

Experiences with Teaching Software Engineering using JCSE Materials

Dragan Bojić
University of Belgrade
Faculty of Electrical Engineering
bojic@etf.bg.ac.yu

Course Organization

- Mandatory course at 4th (of 5) year of undergraduate studies
- Duration 1 semester
- 2+1 hrs/week lectures+exercises
- Mandatory team based project in the form of several homeworks
- Scoring: 50% theory, 50% project work

School year 2003/04



- 133 students enrolled in course
- Lectures: doc. Dr Vladimir Blagojević
 - Mostly based on Sommerville's book
- Exercises/Project tutoring: myself

School Year 2004/05



- 150 students enrolled
- Lectures and project tutoring: myself
- 13 x 1.5 LH theory, 13 x 1.5 LH exc&tut.
- Using JCSE materials, and also some of previously developed lectures

Lecturing Topics

- **JCSE topics included (short version of the course):**
 - T1 What is Software Engineering?
 - T3 Software Process Models (slightly modified)
 - TA1 Rational Unified Process
 - T2 Quality Criteria for Software Products
 - T4 Basic concepts and sw. development documents
 - T6 Cost Estimation
 - T22 Maintenance
 - T21 Metrics and T23 Reverse Engineering – if time permits
- **Non JCSE materials:**
 - Project Management: intro, planning, scheduling, risk management (Sommerville)
 - Managing People (Sommerville)
 - Requirements management (RUP)
 - UML Modeling of Web Applications (CACM 99, Conallen)
 - The Testing Process (adapted from RUP)
- **JCSE topics not included**
 - Because they are covered by other courses:
 - OO Analysis and Design – in the OOAD course
 - Data Oriented View - in Information Systems Development Course
 - JCSE T19 Systematic Testing - in the course on Systems Programming, along with white box and black box methods

Project Assignments

- **General notes:**
 - Teams of 3-4 people; team roles defined as needed
 - Several assignments of 1-2 week duration each
 - For each assignment: introductory lecture with explanations, a task specification and guidelines and templates for required artifacts
 - Inter-team reviews to lessen work for teacher
 - Oral examination at the end of the project

Project Assignments (...)

- Activities:
 1. Choosing a problem and producing (RUP) Vision document
 - By Team Leader, consulting other team members
 2. Producing Use Case Specifications and an UI Prototype
 - All team members, work divided according to Vision ch. 5 functional requirements
 3. Learning to use Config. Management System
 - Configuration Manager Role – CM administration
 - All team members to introduce themselves to using CM system

Project Assignments (...)

- Activities:
 4. Formal Review of previously produced artefacts
 - All team members (divided in roles: inspector, moderator, etc), for other team, later updating docs
 5. UML modeling of the application
 - All team members, for their use case spec. (UML not explained briefly, just strictly following the given template)
 6. Data Modeling and DB Administration
 - Database Designer/Administrator – again briefly explained, taking into account knowledge from another course
 - Overlap with Implementation activity

Project Assignments (...)

- Activities:
- 7. Project planning, identifying risks, status report
 - Project Manager to produce plan and risk list
 - Overlap with Implementation
- 8. Implementation
 - All team members, one is given role as an Architect and Integrator
 - Just a prototype with few most important use cases
- 8. Testing
 - All team members, specifying and conducting functional tests

Students questionnaire for 2003/04

Lecturer	Course ID	Kind	Number of filled quest	Attendance to classes (%)
BOJIĆ DRAGAN	RI4ST	Ex	132	65

STUDENT GRADING (1-10)

Q1 Quality of lecturing

Q2 Are the lectures helpful in exam preparation?

Q3 Were lectures held regularly?

Q4 Is the lecturer well prepared for the class?

Q5 Does the lecturer give answers to student questions?

Q6 Does an adequate literature exist?

Q7 General impression about the lecturer

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Mean value
8.58	8.82	9.20	8.98	9.79	4.13	8.06	8.22