Configuration Management Course Outline

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Introductions
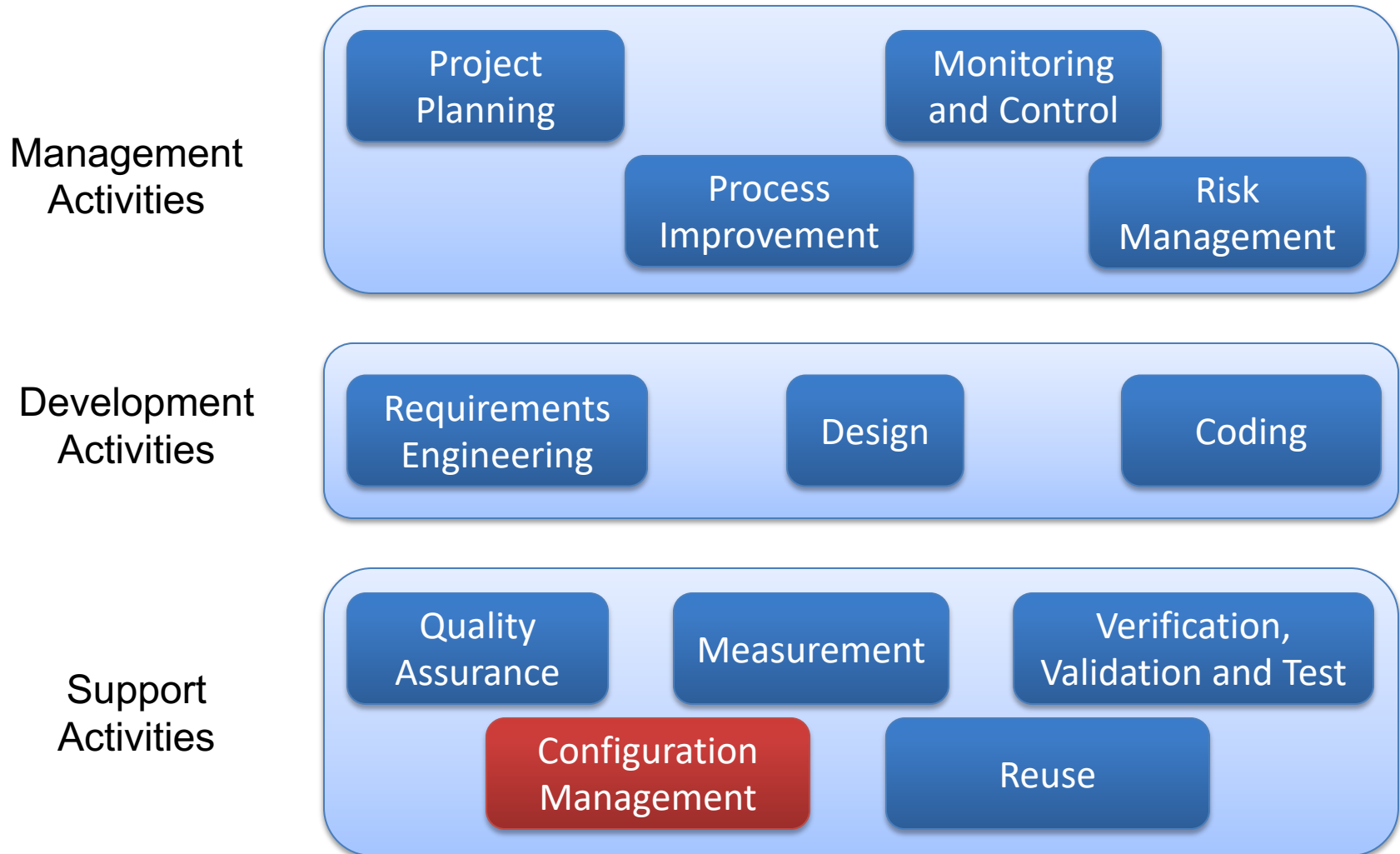
- Who am I?
  - Leonardo Murta
  - http://www.ic.uff.br/~leomurta
- Who are you?
  - Name? Level (BSc, MSc, DSc)?
  - Job? Internship?
  - Research Area? Thesis topic? Advisor?
  - Previous experience with Configuration Management?
  - What you expect for this course?

What is Configuration Management?

"CM is a discipline for **controlling the evolution** of software systems"
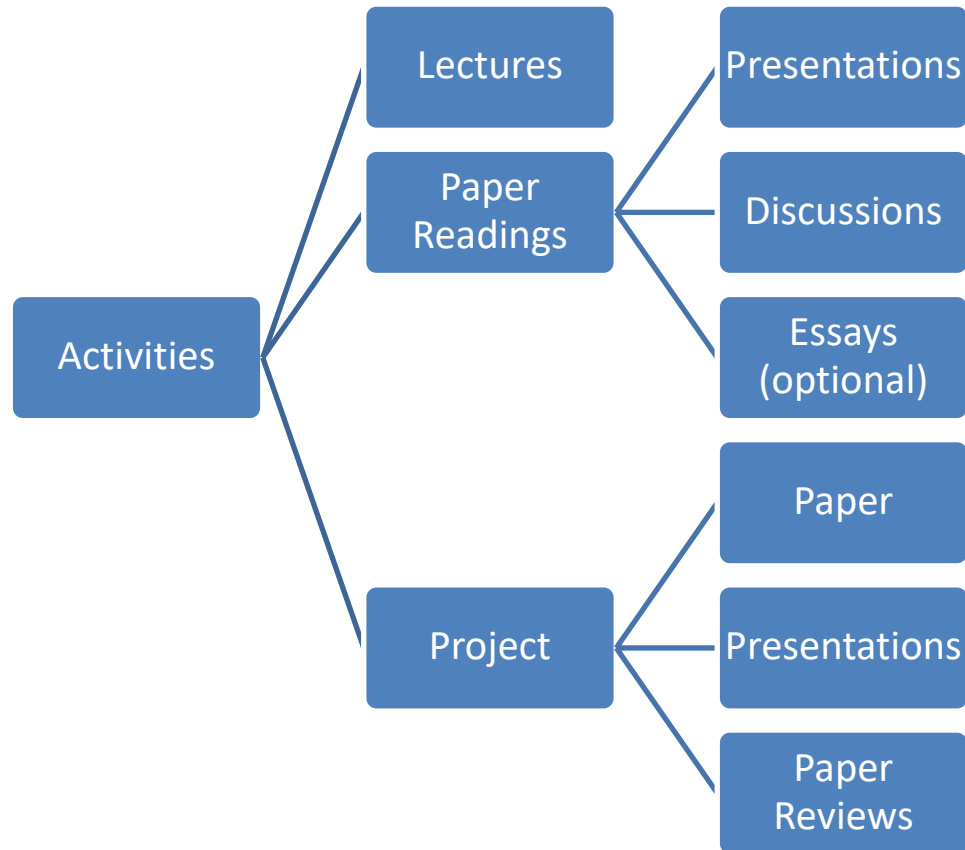
Susan Dart (1991)

CM and Software Engineering

Management Activities

- Project Planning
- Monitoring and Control
- Process Improvement
- Risk Management

Development Activities

- Requirements Engineering
- Design
- Coding

Support Activities

- Quality Assurance
- Measurement
- Verification, Validation and Test
- Configuration Management
- Reuse

Groups

- Ph.D. students should perform activities alone
- MS and Undergrad students **may** perform activities in groups of two
- Groups should be defined in the first weeks and keep the same until the end of the course

Course Dynamics

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                              ┌──────────────┐      ┌──────────────┐
                              │   Lectures   │      │ Presentations│
                              └──────────────┘      └──────────────┘
                              ┌──────────────┐      ┌──────────────┐
                              │    Paper     │──────│ Discussions  │
                              │   Readings   │      └──────────────┘
┌──────────────┐             └──────────────┘      ┌──────────────┐
│  Activities  │                                    │    Essays    │
└──────────────┘                                    │  (optional)  │
                                                     └──────────────┘
                              ┌──────────────┐      ┌──────────────┐
                              │              │      │    Paper     │
                              │   Project    │──────│ Presentations│
                              │              │      └──────────────┘
                              └──────────────┘      ┌──────────────┐
                                                     │    Paper     │
                                                     │   Reviews    │
                                                     └──────────────┘
```

Course Dynamics

- Usual week
  - 9am to 11am: lecture (me)
  - 11am to 13am: paper presentation (you) and discussions (us)

| Lecture | Paper Presentation | Discussion |

- Project presentations week
  - Presentations about the ongoing work of the project
  - Three presentations during the course

Reading topics
(one or two papers per topic)

1. Introduction to CM and Git
2. Git (basics and branching)
3. Git (distributed and internals)
4. Versioning
5. Diff
6. Merge
7. Branching
8. Repository Mining
9. Research vs. Practice

Paper Presentation / Discussions

- All students/groups should read all papers

- Each student/group will be in charge of presenting some papers
  - Send me ASAP five papers from the list (see site) sorted by preference
  - Around 30 minutes
  - Using slides

- The remaining students/groups are supposed to ask questions, provide comments, and answer questions about the paper being presented
  - Deepness of the questions
  - Quality of the discussion
  - Intensity of the interaction

Project

- Goal:
  - Apply CM over some other area
  - Apply some technique to support CM
  - Mine/Visualize CM repositories
  - Study some advanced CM technique
- Try to align the course project with your thesis theme
- It is important to define the term project theme in the first weeks
  - The first seminar will occur in less than a month!

Project Paper

- Types of projects
  - Theoretical: focus on related works and formal definitions
  - Implementation: focus on a tool and its evaluation
- Format:
  - 5 pages
  - ACM Style
- Content
  - Introduction: motivation and goal
  - Related work
  - Approach
  - Evaluation
  - Conclusion: contribution, limitation, and future work

Project Presentations

- 1st round
  - Context
  - Methodology
- 2nd round
  - Work progress
  - Partial results
- Final round
  - Final results
  - Experience report

Paper Reviews

- Papers will be submitted through a real conference management system, simulating a conference

- Each student will be a member of the program committee in this simulated conference, and will receive **around three papers to review**

- All authors will receive three anonymous reviews of their papers by the end of the course

- The reviews will not influence the score of the term papers

Essays

- Students that are not in charge of paper presentations in the week **may** individually write essays about the papers of the week

- Format: A4 page, font 12, margin of 2 cm, single spacing

- Content: paper title, student name, and the essay

- Should be handled printed, by the end of the classes

- Students with final grade between 5.5 and 6.0 will have their essays graded, summing up to 0.5 points, eventually rounding the grade to 6.0

Tentative Schedule

Data	Atividade	Entrega
13/03/2019	Aula - **Apresentação do curso para alunos de pós**	
20/03/2019	Aula - **Apresentação do curso para alunos de graduação**	
27/03/2019	Aula Apresentações de Artigos (1a leitura)	Resumos
03/04/2019	Aula Apresentações de Artigos (2a leitura)	Resumos
10/04/2019	Apresentações dos Trabalhos (1a rodada)	
17/04/2019	Aula Apresentações de Artigos (3a leitura)	Resumos
24/04/2019	Aula Apresentações de Artigos (4a leitura)	Resumos
01/05/2019	Sem Aula (dia do trabalho)	
08/05/2019	Aula Apresentações de Artigos (5a leitura)	Resumos
15/05/2019	Apresentações dos Trabalhos (2a rodada)	
22/05/2019	Aula Apresentações de Artigos (6a leitura)	Resumos
29/05/2019	Sem Aula (**ICSE**)	
05/06/2019	Aula Apresentações de Artigos (7a leitura)	Resumos
12/06/2019	Aula Apresentações de Artigos (8a leitura)	Resumos
19/06/2019	Aula Apresentações de Artigos (9a leitura)	Resumos Trabalho
26/06/2019	Apresentações dos Trabalhos (rodada final)	Avaliações de Artigos
03/07/2019	Vista de avaliações na sala 528 (9h às 11h)	
10/07/2019	Verificação Suplementar (9h às 11h)	
17/07/2019	Vista da VS na sala 528 (9h às 11h)	

Grading

$$Score = \frac{2 \times Paper\ Presentations + Discussions + 2 \times Project\ Paper + Project\ Presentations + Reviews}{7}$$

Approved

Presence ≥ 75%
AND
Score ≥ 6

Supplementary Test

Undergrad Student
AND
Presence ≥ 75%
AND
4 ≤ Score < 6
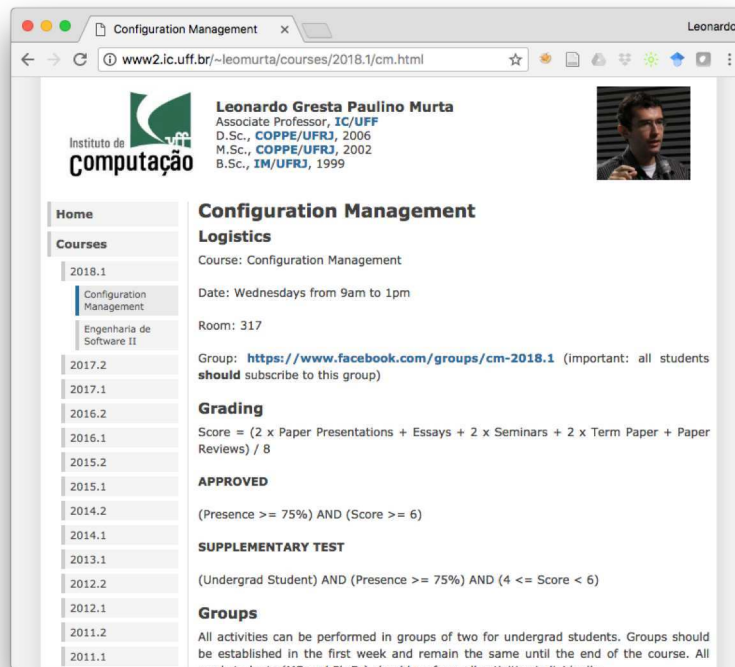
Important research tools...

- http://scholar.google.com.br
- http://www.informatik.uni-trier.de/~ley/db
- http://www.scopus.com
- http://ieeexplore.ieee.org
- http://portal.acm.org
- http://citeseer.ist.psu.edu
- http://www.overleaf.com

- Reference management: http://www.zotero.org

Course homepage

Read the course rules!!!

http://www.ic.uff.br/~leomurta

Important: subscribe to our group at Google Groups!
(all readings are available in the Google Drive)

Fair Play!

http://www.claybennett.com/pages/ethics.html

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