30246 - Web Engineering

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The learning process that is designed for this course is based on the following:

30246 - Web Engineering

Learning activities are focused on working with real systems. Professional lectures, problem-based learning and the development of a project are the teaching strategies used during this course. However, these strategies are difficult to develop without a conceptual basis. Interactive lectures will provide this base.

5.2.Learning tasks

Interactive lectures

The goal of interactive lectures is to provide to students the basis for understanding the importance of Web Engineering and any other specific aspects that cannot be developed in other activities. Students will be encouraged to engage in activities related to the contents of the lecture during the class.

Problem-based learning

The purpose is to apply concepts and techniques presented in the course for solving problems. The goal of problem-based learning activities is the application of knowledge to the design, development and operation of web based systems.

Professional talks

If they are available, some experts will lecture about their daily experience with real web based systems. These talks will allow students to contrast the knowledge acquired during problem-based learning activities and interactive lectures with the experience of experts.

Development of a project

The development of a project is a work group whose specific objective is the development of a Web-based system . It allows the student to acquire experience in working with web standards and technologies currently used by the industry. This activity also allows to develop skills related to teamwork and management of working groups.

5.3.Syllabus

The course syllabus covers the following topics.

- **Client / server systems** (middleware and distributed object systems; specific technologies).
- **Web development** (technologies and standards).
- **Service-oriented architectures** (web services, composition and choreography, technologies and standards, future prospects).

These topics are structured along the course as follows:

- **Fundamentals of Web Engineering**
- **Design of Distributed Information Systems**
- **Technologies and standards for the web**

- **Design and development of Web applications**
- **Architectures for the Web**
- **Future**

5.4.Course planning and calendar

Calendar of sessions and presentation of works

The schedule of the course will be defined by the academic calendar in each of the centers where this course is taught.

The sessions will have an approximate total duration of 60 hours divided between lectures, problems and

laboratory practice. The schedule of all classes and dates practice sessions will be announced in advance in the website of the degree.

The project will be delivered at the end of the term. The deadlines will be available at the beginning of the course.

Student work

The course consists of 6 ECTS credits, of which 2.4 credits correspond to classes and 3.6 credits to autonomous work. Therefore, the dedication of a student in order to achieve the learning outcomes in this course is estimated in 150 hours (60 of the in the classroom and 90 of autonomous work) distributed as follows:

- 55 hours in the classroom (lectures, professional seminars, problem solving activities, and laboratory assignments).
- 75 hours of group work.
- 15 hours of individual study.
- 5 hours in evaluation activities.

5.5.Bibliography and recommended resources

[BB: Bibliografía básica / BC: Bibliografía complementaria]

- Zaragoza:
- [BB] Ejsmont, Artur. Web scalability for startup engineers : tips & techniques for scaling your Web application / Artur Ejsmont . New York [etc.] : McGraw-Hill Education, 2015 [(EINA)]
- [BB] Grigorik, Ilya. High-performance browser networking / Ilya Grigorik . Beijing [etc.] : O'Reilly, 2013 [(EINA)]
- [BB] Hohpe, Gregor. Enterprise integration patterns : designing, building, and deploying messaging solutions / Gregor Hohpe, Bobby Woolf ; with contributions by Kyle Brown ... [et al.] Boston [etc] : Addison-Wesley, cop. 2004
- [BB] Newman, Sam. Building microservices / Sam Newman . Beijing [etc.] : O'Reilly, 2015 [(EINA)]
- [BB] Next generation SOA : a concise introduction to service technology & service-orientation / Thomas Erl ... [et al.] . Upper Saddle River [etc.] : Prentice Hall, cop. 2015 [(EINA)]
- [BB] Pressman, Roger S.. Ingeniería del Software : un enfoque práctico / Roger S. Pressman . - 7ª ed. México D. F. : McGraw-Hill Interamericana, cop. 2010
- [BB] Richardson, Leonard. RESTful web services / Leonard Richardson and Sam Ruby ; [foreword by David Heinemeier Hansson] . 1st ed. Sebastopol (California) : O'Reilly, 2007
- [BB] Web engineering : the discipline of systematic development of web applications / edited by Gerti Kappel ... [et al.] Chichester : John Wiley & Sons, cop. 2006
- [BB] Web services : concepts, architectures, and applications / Gustavo Alonso ... [et al.] . Berlin [etc.] : Springer, cop. 2010
- [BC] Chacon, Scott. Pro Git / Scott Chacon , Ben Straub. - 2nd Edition Apress, 2014
- [BC] Pressman, Roger S. Ingeniería del Software : un enfoque práctico / Roger S. Pressman . 7ª ed. México D. F. :

30246 - Web Engineering

McGraw-Hill Interamericana, cop. 2010
- [BC] Turnquist, G.L. Learning Spring Boot / G L Turnquist Packt Publishing, 2014
- Teruel:
- [BB] Hohpe, Gregor. Enterprise integration patterns : designing, building, and deploying messaging solutions / Gregor Hohpe, Bobby Woolf ; with contributions by Kyle Brown ... [et al.] . Boston [etc] : Addison-Wesley, cop. 2004
- [BB] Pressman, Roger S.. Ingeniería del Software : un enfoque práctico / Roger S. Pressman . 7ª ed. México D. F. : McGraw-Hill Interamericana, cop. 2010
- [BB] Richardson, Leonard. RESTful web services / Leonard Richardson and Sam Ruby ; [foreword by David Heinemeier Hansson] . 1st ed. Sebastopol (California) : O'Reilly, 2007
- [BB] Web engineering : the discipline of systematic development of web applications / edited by Gerti Kappel ... [et al.] . Chichester : John Wiley & Sons, cop. 2006
- [BB] Web services : concepts, architectures, and applications / Gustavo Alonso ... [et al.] . Berlin [etc.] : Springer, cop. 2010