Course Overview

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Course Language

- Slides are (mostly) in English
  - Speaking in Portuguese
- Exams are in Portuguese
  - You may answer in Portuguese or English as you wish
- Exercise, papers, final project, etc. might be in English or in Portuguese
  - You can do them either in English or in Portuguese as you wish

Bibliography

- M. Lanza e R. Marinescu. **Object-Oriented Metrics in Practice**. Springer, 2006.
- I. Sommerville. **Software Engineering**, 10th Edition. Pearson, 2016.
- R. Pressman, B. Maxim. **Software Engineering: A Practitioner's Approach**, 8th Edition. McGraw-Hill Education, 2014.
- C. Wohlin et al. **Experimentation in Software Engineering**, Springer. 2012.
- A. Koscianski, M. Soares, **Qualidade de Software**, 2a Edição. Novatec, 2007.
- Other books and papers.

Course Website and Email

- All course material and agenda are available in the course website
  - Link “Teaching (pt)” in my webpage

http://www.dcc.ufmg.br/~figueiredo/disciplinas

- Email: **sqm.dcc@gmail.com**

Assessment Criteria

- Undergraduate Students
  - 1st exam: 30 points
  - 2nd exam: 30 points
  - Team work: 25 points
  - Exercises: 5 points
  - Papers (summary): 10 points

Assessment Criteria

- Graduate Students
  - 1st exam: 15 points
  - 2nd exam: 15 points
  - Team work: 15 points
  - Exercises: 5 points
  - Paper presentation: 5 points
  - Papers (summary): 5 points
  - Final Project: 40 points

Dates of Exams

- 1st Exam
  - 17 of April
- 2nd Exam
  - 12 of June
- 3rd Exam (optional)
  - 19 of June

Dates may change

3rd Exam (optional)

- The 3rd exam is allowed to students with at least 30 points (sum of all activities)
  - It replaces 1st or 2nd exam
  - 15 pts (Graduate) or 30 pts (Undergrads)

- Which lectures to study?
  - If it replaces 1st exam: Lectures 1 to 12
  - If it replaces 2nd exam: Lectures 13 to 26

Presentation of Papers

- Each graduate student has to present a paper in the course
  - Each presentation should last between 20 to 30 minutes
- The list of papers is in the website
  - Allocation criteria is FIFO
  - Deadline for choosing your paper is **01/04**
- If you want to present a paper not in the list
  - You have to sent it to me by email
  - I have to approve it

Attendance

- Students who score 60 points or more are approved in the course
  - Regardless of their attendance to lectures
- Students who do not achieve 60 points have their attendance registered in the university system

Exercises

- We expect to have some exercises in this course
- We may have exercises in laboratory
  - Booked ICEx 2012 every Wednesday
  - If you arrive in the classroom and nobody shows up, go to the lab

Team Work (TW)

- Groups from 4 to 5 members
  - Max. two graduate students per group
- Deadline for group creation: **18/03**
- Tasks of the team work
  - To create a plan for quality evaluation of a software project
  - To apply the plan of evaluation
  - To propose a plan to improve the quality of the software project

Course Agenda

Main Topics (Part 1)

- Introduction to Software Quality and Measurement
- Software Product Metrics
- Bad Smells and Refactoring
- Thresholds and Detection Strategies

1st Exam

Main Topics (Part 2)

- Software Visualization
- Software Patterns
  - Programming Patterns (Idioms)
  - Design and Architecture Patterns
- Software Engineering Principles
- Software Process Improvement

2nd Exam

Preliminary Agenda (Part 1)

1. Course Overview
2. Introduction to SQM
3. Team work instructions
4. Measurement and GQM
5. Metric Statistics
6. Bad Smells and Refactoring

Preliminary Agenda (Part 1)

7. Thresholds and Detection Strategies
8. Exercise
9. Concern-Sensitive Strategies
10. Team work: 1st iteration
11. Review for the 1st Exam
12. **1st Exam**

Preliminary Agenda (Part 2)

13. Software Visualization
14. Paper presentation
15. Team work: 2nd iteration
16. Design Patterns
17. Programming and Architecture Patterns
18. Software Engineering Principles
19. Team work: final presentation

Preliminary Agenda (Part 2)

20. Software Process
21. Paper Presentation
22. Software Project Estimations
23. Exercise
24. Software Process Improvement
25. Review for the 2nd Exam
26. **2nd Exam**

Preliminary Agenda (Part 3)

27. Review for the 3rd Exam
28. **3rd Exam**
29. Workshop: Final Project Presentation
30. Workshop: Final Project Presentation

Next Lecture

- Introduction to Software Quality and Measurement
- Ian Sommerville. **Software Engineering**, 10th Edition. 2016.
  - Chapter 24 - Quality Managment