



Universitat de Lleida

DEGREE CURRICULUM
**ARQUITECTURA DEL
PROGRAMARI EMPRESARIAL**

Coordination: GARCIA GONZALEZ, ROBERTO

Academic year 2013-14

Subject's general information

Subject name	ARQUITECTURA DEL PROGRAMARI EMPRESARIAL
Code	102029
Semester	2n Q Avaluació Continuada
Typology	Mandatory
ECTS credits	9
Theoretical credits	4.5
Practical credits	4.5
Coordination	GARCIA GONZALEZ, ROBERTO
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 (and Spanish)
Distribution of credits	GIL IRANZO, ROSA MARIA (4.5) GARCIA GONZALEZ, ROBERTO (4.5)
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

- To present aspects of Software Engineering in the context of organizations through a series of patterns for business applications and their architecture.
- To have a global vision of the existent technologies to implement business applications using the previous patterns and architectures, especially XML, the Web and Web Services.
- To put into practice the previous concepts and technologies through the development of a Web application project including Java, XML and SOAP.

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 and Services
 1. Introduction to Web Applications Implementation
 2. Web Applications using Java
 3. Developing and deploying web applications in Google App Engine
 4. Web Services, WSDL and SOAP
 5. Developing and deploying web services in Google App Engine

Development plan

Week/s	Activity
1-2	Web applications specification
3-5	Enterprise Applications Patterns
6-8	XML, XML Schema and XQuery
9	1st Midterm Exam
10-12	Java Web Applications
13-14	Web Services
15	Project pre-delivery session
16-17	2nd Midterm Exam
19-20	Second-chance Exam

Evaluation

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

- 1st Deliverable: 30% grade
Develop XML processing part of the project.
- 2nd 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 (written exam): 20% grade
- 2nd Midterm Group Oral Exam (2nd deliverable defense): 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

- Fowler, M.; Rice, D. (2003). Patterns of Enterprise Application Architecture. Addison-Wesley.
- Conallen, J. (1999). Building Web Applications with UML. Addison Wesley.
 - Electronic Version¹: <http://safari.awprofessional.com/0201615770>
- Hunter, D., Rafter, J., Fawcett, J., Vlist, E. van der, Ayers, D., Duckett, J., Watt, A., et al. (2007). Beginning XML, 4th Edition. Indianapolis, IN: Wrox.
- Vlist, E. van der. (2002). XML Schema: The W3C's Object-Oriented Descriptions for XML. Sebastopol, CA: O'Reilly Media.
- Walmsley, P. (2007). XQuery. Sebastopol, CA: O'Reilly Media.
- 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.
- Newcomer, E.; Lomow, G. (2004). Understanding SOA with web services. Addison-Wesley.
 - Electronic Version¹: <http://proquest.safaribooksonline.com/0321180860>

Additional References

- XML Quick Reference, <http://www.mulberrytech.com/quickref/XMLquickref.pdf>

- Larman, C. (2002). UML y Patrones. Prentice-Hall (segunda edición).
- Larman, C. (2005). Applying UML and Patterns. Prentice-Hall (third edition).
- Cummins, F. (2002). Enterprise Integration: An Architecture for Enterprise Application and System Integration. Wiley Publishing.
- Sommerlad, P.; Stal, M. (1996). Pattern-Oriented Software Architecture, Volume 1: A System of Patterns. John Wiley & Sons.
- Gamma, E.; Helm, R.; Jonson, R.; Vlissides, J. (2003). Patrones de Diseño. Elementos de software orientado a objetos reutilizable. Addison-Wesley.
- Gutiérrez Gallardo, Juan Diego. (2005). Manual imprescindible de XML. Anaya Multimedia.
- Ray, E.T. (2003) Learning XML, 2nd Edition. Sebastopol, CA: O'Reilly Media.
- Harold, E. R.; Jeans, W. S. (2004). XML in a Nutshell, 3rd Edition. Sebastopol, CA: O'Reilly Media.
- Walmsley, P. (2002). Definitive XML Schema. Upper Saddle River, NJ: Prentice Hall.
- Brundage, M. (2004). XQuery: the XML query language. Boston, MA: Addison-Wesley Professional.
- Martín Quetglás, Gregorio. (2005). Curso de XML : introducción al lenguaje de la Web. Pearson educación.
- Harold, Elliotte Rusty. (2005). XML. Anaya Multimedia.
- Esposito, Dino. (2003). Programación en XML para Microsoft .NET. McGraw-Hill.
- Keogh, Jim. (2003). J2EE : manual de referencia. McGraw-Hill.
- Cauldwell, P.; Charla, R.; Chopra, V. (2002). Servicios Web XML. Anaya Multimedia.
- McGovern, J.; Tyagi, S.; Stevens, M. E.; Mathew, S. (2003). Java Web Services Architecture. Morgan Kaufmann.
- Monson-Haefel, R. (2004). J2EE Web services. Addison-Wesley.

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