



Universitat de Lleida

DEGREE CURRICULUM
SOFTWARE ARCHITECTURE

Academic year 2013-14

Subject's general information

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| 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.
 - Electronic Version¹: <http://safari.awprofessional.com/0201615770>
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- McLaughlin, B.; Edelson, J. (2006). *Java and XML (3rd edition)*. O'Reilly.
 - Electronic Version¹: <http://proquest.safaribooksonline.com/059610149X>
- 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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 - Electronic Version¹: <http://proquest.safaribooksonline.com/0321180860>

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