

Experiences in teaching SE course

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The presentation is about:

- A short overview of the Introduction to SE course
- Course as a part of the JCSE project – questionnaire overview
- Experiences in practical part of the course
- Cooperation with IT companies
- Plans for improvements of our course
- Some other experiences gained after the three years of teaching the course

„Introduction to SE” and „SE” courses

- Part of the JCSE project since 2009
- Slight program changes:
- Introduction to SE course
 - Elective course at the 3rd year of undergraduate study
- SE course
 - Mandatory course at the 4th year of Business Informatics graduate study
 - Elective course at the 4th year of Information and Communication Systems graduate study
 - Elective course at the 4th year of graduate study in double major program



„Introduction to SE” course

- Duration of the course: 1 (winter) semester
- Weekly: 2 hours of lectures and 2 hours of practical part
- 32 students enrolled
- JCSE materials used during lectures
- Slides and lectures in Croatian



Lecturing topics

- What is Software engineering
- Quality Criteria for Software Products
- Software Process Models
- Results of the „Analysis and Definition“ Phase
- Basic Concepts of the Functional View
- Basic Concepts of the Data Oriented View
- Overview of the Design Phase
- Implementation: Programming Style and Methodology
- Systematic testing



Guest speakers

- Software experts as guest speakers
- Software experts from a computer company:
 - New technologies in software development
 - The role of users in software development teams
 - User requirements analysis
 - Customer support department
 - Testing
 - Collaboration in teams



Questionnaire

- After the classes – questionnaire
- Original questions were used
- 21 students filled in the questionnaire



Contents of the lecture

Question	Our rank	Optimum rank
1. Amount of knowledge offered (too few=1, too much=5)	3,3	3
2. Contents of the lecture (too easy=1, too difficult=5)	3	3
3. Course well-structured (unstructured=1, very well=5)	4,1	5
4. Any pre-knowledge needed (few=1, much=5)	2,8	3
5. Slides in English language - parts only (no problem=1, big problem=5)	1,6	1



Style of the lecture

Question	Our rank	Optimum
1. Lecturer familiar with the contents (not so much=1, very well=5)	4,5	5
2. Lectures well prepared (not so much=1, very well=5)	4,6	5
3. Lecturer engaged (not so much=1, very well=5)	4,6	5
4. Lecturer willing to answer questions (not so much=1, very well=5)	4,7	5
5. Presentation of the lecture (too slow=1, too fast=5)	3,3	3
6. Presentation style encourages to follow the lecture (not so much=1, very well=5)	3,2	5

Using media

Question	Our rank	Optimum
1. Adequate amount of information on the slides (not so much=1, very well=5)	4	5
2. Well-structured and clearly arranged slides (not so much=1, very well=5)	4,2	5
3. To get keywords only after lectures (no problem=1, big problem=5)	2,9	1



Benefit of the lecture

Question	Our rank	Optimum
1. A lot of new things learned (not so much=1, much=5)	3,7	5
2. Contents of the lecture is useful (not so much=1, completely =5)	4	5
3. Important to you that the course is internationally supported and recognized (not so much=1, much=5)	3,2	5
4. Your overall ranking of the lecture (bad=1, very well=5)	4,3	5



Plans for improvement

- More examples from software development teams
- More guest speakers
- More contact with „real life software development” – even some practical work for a few days/weeks in software industry environment
 ---> Software engineering course



SE course – lecturing topics plan

- Configuration management
- People management and team organization
- Cost estimation
- Project planning and control
- Requirements engineering
- User interface design
- Software maintenance



Practical part of the course

- It was performed in two separated groups.
 - Each group had 16 students.
- Attending the practical part was required.
- Activity of the students was monitored.
- The students were highly motivated for the discussion during the class.



Topics – practical part 1

- Fast recall of **Mathematical logic (Boolean algebra)**
- **Programming logic**
 - using tasks of different difficulty, students learned the steps of programming
 - Algorithm – described in two ways:
 - Words – pseudocode
 - Graphical - flowchart
 - Drawn in Microsoft Visio



Topics – practical part 2

- **Program code**
 - using a selected CASE tool with a code generator embedded
 - Code was written in Clarion
 - Clarion - CASE tool which enables rapid application development



Exams of the practical part

- Students wrote two short exams
- First exam
 - based on Mathematical logic and Programming logic.
 - four tasks in which students had to write pseudocode and/or draw a flowchart
 - written on the paper
 - Average mark of the exam: 48,35%
- Second exam
 - verifying the Program code and Programming logic.
 - Students had to build an application with an interface in which they solve 4 tasks
 - exam was handled using computers in Clarion environment
 - Average mark of the exam was: 51,43%



Final mark 1

- Final mark is based on:

– written examination mark (lectures)	(25%)
– written examination mark (practical)	(40%)
– interest shown	(5%)
– final paper	(30%)
- Written exam – questions with open answers
- The average final mark: 49,05 %



Final mark 2

- At this moment, students' marks are:

Mark	Percentage
A	13%
B	6%
C	28%
D	0%
E	25%
F	28%



Conclusion

- Good opportunity for new experience each year
- Aiming for constant improvement
- We are satisfied with the results that students achieved in this course
- We are very happy to be a part of this project



- Thank you for your attention!

- Questions?

