

SYLLABUS

Testing IT-systems 7.5 credits I0015N

Test av IT-system

Course syllabus admitted: Spring 2024 Sp 3 - Present

**DECISION DATE
2023-06-16**

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Test av IT-system

First cycle, I0015N

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	U G VG *	Informatik	Informatics/Computer and Systems Sciences

Main field of study

Information Systems Sciences

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language and In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and basic courses in programming, for example D0019N Software Development with Java or analogous knowledge acquired through other courses or proved practical work.

Selection

The selection is based on 1-165 credits.

Course Aim

After the course, the student will be able to

- Implement unit tests effectively and comprehend the importance of modular software development for thorough testing
- Effectively perform white box testing, using debuggers to scrutinize runtime variables enhancing problem-solving capabilities.
- Understand and apply modern version control strategies, including Continuous Integration/Continuous Deployment (CI/CD) techniques, in order to perform test automation.
- Test and interact with client-server APIs, perform Web site testing, Web site automation, as well as database validation testing, ensuring comprehensive testing coverage.
- Implement robust test exception handling and logging of failed test practices, enhancing the reliability and maintainability of software applications.

Contents

The course presents students with key elements of software development, centering on building reliable applications, via testing. It stresses the importance of testing software, using testing tools available in today's integrated development environments. The significance of unit testing, modular coding, and database testing for software evaluation is covered.

Debugging tools are discussed, underscoring their role in testing software, specifically in IT systems. Students are introduced to version control systems, remote collaboration such as pair programming, CI/CD testing techniques, helping them foster a streamlined development process. The course also provides a deep-dive into testing client-server APIs and databases, ensuring robust validation of IT Systems.

Lastly, the curriculum illuminates the essentials of exception handling and logging. Students are taught to predict, manage potential errors, and generate insightful logs, including to a cloud based logging service - critical skills for testing software, and guaranteeing sturdy, easy-to-maintain applications.

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

The course is conducted as a campus and distance course. A learning platform is used for sharing course material, information and submissions. Knowledge is shared and created within the course through virtual meetings and at campus with teachers and other students for discussions, supervision, teamwork and seminars. Student learning takes place through teacher-led lessons, laboratory work, self-study, individual assignments and group assignments.

The course may be given in English.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. The course is examined through a final written examination and individual written assignment reports, which concern the course material.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term "unauthorized aids" refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0006	Written exam	U G VG *	4.5	Mandatory	S24	
0007	Individual assignments	U G#	3	Mandatory	S24	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Robert Brännström 2023-06-16

Syllabus established

by Director of Undergraduate Studies Bo Jonsson Department of Business Administration, Technology and Social Sciences 2011-06-10