



# Course Overview

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# [ Main Literature ]

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- C. Wohlin et al. Experimentation in Software Engineering, Springer. 2012.
  - Chapters 1 to 11 (Part I and Part II)
- Research Papers

# [ Additional Literature ]

- I. Sommerville. Software Engineering, 9th Edition. Pearson, 2010.
- M. Lanza e R. Marinescu. Object-Oriented Metrics in Practice. Springer, 2006.
- Natalia Juristo and Ana M. Moreno. Basics of Software Engineering Experimentation, 1st edition. Springer, 2001.
- More...

# Assessment Method

- Two Exams: 15 points each
  - 1st Exam: 09 May
  - 2nd Exam: 13 June
- Paper Presentation: 10 points
- Group Work: 10 points
- Exercises / Participation: 10 points
- Final Project: 40 points

# [ Course Website ]

- Slides and agenda are available in the course website
  - Link “Teaching (pt)” in my webpage
  - “Empirical Software Engineering”

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

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

# [ Laboratory ]

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- Sometimes, we may have lectures in laboratory
  - To book: ICEX 2011 or 2012
- Example
  - To simulate experiments in laboratory

# [ Group Work (GW) ]

- Students are going to be divided into two groups (G1 and G2)
  - Group size depends on class size
  - Maximum 3 students per group
- Illustrative small experiment
  - To plan an experiment (or quasi-experiment)
  - To run it
  - To present the results
  - To report in a small 5-page document

# Important Dates (GW)

	Deadline?	How?
Form Group	Up to 16/04	Send by email
Planning	02/05	Present in class
Run Experiment	As soon as possible	In lab or offline
Present Results	21/05	Present in class
Send Report	Up to 21/05	Send by email

# [ Final Project ]

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- You have to do it alone
  - It can be aligned to your research interest
- Main tasks
  - To plan and run a case study, survey, literature review, or experiment
  - To present the results in a workshop
  - To report in a 15-page document (similar to a research paper)

# [ Important Dates (Final Project ) ]

- 02/05 (the sooner, the better)
  - Register topic and abstract in EasyChair
- 16/06
  - Submit final report via EasyChair
- 18/06 to 22/06
  - Peer reviews via EasyChair
- 18/06, 20/06 and 25/06
  - Oral presentation (workshop)

# [ Classes on Saturday ]

- Since we had no class in April, let's have classes on 3 Saturdays
- Tentative dates
  - 14/04, 05/05, and 19/05
- What time?
  - 09:00 to 12:00 hrs (morning)
  - 14:00 to 17:00 hrs (afternoon)

# [ Topics for the 1st Exam ]

- Empirical Strategies
  - Surveys, case studies, experiments
- Measurement
  - Product metrics and OO Metrics
- Bad Smell and Detection Strategies
- Systematic Literature Reviews

# [ Topics for the 2nd Exam ]

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- Case Studies
- Experiment Process
- Scoping and Planning
- Operation and Analysis

# [ Preliminary Agenda ]

1. Course Outline
  2. Introduction to Empirical Studies
  3. Empirical Strategies
  4. Measurement
  5. Bad Smells and Metric Thresholds
  6. Paper Discussion
- } Saturday

# [ Preliminary Agenda ]

7. Detection Strategies
8. Metrics for Separation of Concerns
9. Exercise (illustrative experiment)
10. Illustrative experiment Discussion
11. **Group Work: Planning**
12. Systematic Literature Reviews — Saturday

# [ Preliminary Agenda ]

13. Paper Discussion — Saturday
14. Review to 1st Exam
15. **1st Exam**
16. Case Studies
17. Experiment Terminology
18. Experiment Process — Saturday

# [ Preliminary Agenda ]

19. Paper Discussion — Saturday
20. **Group Work: Results**
21. Experiment Scoping
22. Planning
23. Experiment Operation
24. Analysis and Interpretation

# [ Preliminary Agenda ]

25. Hypothesis Testing
26. Review to 2nd Exam
- 27. 2nd Exam**
28. Final Project Workshop
29. Final Project Workshop
30. Final Project Workshop

# [ Next Lecture ]

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- Motivation and Introduction to Empirical Strategies
- ESE book
  - Chapter 1
- Paper
  - Andreas Zeller, Thomas Zimmermann, Christian Bird. “Failure is a Four Letter Word”. PROMISE 2011.