Universitat de les Illes Balears

Academic year	2017-18
Subject	11568 - Web Engineering
Group	Group 1, 2S
Syllabus	C
Language	English

Syllabus

Subject

Name 11568 - Web Engineering
Credits 0.72 in-class (18 hours) 2.28 distance (57 hours) 3 total (75 hours).
Group Group 1, 2S (Campus Extens)
Period Second semester
Language English

Lecturers

Lecturers	Office hours for students					
	Starting time	Finishing time	Day	Start date	End date	Office
Esperança Amengual Alcover eamengual@uib.es	09:30	11:30	Monday	11/09/2017	13/07/2018	111

Context

A crucial aspect in the development of software applications is the development process. Although there is a lot of information about “Web design”, HTML, Java, XML and any other technologies that we need to know in order to develop Web applications, the development process for this kind of software applications has received little attention. Nowadays Web applications have become an essential component of business in today’s world. However, a relevant number of these applications are still developed ad-hoc without taking into account the fundamental principles of analysis, design, validation and change management.

Web engineering is an emerging discipline whose main goal is the establishment and use of systematic, disciplined and quantifiable approaches towards successful development of high-quality, ubiquitously usable Web-based systems and applications.

The goal of this subject is to introduce the Web engineering discipline to provide solutions to the lack of standard methodologies. More specifically, this subject has the following learning objectives:

* Provide a view of the concepts, methods, techniques and current tools for the development of Web Applications.
* Identify the similarities and differences between traditional software development and Web development.
* Analyse the suitability of software engineering traditional concepts, methods, techniques and tools for Web engineering.

Requirements

Recommended

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It is convenient that the student has deep knowledge about traditional software engineering.

Skills

Web engineering intends to contribute to the acquisition of the following skills:

Specific

* CE11-Design and develop systems, applications and computer services in embedded and ubiquitous systems.

Generic

* CG8- Integrate and apply the knowledge acquired and solve problems in new or little-known situations within broader (or multidisciplinary) contexts..

Basic

* You may consult the basic competencies students will have to achieve by the end of the Master's degree at the following address: http://estudis.uib.cat/master/comp_basiques/

Content

Theme content

Ch1. An Introduction to Web Engineering
* Web engineering fundamentals
* From software engineering to Web engineering
* Web engineering best practices

Ch2. The Web engineering development process
* Incremental process flow
* Generic actions and tasks
* Umbrella activities

Ch3. Communication
* Formulation
* Elicitation
* Identifying increments
* Negotiation

Ch4. Planning
* Refining framework activities
* Building the team
* Developing a schdule

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Ch5. Modelling
* Modeling specifics in Web Engineering
* Modeling requirements
* Content modeling
* Hypertext modeling
* Presentation modeling
* Customization modeling

Ch6. Construction and deployment
* Construction principles and concepts
* Deployment
* Construction and the use of components

Ch7. Testing Web applications
* Testing concepts
* Content testing
* User interface testing
* Usability testing
* Compatibility testing
* Component-level testing
* Navigation testing
* Configuration testing
* Security and performance testing

Teaching methodology

Workload

In-class work activities

Modality	Name	Typ. Grp.	Description	Hours
Theory classes	Master classes	Large group (G)	The lecturer will describe the theoretical fundamentals of the different topics covered in the course. In addition, for each topic the lecturer will provide information and the recommended working method and materials that students should use to autonomously study the subject.	8

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Modality	Name	Typ. Grp.	Description	Hours
Practical classes	Practical sessions	Large group (G)	Practical examples and exercises related to the methods, techniques and tools introduced.	4
Assessment	Oral defence of the practical exercises	Small group (P)	The student will do an oral examination at the end of the course in order to defend the work carried out in the practical part of the course.	4
Assessment	Written exam	Large group (G)	The student will do a written examn at the end of the course. This evaluation will assess whether the student has understood the theory and if he or she knows how to correctly use the procedures and techniques that have been presented during the course.	2

At the beginning of the semester a schedule of the subject will be made available to students through the UIBdigital platform. The schedule shall at least include the dates when the continuing assessment tests will be conducted and the hand-in dates for the assignments. In addition, the lecturer shall inform students as to whether the subject work plan will be carried out through the schedule or through another way included in the Campus Extens platform.

Distance education work activities

Modality	Name	Description	Hours
Individual self-study	Individual self-study	Each student will have to devote some time to individually assimilate the theoretical contents introduced by the lecturer.	17
Group or individual self-study	Completion of practical exercises	The students will have to complete practical exercises to improve the theoretical fundamentals introduced by the lecturer.	40

Specific risks and protective measures

The learning activities of this course do not entail specific health or safety risks for the students and therefore no special protective measures are needed.

Student learning assessment

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Oral defence of the practical exercises

Modality	Assessment
Technique	Oral tests **(non-retrievable)**
Description	The student will do an oral examination at the end of the course in order to defend the work carried out in the practical part of the course.
Assessment criteria	The student will do an oral examination at the end of the course in order to present the work carried out in the pratical part of the course.

Final grade percentage: 40% with minimum grade 5

Written exam

Modality	Assessment
Technique	Other methods **(non-retrievable)**
Description	The student will do a written examn at the end of the course. This evaluation will assess whether the student has understood the theory and if he or she knows how to correctly use the procedures and techniques that have been presented during the course.
Assessment criteria	The student will do a written exam at the end of the course. This evaluation will assess whether the student has understood the theory and if he or she knows how to correctly use the procedures and techniques that have been presented during the course.

Final grade percentage: 60% with minimum grade 5

Resources, bibliography and additional documentation

Basic bibliography

1 Gerti Kappel, Birgit Pröll, Siegfried Reich, Werner Retschitzegger. "Web Engineering. The Discipline of Systematic Development of Web Applications". John Wiley and Sons, Ltd., 2006.
2 Emilia Mendes, Nile Mosley. "Web Engineering". Springer. 2006.
3 Roger S. Pressman, David Lowe. "Web Engineering. A Practitioner's Approach". McGraw-Hill HigherEducation, 2009.

Complementary bibliography

Other resources

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