodology

In general there will be different kind of teaching methods:
- Expositive Lectures
- Participative Lectures
- Project Supervising Classes
- Orientation classes for Autonomous work and cooperative teamwork

Concretely:
The first class will be focused on laboratory working teams, and basic information about the project will be given. The following classes (3-4) will be devoted to providing information about the process of developing an Intelligent System and all its phases. The remaining laboratory classes (7) will be devoted to oversee and guide the Intelligent System projects of different groups.

Learning objectives of the subject

1. The students will be able to integrate and apply several knowledge acquired in previous Master courses for the solving of complex problems using Artificial Intelligence techniques.
2. Students will be able to write and communicate their technical and research work on Intelligent Systems and achievements both to a general and specialized audience.
3. Students will acquire and learn the concepts and knowledge related to sustainability and their intrinsic relationship with Intelligent Systems.
4. Students will consolidate teamworking abilities.
5. Students will be able to design and construct an Intelligent System to solve a non trivial problem.

Study load

<table>
<thead>
<tr>
<th>Total learning time: 75h</th>
<th>Hours large group:</th>
<th>10h</th>
<th>13.33%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hours medium group:</td>
<td>10h</td>
<td>13.33%</td>
</tr>
<tr>
<td></td>
<td>Hours small group:</td>
<td>5h</td>
<td>6.67%</td>
</tr>
<tr>
<td></td>
<td>Guided activities:</td>
<td>2h</td>
<td>2.67%</td>
</tr>
<tr>
<td></td>
<td>Self study:</td>
<td>48h</td>
<td>64.00%</td>
</tr>
</tbody>
</table>
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## Content

### Introduction

**Degree competences to which the content contributes:**

**Description:**
Description of the aims of the course. Description of the team works. Information about the IS project timeline. Deliverables of the IS project.

### Problem Analysis

**Degree competences to which the content contributes:**

**Description:**

### Definition of the Intelligent System project issues

**Degree competences to which the content contributes:**

**Description:**
Definition of main goals of the IS project. Definition of sub-goals. Task Analysis.

### Development of an Intelligent System Project

**Degree competences to which the content contributes:**

**Description:**

### Intelligent System Project Output

**Degree competences to which the content contributes:**

**Description:**

### Intelligent Methods and Models

**Degree competences to which the content contributes:**
### Description:
Review of main Intelligent Methods available.

### Software tools

#### Degree competences to which the content contributes:

#### Description:
Review of main software tools available.
## Planning of activities

<table>
<thead>
<tr>
<th>Planning of activities</th>
<th>Hours: 4h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introductory Lab Session</strong></td>
<td>4h</td>
</tr>
<tr>
<td><strong>Description:</strong> First Lab class will focus on laboratory working teams and on giving information about the IS project. (timeline, deliverables, etc.)</td>
<td></td>
</tr>
<tr>
<td><strong>Specific objectives:</strong> 4</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Planning of activities</th>
<th>Hours: 8h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lab Sessions on the analysis of the problem and the design and implementation of an Intelligent System Project</strong></td>
<td>8h</td>
</tr>
<tr>
<td><strong>Description:</strong> The following classes will be dedicated to providing information about the process of developing an Intelligent System and all its phases</td>
<td></td>
</tr>
<tr>
<td><strong>Specific objectives:</strong> 3, 5</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Planning of activities</th>
<th>Hours: 4h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Laboratory sessions on the review of intelligent methods and intelligent software tools available</strong></td>
<td>4h</td>
</tr>
<tr>
<td><strong>Specific objectives:</strong> 1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Planning of activities</th>
<th>Hours: 16h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Laboratory sessions for tracking the project</strong></td>
<td>16h</td>
</tr>
<tr>
<td><strong>Specific objectives:</strong></td>
<td></td>
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</tbody>
</table>
The assessment of the achievement of the objectives of the course will be made by assessing the achievements of an Intelligent System project throughout the course, which will be done working in teams of 3 or 4 students.

The final grade (FGrade) is a weighted average between the teamwork (TGrade) assessment and the evaluation of the work of each individual student (IGrade) according to the formula:

\[ \text{FGrade} = 0.5 \times \text{TGrade} + 0.5 \times \text{IGrade} \]

The individual grade for each student (IGrade) will be obtained by observing and assessing the ongoing work and participation of each student throughout the project.

The teamwork grade (TGrade) will be a weighted average between four marks related to the definition of the project document (PM1Gr), the midterm delivery of system analysis and design (PM2Gr), the final document and software delivery (PM3Gr), and the final public presentation of the project (PM4Gr). It will be computed according to the formula:

\[ \text{TGrade} = 0.1 \times \text{PM1Gr} + 0.2 \times \text{PM2Gr} + 0.5 \times \text{PM3Gr} + 0.2 \times \text{PM4Gr} \]
Bibliography

Basic:


Complementary:


Others resources:

Hyperlink

https://www.computer.org/csdl/magazine/ex


http://www.springer.com/computer/ai/journal/10489

http://tist.acm.org/index.php