JÖNKÖPING UNIVERSITY
School of Engineering

COURSE SYLLABUS

Software Development, 7.5 credits

Mjukvaruutveckling, 7.5 högskolepoäng

Course Code:	TMUK14	Education Cycle:	First-cycle level
Confirmed:	Jun 01, 2023	Disciplinary domain:	Technology
Valid From:	Jan 18, 2027	Subject group:	Computer Technology
		Specialised in:	G1F First cycle, has less than 60 credits in first-cycle course/s as entry requirements
		Main field of study:	Computer Science

Intended Learning Outcomes (ILO)

On completion of the course the student shall:

Knowledge and Understanding

- show knowledge of fundamental modelling techniques and principles in object-oriented analysis and design
- demonstrate knowledge of design principles in GRASP
- show knowledge of different software development methods, including different forms of distributed development in groups
- demonstrate knowledge of software testing and the various parts of the testing process
- show knowledge of continuous integration.

Skills and Abilities

- demonstrate the ability to practically apply methods for software development
- demonstrate the ability to apply GRASP design principles when developing an object-oriented application
- demonstrate ability to create and maintain build environments for continuous integration of software
- show ability to create a model for continuous integration of software based on given situation
- demonstrate ability to version manage and test during development for continuous integration of software.

Judgement and Approach

- demonstrate the ability to assess the suitability of software development methods based on a given problem
- demonstrate the ability to assess the suitability of an object-oriented analysis and design with respect to a given problem.

Content

The course is a basic course in software system development with a focus on object-oriented analysis and design, continuous integration, delivery and distribution, and builds on the students' knowledge of imperative and object-oriented languages.

The course includes the following elements:

- Software development methods
- Object-oriented analysis and design, including fundamental modelling
- Design principles included in GRASP (General Responsibility Assignment Software Patterns)
- Methods and techniques for continuous integration of software

- Testing and version management

Type of Instruction

Lectures, laboratory work in the form of assignments, workshops and tutoring.

Language of instruction is Swedish or English.

Entry Requirements

General entry requirements and taken courses in Database Technology, 7.5 credits and Object-oriented Program Development, 7.5 credits (or equivalent knowledge).

Examination and Grades

The course is graded 5, 4, 3 or U.

Registration of examination:

Name of the Test	Value	Grading
Examination [1]	3 credits	5/4/3/U
Laboratory	4.5 credits	G/U

[1]Determines the final grade of the course, which is issued only when all course units have been passed.

Course Literature

Please note that the course literature may be revised up to eight weeks before the start of the course.

Title: Continuous Delivery: Reliable Software Releases through Build, Test, and Deployment Automation
Author: Jez Humble, David Farley
Publisher: Addison-Wesley Professional, 2010
ISBN: 9780321601919

Title: Pro Git
Författare: Scott Chacon, Ben Straub
Publisher: Apress, 2014
ISBN: 9781484200773
URL: https://link.springer.com/book/10.1007/978-1-4842-0076-6

Title: Scrum and XP from the Trenches
Author: Henrik Kniberg
Publisher: Lulu.com, 2015
ISBN: 9781329224278

Title: Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and Iterative Development
Author: Craig Larman
Publisher: Prentice Hall, 2004
ISBN: 9780131489066

Title: Software Engineering, 10th Edition
Author: Ian Sommerville
Publisher: Addison-Wesley, 2015
ISBN: 9780133943030