



Universitat de Lleida

DEGREE CURRICULUM **SOFTWARE ARCHITECTURE**

Academic year 2013-14

Subject's general information

Subject name	SOFTWARE ARCHITECTURE
Code	102055
Semester	1st Semester
Typology	Compulsory
ECTS credits	9
Theoretical credits	4.5
Practical credits	4.5
Department	Informàtica i Enginyeria Industrial
Teaching load distribution between lectures and independent student work	Total load: 225h - Lectures (40%) = 90h - Independent student work (60%) = 135h
Important information on data processing	Consult this link for more information.
Language	English
Distribution of credits	GIL IRANZO, ROSA MARIA (5.4) GARCIA GONZALEZ, ROBERTO (3.6)
Office and hour of attention	To be agreed, contact rgil@diei.udl.cat or rgarcia@diei.udl.cat

GIL IRANZO, ROSA MARIA
GARCIA GONZALEZ, ROBERTO

Learning objectives

1.

Competences

GII-IS1. Ability to develop, maintain and evaluate services and software systems that meet all the requirements of the user and behave reliably and efficiently, are affordable to develop and maintain and comply with quality standards, applying the theories, principles, methods and practices of Software Engineering.

GII-IS2. Ability to assess the needs of the client and specify the software requirements to satisfy these needs, making up goals in conflict by finding compromises acceptable within the constraints of cost, time, of the existence of systems already developed and in their own organizations.

GII-IS3. Ability to give solution to the problems of integration on the basis of the strategies, standards and available technologies.

GII-IS4. Ability to identify and analyse problems and to design, develop, implement, verify and document software solutions on the basis of an adequate knowledge of the current theories, models and techniques.

Subject contents

1. Web Applications Specification
 1. Architecture
 2. Analysis
 3. Design
2. Enterprise Application Patterns
 1. Introduction to patterns
 2. Patterns in the context of enterprise applications
 3. Patterns details
 4. Patterns application examples
 5. Technologies for pattern application
3. XML
 1. Fundamentals
 2. XML Schema
 3. XQuery
4. Java Web Applications
 1. Introduction to Web Applications Implementation
 2. Web Applications using Java
 3. Developing and deploying web applications in Google App Engine

Development plan

Week/s	Activity
1-3	Web applications specification
4-6	Enterprise Applications Patterns
7-8	XML Fundamentals and XML Schema
9	1st Midterm Exam (November 15th)

Week/s	Activity
10-11	XML Schema and XQuery
12-14	Java Web Applications
17	Project pre-delivery session
18	2nd Midterm Exam (January 14th)
21	Second-chance Exam

Evaluation

The evaluation is based on the development of a project with two intermediate deliverables and a final one:

- 1st Deliverable: 10% grade
Define project architecture and patterns to be used.
- 2nd Deliverable: 20% grade
Develop XML processing part of the project.
- 3rd Deliverable: 30% grade
Develop the Web application part of the project, integrating all the previous work.

The evaluation is complemented with two exams, one for the first midterm and another for the second:

- 1st Midterm Exam: 20% grade
- 2nd Midterm Exam: 20% grade

The contents evaluated during the first midterm exam are not re-evaluated in the second midterm exam. In case the student does not pass the evaluation taking into account the deliverables evaluations and the midterms exams, there is a final “second-chance” exam where all contents are re-evaluated and accounts for 40% of the final grade.

Bibliography

Main References

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- Conallen, J. (1999). Building Web Applications with UML. Addison Wesley.
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- McLaughlin, B.; Edelson, J. (2006). Java and XML (3rd edition). O'Reilly.
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- Bryan Basham, B., Sierra, K., Bates, B. (2012). Head First Servlets and JSP: Passing the Sun Certified Web Component Developer Exam. O'Reilly Media.

Additional References

- XML Quick Reference, <http://www.mulberrytech.com/quickref/XMLquickref.pdf>
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- Newcomer, E.; Lomow, G. (2004). Understanding SOA with web services. Addison-Wesley.
 - Electronic Version ¹: <http://proquest.safaribooksonline.com/0321180860>

¹ This book is accessible from the Universitat de Lleida network using this link