Carnegie Mellon / University of Coimbra

Professional Master of Software Engineering (MSE)

2011/2012

Carnegie Mellon

What's wrong?

- Ever higher complexity, continuous change, super fast markets
- Large Scale systems are now the norm
- Low qualified labour is not the answer for creating high-value products
- The software industry needs Technical Leaders, and these will not just pop up in an ad-hoc way
- Projects live and die because of Technology, People and Processes; universities typically only teach the first.

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CMU/UC Master of Software Engineering

Develop future leaders of industrial software engineering practice

- Explicitly training graduates for:
  - Effectively managing teams, projects and processes
  - Creating architectures for large-scale systems
  - Implementing change inside of organizations
  - Becoming team leaders, project managers, software architects
- Program that top organizations send their engineers to do before becoming team and section leads
- Widely recognized as being the Number One Program in Software Engineering worldwide

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New Type of Degree

- 16 month INTENSIVE program
  - 4 months in Pittsburgh, USA
  - 12 months in Coimbra, Portugal
- Global classroom – Coimbra / Pittsburgh / India / Korea
  - Coimbra is THE offering for Europe!
  - Dual-degree: graduates earn a degree from Carnegie Mellon (US) and a degree from the University of Coimbra (Portugal)
- Two years of relevant professional experience REQUIRED
- Enrols only very bright people from anywhere in the world
- Professional Degree – from industry to industry

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Student Profile / Admission Requirements

- 2+ years of relevant experience in Industry
  - Most students average 5 years
  - Projects, size, teams, development methodology, languages, etc.
- Strong Motivation
  - Must show a strong desire to become a technical leader and to improve the way software is made
- Highly recommended
  - Letters sent directly to the admission committee
  - Qualitative and Quantitative evaluation
- TOEFL + GRE scores
  - http://www.ets.org/
- Interview (in English)

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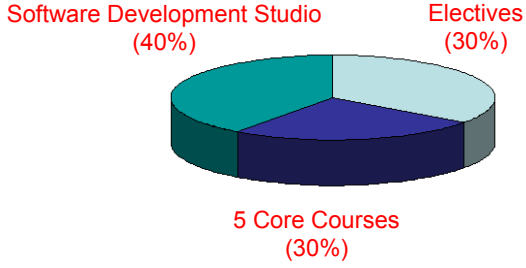
MSE Overview



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Core Courses

- Methods of Software Development
  - Learn how to gather, manage and analyze requirements
- Managing Software Development
  - Learn different software development methods and lifecycles
- Analysis of Software Artifacts
  - Learn how to reason about artifacts, from specification to code
- Architectures for Software Systems
  - Learn how to systematically create architectures for large-scale systems
- Models of Software Systems
  - Learn how to formally model and reason about software

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Program Overview

- **Fall 2011** (@Coimbra): August→December
  - 17-651: Models of Software Systems 12U
  - 17-653: Managing Software Development 12U
  - 17-652: Methods: Deciding What to Design 12U
  - 17-671: Software Development Studio I 9U
  - 17-676: Software Engineering Bootcamp 3U
  - 17-656: Comm. for Software Engineers I 3U
- **Spring 2012** (@Pittsburgh): January→May
  - 17-654: Analysis of Software Artifacts 12U
  - 17-655: Architectures for Software Systems 12U
  - 17-672: Software Development Studio II 12U
  - 17-657: Communication for Software Engineers II 3U
  - *Elective* 9-12U

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Program Overview (2)

- **Summer 2012** (@Coimbra): May→August
  - 17-673: Software Development Studio II 48U
- **Fall 2012** (@ Coimbra): August→December
  - 17-674: Studio Reflective Practice 12U
  - *Elective* 9-12U
  - *Elective* 9-12U
  - *Elective* 9-12U

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Software Development Studio

- Working in teams of five, students analyze a significant and challenging problem, autonomously planning, managing and implementing a realistic solution for an industrial client
  - E.g. NASA, Google, General Motors, BOSH, U.S. Navy, etc.
- The studio project starts on the first day students arrive at the program and ends on the day they leave
- Each project is fully mentored by two faculty staff
- It serves as a learning forum for applying the techniques studied in the core courses

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Electives

- Courses that students take advancing their knowledge in specific areas
- Example courses:
  - Risk Management for Software Intensive Projects
  - Software Systems Security Engineering
  - Managing Technical People
  - Software Measurement
  - Software Process Improvement
  - Real-Time Software and Systems
  - Embedded Systems
  - *(among others)*

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How Much and Who?

- Tuition: 10.000€
- Plus cost of living (Portugal + US)
- There's the possibility of being fully-funded for studying
- Our industrial partners hire you at the end!

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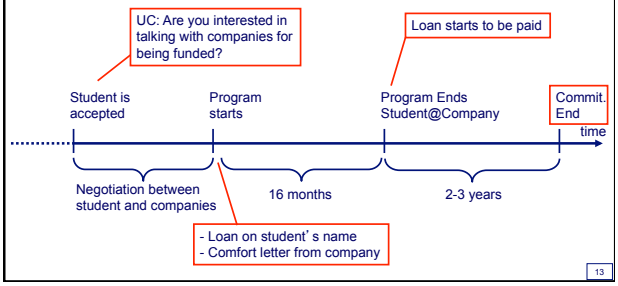
MSE Affiliate Sponsor's Program

- Companies are willing to fully-fund students giving them a job at the end of the program!
  - About 30k€, seen as a join-in bonus
  - In a way that is safe for the company and safe for the student



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When?

Application Deadline 2011/2012

28/February/2011

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Questions?

Change your life!

MSE

MASTER OF SOFTWARE ENGINEERING

http://mse.dei.uc.pt

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