

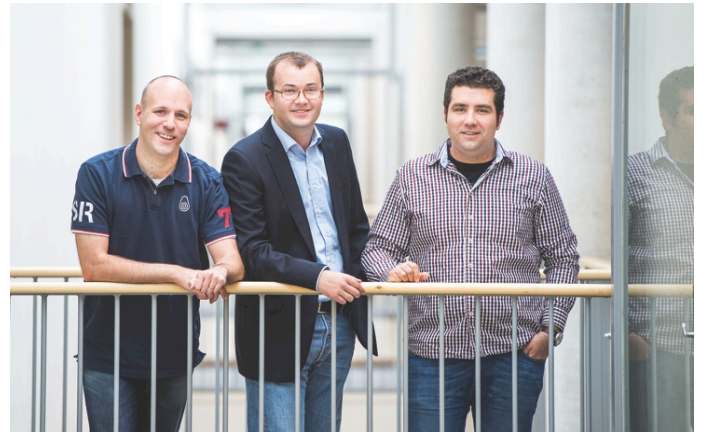
Customised courses in software development

Software Testing, Pilot course, Nov – Dec 2014

*Testing is widely considered to be a heavyweight, but still under-prioritized activity in software and systems development. This **pilot version** of the software testing course provides an overview understanding of the fundamental problems, as well as practical methods and tools for a systematic state-of-the-art approach to software testing.*

After the course, the participants are expected to

- understand the fundamental goals, challenges and limitations of software testing, and its relation to other software engineering activities, such as requirements engineering, design and implementation.
- have an overview knowledge of the major established test design techniques, including traditional functional and structural techniques for unit-level testing, techniques for integration- and system-level testing, regression testing and regression test selection, management of combinatorial issues, and test automation.
- have an overview knowledge of static and dynamic code analysis.
- have an overview knowledge in more advanced testing methods (such as model-based testing), and in the state-of-the-art in software testing research.



The course is given in a flexible format where the theoretical content, covered in video lectures, is interleaved with practical exercises and possibly one or two campus days. The course is given during November and December of 2014. Expected time for coursework is equivalent to between 1 and 2 full-time weeks.

The course is divided into five modules:

1. Introduction to software testing and test design
2. Unit testing, test design and automation
3. Testing at integration and system level
4. Static and dynamic analysis
5. Advanced test design

The course is offered by: Mälardalen University

Who should attend this course?

There are no simple solutions to a perfectly tested software system. This course offers insights, and open challenges, concerning testing techniques and practices, covering both strengths and limitations of individual methods. We seek course participants that are willing to actively challenge and reflect upon their current testing and development practices, thereby working to continuously improve software and system quality.

The software testing course primarily targets software or system developers, designers and testers, but is also suitable for architects, and development- and test managers. The participants in the course are expected to have a couple of years industrial experience in software engineering. Programming knowledge and experience is assumed.

Contact us for more information about this course

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Course development team

The course has been developed jointly by MDH and SICS Swedish ICT in collaboration with industrial partners Arcticus Systems, Bombardier Transportation, Ericsson, Qtema, Scania, Saab and Volvo Construction Equipment. The team behind the course has a long-running experience from education, and basic and applied research within software testing and analysis, and includes:



Dr. Daniel Sundmark, researcher at SICS with a focus on studies of industrial software development, particularly monitoring, testing and debugging of embedded systems.



Prof. Björn Lisper, professor in Computer Engineering at MDH since 1999, and focusing static code analysis, particularly execution time analysis.



Dr. Adnan Causevic, postdoctoral researcher at MDH, with a research focus on test automation, developer testing and test-driven development.



Eduard Enoiu, Phd student focusing on automated software testing, model-based testing, and model-driven engineering in general.

Register for the course

Read more about the course on www.promptedu.se

Register by the latest October 15 at www.antagning.se

PROMPT

Software is a business-critical resource for large parts of Swedish private enterprise and an important source of innovation and competitiveness. In cooperation with academia and industry we are establishing a national education alternative with the aim of guaranteeing the supply of software-related advanced skills and innovative power for Swedish private enterprise. The courses are given in cooperation with the Blekinge Institute of Technology, Chalmers, the University of Gothenburg, Mälardalen University and SICS.

The courses, all on master's level, have been developed to suit those gainfully employed and who need to be able to combine work and studies. The courses have been produced in cooperation with the companies who need your skills, and teaching has been adapted for those who are gainfully employed. The courses combine conventional studies with distance, web-based learning and teaching at the participating companies. The courses are given within the framework of the PROMPT project (Professional Master's Education in Software Development). PROMPT is a cooperation project between academia and industry with the aim of strengthening competitiveness in Swedish companies.

PROMPT's curriculum is organised into four subject-related areas, and also a special area with project courses.

- Process and Methods for Developing Software-intensive Systems
- Software Architecture and Design • Verification and Validation
- Reliable Software • Project Courses

The PROMPT project is financed by the Knowledge Foundation's programme "Expertkompetens för innovation" (Expert Skills for Innovation). Its aim is that cooperation between academia and industry will establish a national educational alternative with the aim of guaranteeing the supply of software-related advanced skills and innovative power for Swedish private enterprise.

