AD046 Internet and Multimedia technologies

Course Contents

DESCRIPTION

Technology is an essential part of any modern business nowadays, and amongst all new technologies, the Internet is clearly the most powerful, omnipresent, and the one which has the biggest potential to help make any business a successful one. Most of the most renowned young companies such as Google and Facebook have built their success around the Internet and the right multimedia technologies that have allowed them to reach all kind of users around the world, may it be through a computer, a handheld device, or any other interactive interface.

The aim of this course is to provide a solid knowledge about nowadays existing state-of-the-art technologies centered on the Internet, which might provide any business the power to reach and engage thousands of users worldwide. The syllabus for the course covers the following main topics: 1. Information technologies & social media; 2. Advanced technologic trends; 3. Interactive interfaces & game technologies; 4. Mobile apps; and 5. Web creation.

OBJECTIVES

1. To know nowadays most relevant state-of-the-art multimedia technologies especially those focused on online business.
2. To acquire a general technological background which allows the students to decide which technologies are best suitable, and why, for supporting the success of a specific business.
3. To increase the ability and skills necessary to use the Internet and multimedia technologies to work collaboratively and find solutions to arising challenges.
4. To work hands-on on a software project related to the Internet and multimedia technologies, in order to better understand the process and costs of general software development.
5. To obtain a general understanding on the difference in terms of internal technology and development between web applications and mobile native applications.
6. To be able to develop web application interfaces and mobile apps using the appropriate software tools available.

Methodology

The course consists of two or three sessions a week (see proposed schedule), held in a computer classroom. These sessions are divided in: lectures in which the theoretical concepts are presented, practical classes in which the teacher and students perform collaborative exercises to further experiment with presented concepts, and group work on projects development. In summary, the different methods used to fulfill the learning process for this course are:

1. Lectures:
   The teacher presents theoretical concepts while showing examples and answering to students’ questions.

2. Practical classes:
   The teacher proposes some topics to research, experiment or to work on, and the students use their computers to perform the requested tasks, individually or collaboratively, depending on each case. During this classes the resulting work is discussed in public, and in some cases, it is taken as the starting point for extended exercises which will be realized as personal exercises.
3. Personal exercises:

These are small assignments which will be proposed periodically during lectures or practical classes and which students have to do on their own, mainly at home, and submit them in order to grant a proper continuous assessment for them.

4. Group projects:

Two final projects will be developed during the second half of the course. These projects will be developed in work groups in class with the teachers’ assessment to help the student groups to progress properly, and will be also developed out of class time to implement all required functionalities. The two projects will be submitted and presented in class so that all students can share and give an opinion about their classmates’ proposals.

Competences

- Advanced knowledge about current Internet technologies.
- Basic ability to design web and mobile applications.
- Analysis of technological project requirements and planning of suitable development strategies.
- Understanding of contemporaneous technologies and the need to keep a continuous learning.
- Search of information through the Internet.
- Self-learning.
- Critical Thinking.
- Development of Information management skills.
- Problem-solving skills.
- Teamwork.
- Intrapersonal knowledge and development.
- Interpersonal skills.
- Cross-cultural skills.
- Creativity.
- A search for quality excellence.
- Self Motivation.
- Generative learning.

Learning Outcomes

By the end of this course, students should be able to have achieved the objectives set up for this course and have developed the competencies listed above. In summary, they will have gained a broad knowledge from a technical point of view about nowadays multimedia technologies which can be used through the Internet to boost any business. This will be especially useful to help to the conception of new technology-based businesses, understanding the process and estimating the costs of any multimedia application development.

Evaluation

CONTINUOUS ASSESSMENT

In order to achieve their academic progress, students are expected to attend punctually all classes. In addition to this, the following aspects will be taken into account for determining the final course grade:
• Class participation.  
• Online forums participation and collaboration.  
• Pro-activity and creativity in group work and in individual assignments.  
• Punctual submission of proposed assignments

EVALUATION SYSTEM

The Course grade will be based on the following point breakdown:

20% Collaboration in online forums, quality participation, attitude and daily in & out-of-class effort.

20% In & out-of-class exercises and activities.

30% Written Exam

30% Group projects

Prerequisite to pass this course is to meet a minimum mark of 5 over 10 in the written exam and a minimum mark of 5 over 10 in the group projects.

Agenda Sessions and Course Syllabus

AGENDA FOR THE SESSIONS: Below you can find a tentative schedule, subject to change if needed.

<table>
<thead>
<tr>
<th>Date</th>
<th>Week</th>
<th>Session</th>
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<tbody>
<tr>
<td>08/02/2012</td>
<td>1</td>
<td>Introduction</td>
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<tr>
<td>09/02/2012</td>
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<td>Information Technologies</td>
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<td>15/02/2012</td>
<td>2</td>
<td>Social Media</td>
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<td>16/02/2012</td>
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<td>Social Media</td>
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<td>22/02/2012</td>
<td>3</td>
<td>Social Media</td>
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<td>23/02/2012</td>
<td></td>
<td>Social Media</td>
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<tr>
<td>29/02/2012</td>
<td>4</td>
<td>Advanced trends</td>
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<td>01/03/2012</td>
<td></td>
<td>Advanced trends + Interactive TV</td>
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<td>07/03/2012</td>
<td>5</td>
<td>Interactive Interfaces (design principles)</td>
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<tr>
<td>08/03/2012</td>
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<td>Interactive Interfaces (interaction technologies)</td>
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<td>13/03/2012</td>
<td>6</td>
<td>Interactive Interfaces (creation tools)</td>
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<td>14/03/2012</td>
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<td>Interactive Interfaces (RIA technologies)</td>
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<td>15/03/2012</td>
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<td>Interactive Interfaces (3D graphics)</td>
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<td>20/03/2012</td>
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<td>Game Technologies (design principles &amp; gamification)</td>
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<td>21/03/2012</td>
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<td>Game Technologies (web development)</td>
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<td>22/03/2012</td>
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<td>Game Technologies (3D development)</td>
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<td>26/03 - 30/03</td>
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<td>Midterm exam</td>
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<td>02/04 - 09/04</td>
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<td>EASTER</td>
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<td>10/04/2012</td>
<td>8</td>
<td>Apps &amp; Mobility Design and state of the art</td>
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Observations

Professors:

- **Ricardo Torres** ([ricardot@salle.url.edu](mailto:ricardot@salle.url.edu))
  
  Ricardo Torres Kompen is a researcher in the field of technology enhanced learning and multimedia. He holds both a BSc (1991) and a MSc (2000) in Chemical Engineering, and is currently a PhD candidate in Multimedia Engineering at the Universitat Politècnica de Catalunya, his Thesis is focused on the personalisation of learning through the use of multimedia and technology. He has been working as a teacher in HE institutions since 1996, in the areas of Mathematics, Information Systems and e-Business & e-Marketing.

  **Office Hours:** By appointment.

- **Dani Arguedas** ([darguedas@salle.url.edu](mailto:darguedas@salle.url.edu))
  
  Dani Arguedas is an IT Engineer and Multimedia Engineer and has a master's degree in Creation, Design and Multimedia Engineering. He has been working as a technology researcher since 2004 and has worked in many diverse multimedia projects in LaSalle
Engineering department, including online videogames and serious games, 3D computer animation, mobile applications, web development, interactive installations, computer vision, virtual reality and augmented reality. During this time he has also been teacher of diverse multimedia technologies such as 3D modeling and animation, game creation and programming, and data compression.

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