

Software Engineering and Service-Oriented Systems

– Course program and organization –

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IMT Lucca



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LMU München



Lucca, Italy - September, 2013

In co-operation with SENSORIA and ASCENS members

General information

- **Advanced** course for CDSS/CS and CDSS/IA
- 20 hours
- Lecturers:

Dr. Francesco Tiezzi

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Schedule

- Sept 9, 11:30-13:30 (Tiezzi): SOC technologies
- Sept 11, 11:30-13:30 (Tiezzi): Spec. and Anal. of SOC systems
- Sept 13, 11:30-13:30 (Tiezzi): Spec. and Anal. of SOC systems

- Sept 16, 09:30-11:00 (Wirsing): Model-Driven Develop. for SOC
- Sept 17, 09:30-11:00 (Wirsing): Model-Driven Develop. for SOC
- Sept 18, 09:30-11:00 (Wirsing): Model-Driven Develop. for SOC
- Sept 19, 09:30-11:00 (Wirsing): Model-Driven Develop. for SOC
- + 2h in the afternoon of Sept 18 or Sept 19

- Sept 24, 9:30-11:30 (Tiezzi): a formal approach to autonomic systems programming
- Sept 26, 9:30-11:30 (Tiezzi/Loreti): a formal approach to autonomic systems programming

Course Program

- 1 Introductory lectures on SOC technologies (Tiezzi):
 - ▶ Services
 - ★ Web services: WSDL, SOAP
 - ▶ Service-Oriented Computing
 - ★ Service orchestration: WS-BPEL
- 2 Specification and Analysis of Service-Oriented Systems (Tiezzi):
 - ▶ COWS syntax and semantics
 - ▶ A logical verification methodology based on COWS

Course Program

- ③ Model-Driven Development of Service-Oriented Systems (Wirsing):
 - ▶ Engineering service-oriented systems with SENSORIA methods
 - ▶ Model-driven development
 - ▶ Modelling service-oriented architectures with soaML and UML4SOA
 - ▶ Metamodels and model transformations
 - ▶ SENSORIA development environment
 - ▶ Model-driven development @ work
 - ▶ Modal I/O Automata as semantic basis for UML4SOA
 - ▶ Engineering autonomic systems with ASCENS methods

Course Program

- ④ A Formal Approach to Autonomic Systems Programming (Tiezzi):
 - ▶ SCEL syntax and semantics
 - ▶ Programming with JResp (Loreti)

Final exam

- The final exam is a study in depth of a topic illustrated in the course, typically involving experimentation with software tools
- If possible, it may be related to your research interests

Question?