Course Introduction

Eduardo Figueiredo

http://www.dcc.ufmg.br/~figueiredo
reuso.software@gmail.com

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Course Language

- Slides are in English
  - Speaking in Portuguese
- Exams are in Portuguese
  - You may answer in English if you wish
- Exercise, group work, final project, etc. might be in English or in Portuguese
  - You can answer either in English or in Portuguese as you wish

Bibliography (many)

- P. Clements, L. Northrop. **Software Product Lines: Practices and Patterns**. Addison-Wesley, 2001.
- I. Sommerville. **Software Engineering**, 9a. Ed., 2011.
- R. Laddad. **AspectJ in Action**. 2nd Ed. Manning, 2010.
- S. Mellor, K. Scott, A. Uhl, D. Weise. **MDA Distilled**. Addison-Wesley, 2004.
- K. Pohl, G. Bockle, F. Linden. **Software Product Line Engineering: Foundations, Principles and Techniques**. Springer, 2005.
- C. Szyperski, **Component Software: Beyond Object-Oriented Programming**, Addison-Wesley, 1998.
- Research papers... etc.

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: **reuso.software@gmail.com**

Assessment Criteria

- Undergraduate Students
  - 1st exam: 30 points
  - 2nd exam: 30 points
  - Group Work: 20 points
  - Exercises: 10 points
  - Participation in papers: 10 points

Assessment Criteria

- Graduate Students
  - 1st exam: 15 points
  - 2nd exam: 15 points
  - Group Work: 10 points
  - Exercises: 10 points
  - Paper presentation: 5 points
  - Participation in papers: 5 points
  - Final Project: 40 points

Tentative Dates

- 1st Exam
  - 28 of April
- 2nd Exam
  - 09 of June
- Team Work (TW)
  - Oral Presentation: 31/05 and 02/06
  - Final Submission: 11 of June (by email)
- Final Project (Graduate Students)
  - Oral Presentation: 21/06 and 23/06
  - Final Submission: 11 of June (by email)

Dates may change

3rd Exam (optional)

- The 3rd exam is allowed to students with at least 40 points (sum of all activities)
  - It replaces 1st or 2nd exam
  - 15 pts (Graduate) or 30 pts (Under)
  - Expected Date: 16 of June
- Which lectures to study?
  - If it replaces 1st exam: Lectures 1 to 14
  - If it replaces 2nd exam: Lectures 15 to 28

Team Work (TW)

- Groups of up to 5 members
  - No more than two graduate students
- Tasks
  - To implement a software system applying reuse strategies (we will see in the course)
  - To write a short report about the work
  - To present the results for your classmates

Final Project (Graduate only)

- Graduate students have to do it alone
- Tasks
  - To investigate a topic related to software reuse (research)
  - To write a short report with up to 15 pages (similar to a paper; i.e., it does **not** need cover, table of contents, list of figures, etc.)
  - To present the results for your classmates

Paper Presentation

- 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 31/03
- 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

Laboratory

- Sometimes, we may have lectures in laboratory
  - Booked: ICEx 2011 and 2012
- The first time we expect to go to lab is 29 of March
  - If you arrive in class and nobody shows up, go to the laboratory

Topics for the 1st Exam

- Introduction to Software Reuse
- Patterns: Design, Architecture, and Idioms
- Software Product Lines (SPL)
- Aspect-Oriented Software Development (AOSD)

Topics for the 2nd Exam

- Model-driven Development (MDD)
- Component-based Software Engineering (CBSE)
- Feature-Oriented Programming (FOP)

Preliminary Agenda

1. Course Introduction
2. Techniques for Software Reuse
3. Design Patterns
4. Architectural Patterns
5. Programming Idioms
6. Software Product Lines
7. **Exercise**

Agenda Preliminar (Parte A)

8. TW: Software Engineering Education
9. **Exercise**
10. **Exercise**
11. Aspect-Oriented Programming
12. **Paper Presentation**
13. **Exercise**
14. Review to 1st exam
15. **1st Exam**

Agenda Preliminar (Parte B)

16. Model Driven Development
17. Component-based Software Engineering
18. Feature-Oriented Programming
19. **Exercise**
20. Hybrid Approaches
21. **Paper Presentation**
22. **Paper Presentation**

Agenda Preliminar (Parte B)

23. **Team Work: Oral Presentation**
24. **Team Work: Oral Presentation**
25. Review to 2nd exam
26. **2nd Exam**
27. Review to 3rd exam (optional)
28. **3rd Exam (optional)**
29. **Final Project: Oral Presentation**
30. **Final Project: Oral Presentation**

Next Lecture

- Introduction to Software Reuse
- Bibliography
  - Ian Sommerville. Software Engineering, 9th Edition. 2011. (Chapter 16)