# Course Guide

## 34691 Advanced Web Applications

### COURSE DATA

<table>
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<tr>
<th>Data Subject</th>
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<th>Name</th>
<th>Cycle</th>
<th>ECTS Credits</th>
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<td>34691</td>
<td>Advanced Web Applications</td>
<td>Grade</td>
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<td>2016 - 2017</td>
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### Study (s)

<table>
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<td>SCHOOL OF ENGINEERING</td>
<td>4</td>
<td>First term</td>
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<tr>
<td>1403 - Grado de Ingeniería Telemática</td>
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### Subject-matter

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### Coordination

<table>
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<tr>
<th>Name</th>
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<tr>
<td>SAMPER ZAPATER, JOSE JAVIER</td>
<td>240 - COMPUTER SCIENCE</td>
</tr>
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### SUMMARY

Advanced Web Applications is part of the optional module. It aims to be the continuation of the contents that the student has acquired in previous courses, especially in courses related to programming and Web application development. Its main objective is to provide an in depth view of the various technologies related to the Web environment that have emerged in this area: Blogs, Wikis, Social Networks, Content Managers, etc.. It is intended that the student is capable of handling them, including those related to Web 3.0, as well as design-oriented web applications in different areas or domains. At the same time, we want the student can understand the concept of semantic annotation and information extraction using technologies such as RDFa and GRDDL, tools that enable better management and knowledge recovering.
PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree
There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements
It is recommended to have completed the courses (taught to the previous year) related to programming and Web application development: Specifically, DAW, "Web Applications Development in Degrees in Computer and Telematics Engineering, and Web Programming in Multimedia Engineering.

OUTCOMES

1400 - Grado de Ingeniería Informática
- TI6 - Ability to design systems, applications and services based on network technologies, including the Internet, the web, e-commerce, multimedia, interactive services and mobile computing.
- SI1 - Ability to integrate ICT solutions into business processes in order to meet the information needs of organisations, thus enabling them to achieve their goals effectively and efficiently and providing them with competitive advantage.
- Capacidad para participar activamente en la especificación, diseño, implementación y mantenimiento de los sistemas de información y comunicación.

1405 - Grado en Ingeniería Multimedia
- R17 - Ability to design and evaluate human-computer interfaces that guarantee accessibility and usability of computer systems, services and applications.

LEARNING OUTCOMES

This course allows for the following learning outcomes or capabilities:

- Knowing determine the applicability of content management tools in the development of a specific web project.
- Being able to choose the development platform for web content best suited to each type of project.
- Be able to develop in environments common CMS on the market.
- Being able to design Web-oriented applications in different areas or domains.
- Understand the concept of semantic annotation and information extraction using technologies and tools that enable better management and pursuit of knowledge.

To complement the above results, this course also allows to acquire the following skills:
• Model and solve problems being able to identify the essential elements of a situation and make approximations to reduce problems to a manageable level. This includes solutions that are not derived from the application of a standardized procedure, but providing original, creative and imaginative answers.
• Organize, plan and conduct their own learning, individually and in groups in a coordinated way.
• Working individually and in groups in a coordinated way.
• Work in groups: collaborating, leading, planning, interacting, getting consensus, negotiating, resolving conflicts and respecting the views of others.
• Argue, defend their views and be critical (and self-criticism) from rational and rigorous criteria.
• Preparation and presentation of texts in a clear, coherent, organized and understandable way.
• Oral and written comprehension.

DESCRIPTION OF CONTENTS

1. Web Evolution
From Web 1.0 to Web 4.0: The Evolution of the Web

2. Technology and Web 2.0 tools
RSS
Mash up
Blogs
Wikis
Social Networks
Other Web 2.0 tools

3. Content Management System or CMS
What are the CMS and what are they used?
What types do exist?
Different aspects about CMS
Practical examples using most common CMS.

4. Web 3.0 Technologies
XML reminder. Structured Web Documents
RDF. Description of web resources
Microdata and Microformats
RDFa: Semantic Annotations in XHTML documents.
GRDDL: Getting RDF from XML, XHTML documents.
SPARQL: Query Language for RDF

5. Open Data Publication
Introduction to the Linked Open Data (LOD)
Semantic annotation and applications: Semantic Mash ups
Extraction of information through Web 3.0 technologies.: Case Dbpedia.org

6. Web 3.0 Applications
Examples of application of web 3.0: semantic search engines, semantic web services, social Semantic Web, semantic wiki etc.

WORKLOAD

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<tr>
<th>ACTIVITAT</th>
<th>Hours</th>
<th>% To be attended</th>
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<tbody>
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<td>Theory classes</td>
<td>30.00</td>
<td>100</td>
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<tr>
<td>Laboratory practices</td>
<td>20.00</td>
<td>100</td>
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<tr>
<td>Classroom practices</td>
<td>10.00</td>
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<tr>
<td>Development of group work</td>
<td>5.00</td>
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<tr>
<td>Development of individual work</td>
<td>5.00</td>
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<tr>
<td>Study and independent work</td>
<td>10.00</td>
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<tr>
<td>Preparation of evaluation activities</td>
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<td>Preparing lectures</td>
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<tr>
<td>Preparation of practical classes and problem</td>
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<td><strong>TOTAL</strong></td>
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TEACHING METHODOLOGY

During the on-site basis theoretical activities, the main topics of the course will be shown by providing a global and inclusive vision, analyzing in detail the key and more complex issues, encouraging at all times the students participation. These activities are complemented by practical activities in order to apply the basic concepts and to expand the knowledge and experience that is acquired during the performance of the proposed work. The on-site activities comprise the following:

- Problem-based lectures and questions in the classroom
- Sessions devoted to moderated discussions, and the resolution of problems and exercises that the students have previously worked
- Laboratory-based practical exercises

In addition to on-site activities, students must perform personal tasks (outside the classroom), including: monographs, guided literature research, questions and problems as well as the preparation of classes and exams (study). These tasks will be primarily conducted on an individual basis, thus enabling to enhance self-employment. Additionally, works requiring the participation of small groups of students (2-4) will be proposed to promote the students capacity for integration into working groups.
The University of Valencia e-learning platform (Aula Virtual) will be used to support the communication with students. Through this platform the students will have access to course materials used in class as well as the problems and exercises to solve.

## EVALUATION

Students can choose between two different assessments:

- Continuous assessment system
- Overall system.

**Continuous assessment system:**

The evaluation of the course is conducted by the aggregation of the following elements:

- Continuous assessment (N\_Continua), based on the students participation and their degree of involvement in the teaching-learning process, taking into account the regular attendance to onsite activities and the resolution of questions and problems, and the development of the works proposed to be delivered.
- Individual objective test (N\_Examenes), consisting of several exams, or knowledge tests, which consist of both theoretical/practical questions and problems.
- Assessment of practical activities (N\_Practicas,) from the achievement of objectives in the laboratory and problems sessions, and the preparation of reports. Oral presentations (individually and/ or in groups) can be also part of this evaluation elements in order to evaluate the students capacity for creating documents and transferring knowledge.

\[ \text{N\_Examenes Score} = 50\% \times \text{Score Control} + 50\% \times \text{Score Official Examination} \]

Control with note \( \geq 5 \) eliminate matter, but only your note is saved to the 1st call. In 2nd call exam it will be unique and correspond to the whole subject.

The 1st call exam consists of two parts. Those who have the approved control only submitted to the 2nd part and all the rest. The realization of the first part in the 1st Call void the note of the first part obtained in control.

\[ \text{Final Score} = 20\% \times N\_Continua + 45\% \times N\_Examenes + 35\% \times N\_Practicas \]

Continuous assessment is distributed among the following items:

- Attendance 5%
- Participation 5%
- Activities throughout the course: 10%
It will be necessary to, at least, obtain a minimum grade 4 in the different exams and N_Practicas to have the possibility to pass the course.

Attendance to laboratory sessions is mandatory. Students who do not attend at least a 80% of the laboratory sessions will carry out extra practice activities (to be specified by the teacher) to pass the practical part.

**Overall System:**
This method is applicable to any student who, for a justified reason (accepted by the lecturer), was not able to attend regular classes or did not pass the subject in first call. In this case, the rating will be calculated as 70% the grade obtained in a final exam and 30% corresponding to the practical activity obtained during the course (first call) or new works if the note was not approved. This exam will include the contents of theoretical and problem sessions; and will be held on the same date as the final exam for students following the continuous evaluation system.

The evaluation will be conducted in accordance with the University of Valencia Qualifications Legislation. At the time of writing this teaching guide, the current legislation is the one approved by the Governing Council of the UVEG in January 27, 2004, adjusted as provided for that purpose by the Royal Decrees 1044/2003 and 1125 / 2003. It states basically that the qualifications will be numbered from 0 to 10 with a decimal element and they must be accompanied with the qualitative rating in accordance with the following scale:

- From 0 to 4.9: “Failed”
- From 5 to 6.9 “Approved”
- From 7 to 8.9, “Notable”
- 9 to 10: “Outstanding” or “Outstanding with honors”

**REFERENCES**

**Basic**

Additional

- Joomla! 2.5 - Guía para Principiantes de Hagen Graf, Christine Graf y Isidro Baquero (21 abril 2012)
- Tutorial. XML Design. (Gentle Transition from XML to RDF). Roger L. Costello, David B. Jacobs @2003 the MITRE Corporation. Sponsored by DARPA
- Recurso Web en W3C: http://www.w3.org/standards/history/xhtml-rdfa
- Recurso Web en W3C: http://www.w3.org/TR/#tr_GRDDL
- Recurso Web en W3C: http://www.w3.org/TR/#tr_SPARQL
- Recurso Web en W3C: http://www.w3.org/TR/#tr_RDF