

Communication Software 2010/11

Course Presentation

Author: *Simon Pickin*



Contents

- Brief description
- Objectives
- Lecturers
- Programme
- Practical assignments
- Presentation
- Bibliography
- Assessment

Brief Description

Brief description	
Year:	XXXXXXXX
Credits:	4.5 (3 theory + 1.5 practical assignments) = 3.5 ECTS
Term:	XXXXXXXX
Hours/week:	3
Timetable:	Tuesdays 13:00-14:00 Thursdays 11:00-13:00
Group:	XXXXXXXX
Lecture room:	XXXXXXXX
Laboratory:	XXXXXXXX
Lecturer:	XXXXXXXX (course coordinator XXXXXXXX)
Web page:	XXXXXXXX
Spanish course:	XXXXXXXX XXXXXXXX

Course Objectives

- The objective of this module is to introduce the student to the basic aspects of Web technologies and applications.
- The students should acquire knowledge of, and competence in, the following areas
 - basic notions of software engineering and analysis and design techniques of communication software systems
 - concepts of system integration and some existing software environments which enable such integration, in particular, Java EE
 - technologies for the development of distributed applications, in particular, web applications

Lecturers

- XXXXXXXX
 - course coordinator
 - lectures and lab sessions
 - contact details
XXXXXXX

Programme (1/3)

- **Note:** *though this may not be the ideal way to teach this material in the “Bologna” context, the slides presented by the lecturer are designed to be “dual purpose” in the sense that they serve as both support for the presentation of the different topics and as lecture notes*
- **Part I. Introduction**
 - software engineering concepts
 - UML2 by example
 - component and multi-tier architectures
 - integration of corporate applications: the Java EE platform

Programme (2/3)

- **Part II.** The data tier in the Java EE platform
 - review of relational model and SQL
 - database connectivity with the JDBC API
- **Part III.** The web tier in the Java EE platform (also known as the presentation tier)
 - Servlets and Java ServerPages (JSPs)
- **Part IV.** The data tier in the Java EE platform revisited
 - object-relational mapping (ORM)
 - Java persistence technologies
 - the Java Persistence API (JPA)

Programme (3/3)

- **Part V.** The application tier in the Java EE platform (also known as the business tier)
 - Enterprise JavaBeans v3, in particular, EJB3 session beans
 - EJB2 vs. EJB3
- **Part VI.** Other popular Web-application technologies
 - dynamic languages
 - recent developments in client-tier technologies
 - extensions to / evolutions of the Java EE platform
 - ...

Practical Assignments

- To be worked on in the lab sessions
- After having covered the corresponding theory:
 - P1: data tier (SQL and JDBC)
 - P2: presentation tier (servlets and JSPs)
 - P3: business tier (the JPA and EJBs)
- To be carried out in pairs
 - why? see “extreme programming” practice: “pair programming”
- Method of assessment:
 - submission (with penalty for late submission)
 - P1 before starting P2
 - P2 & P3 before the Christmas break
 - personal interview to check understanding

Student presentations

- Last part of the course (part V) via student presentations:
 - preparation of presentations
 - delivery of presentations to rest of class
- To be carried out in groups
- Method of assessment
 - via submission (of slides in PowerPoint, OpenOffice, LaTeX),...
 - via delivery of the presentation to colleagues
 - via multiple-choice questions (only check basic understanding)
 - possibly via peer-assessment (depending on number of students)

Main bibliography

- *The unified modeling language user guide*. Grady Booch. 2nd ed. Addison Wesley, 2005.
- *Using UML: software engineering with objects and components*. Perdita Stevens. 2nd ed. Addison-Wesley, 2006.
- *Core Servlets and JavaServer Pages, vol 1*, 2nd edition. Marty Hall and Larry Brown. Prentice Hall, 2003.
- *Core Servlets and JavaServer Pages, vol 2*, 2nd edition. Marty Hall, Larry Brown and Yaakov Chaikin. Prentice Hall, 2007.
- *Persistence in the Enterprise: A Guide to Persistence Technologies*. Roland Barcia; Geoffrey Hambrick, Kyle Brown, Robert Peterson, Kulvir Singh Bhogal. IBM Press, 2008.
- *Pro EJB3. Java Persistence API*. Mike Keith and Merrick Schincariol. Apress, 2006.
- *Enterprise JavaBeans 3.0*, 5th edition. Bill Burke, Richard Monson-Haefel. O'Reilly, 2006.
- See also the collection of links on the course web page:
XXXXXXX

Assessment

- Based on:
 1. Final examination
 - pass ≥ 5.0
 - weighting in final grade (exam + presentation) = 2/3
 2. Practical assignments
 - must work correctly **in the lab environment**
 - weighting in final grade = 1/3
 - mark for each one is weighted according to importance
- To pass the course the student must pass the two parts
 - the final examination
 - the practical assignmentsseparately.

Motivation

- Good immediate job prospects should certainly not be the *only* motivation for choosing degree courses
 - see, for example, Tanenbaum's Golden Rule #1
<http://www.cs.vu.nl/~ast/talks/cse-97/cse-97.pdf>
- Nevertheless, you may find it instructive to search for keywords such as:
 - *UML*
 - *Java EE* or the older term *J2EE*
 - *Servlets, JSP*
 - *EJB, JPA, EJB3*on web sites such as the following one (for Spain):
<http://www.infojobs.net/>