

Software Engineering and Service-Oriented Systems

– Course program and organization –

Francesco Tiezzi

IMT Lucca



Martin Wirsing

LMU München



Lucca, Italy - September, 2012

In co-operation with SENSORIA members

General information

- Advanced course on computer science and engineering
- Sw engineering methodologies for Service-Oriented Systems (SOSs)
- 20 hours
- Lecturers:

Dr. Francesco Tiezzi

IMT Institute for Advanced Studies Lucca

Piazza S. Ponziano, 6 - 55100, Lucca (Italy) - Ex-Boccherini building (1st floor)

tel: +39 0583 4326590

e-mail: francesco.tiezzi@imtlucca.it

web: <http://www.imtlucca.it/francesco.tiezzi>

Prof. Dr. Martin Wirsing

Ludwig-Maximilians-Universität München, Institute of Computer Science

Oettingenstr, 67 - D-80538, Munich (Germany)

e-mail: wirsing@pst.ifi.lmu.de

web: <http://www.pst.ifi.lmu.de/people/staff/wirsing/>

Schedule

- Sept 12, 10:30-12:30 (Tiezzi): SOC technologies
- Sept 14, 10:30-12:30 (Tiezzi): SOC technologies

- Sept 17, 09:30-12:00, 14:00-16:30 (Wirsing): Model-Driven Development for SOC
- Sept 18, 09:30-12:00, 14:00-16:30 (Wirsing): Model-Driven Development for SOC

- Sept 25, 10:30-12:30 (Tiezzi): Specification and Analysis of SOC systems
- Sept 27, 10:30-12:30 (Tiezzi): Specification and Analysis of SOC systems
- Oct 2, 10:30-12:30 (Tiezzi): Specification and Analysis of SOC systems

Course Program

- ① Introductory lectures on SOC technologies (Tiezzi):
 - ▶ Services
 - ★ Web services: WSDL, SOAP
 - ▶ Service-Oriented Computing
 - ★ Service orchestration: WS-BPEL

Course Program

- ② 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
 - ▶ Summary and Introduction to the ASCENS project

- ③ Specification and Analysis of Service-Oriented Systems (Tiezzi):
 - ▶ COWS syntax and semantics
 - ▶ Analysis techniques based on COWS:
 - ★ A bisimulation-based observational semantics
 - ★ A type system for checking confidentiality properties
 - ★ A logical verification methodology

Final exam

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

Question?