Software Engineering courses at FINKI

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Software Engineering at FINKI

- Two separate courses were inherited from former studies
  - From Institute of Informatics (JCSE)
  - From Faculty of Electrical Engineering
- In the summer semester 2013/14, both courses had to join together
- Basic book: Pressman, 7th edition
- Additional book: Somerville, 9th edition in Macedonian

Unification of both courses

- Basic intention: to modify existing JCSE materials to be closer to Pressmans book
- We changed our course, colleagues decides to stick to their original one
- Consequence: two groups of students attending two different courses with the same name, and the same ECTS credits

Joint home page of both courses

JCSE at FINKI for students who enrolled the course with us

- Most topics were covered as they existed in the last version of JCSE
- Some topics, particularly those connected with structured paradigm were offered as optional
- The topics connected with object-oriented paradigm were either completely covered, or slightly extended

Completely same topics + one added topic

- Topic 1: What is software engineering? (slightly extended with local job offers)
- Topic 2: Quality criteria for software products
- Topic 3: Software process models (slightly extended with slides announcing agile development)
- Topic 3a: Agile development (taken from Pressman)
- Topic 4: Basic concepts for the description of software development

Completely same topics (2)

- Topic 5: Results of the ‰Analysis and Definition+phase
- Topic 6: Cost estimation
- Topic 7: Modeling and product models
- Topic 8: Basic concepts / functional view
- Topic 12: Basic concepts of state oriented view
- Topic 12.5: Object oriented views (extended version)

Completely same topics (3)

- Topic 13: Basic concepts of scenario oriented view
- Topic 14a: Object-oriented analysis (a-f)
- Topic 14b: Object-oriented analysis (g-h)
- Topic 15: Formal specifications (presented at the end of the course)
- Topic 16: Overview of design phase
- Topic 18: Object-oriented design

Completely same topics (4)

- Topic 19: Implementation
- Topic 20: Introduction to testing
- Topic 21: Functional testing
- Topic 22: Structured testing
- Topic 23: Software maintenance
- Topic 24: Maintenance (intended, but not covered due to many holidays on Fridays)

Omitted topics (optional)

- Topic 9: Basic concepts of data oriented view
- Topic 10: Basic concepts of rule oriented view
- Topic 11: Structured analysis (during lecturing, Seminar organization example slides were presented)
- Topic 17: Structured design

Grading system

- Two midterm exams + four assignments
- Each midterm exam weighs 100 points
- Three assignments weigh 40 points each, the last weighs 80 points

- Midterm exam 1: Topic 1 - Topic 14b
- Midterm exam 2: Topic 15 - Topic 23

The project

- Real-life project (object-oriented) consisting of 37 use cases
- Technical documentation of system and user requirements (30 pages) of the project was offered to students
- Two parts were omitted:
  - use case diagrams
  - activity diagrams

Assignments

1. Selection of 10 use cases, and creation of their use case diagrams
2. Cost estimation of selected use cases
3. Activity diagrams for selected use cases
4. Selection of three functionalities, and their functional testing using CTM method + implementation of classification tree using CTE tool* and definition of minimum set of test cases**

- http://www.berner-mattner.com/en/berner-mattner-home/products/cte-xl/
- ** http://www.systematic-testing.com/functional_testing/cte_main.php?cte=1

Classification Tree Editor CTE XL

Conclusion

- We omitted structure programming topics, slightly changed the slides, and added one new topic
- We introduced a completely new case study given to students in a textual format
- Most students managed to successfully finish the course with midterm exams and with team projects, which were publicly defended
- We are happy with their results

Thank you for your attention

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Questions ?