COURSE SYLLABUS

Object-oriented Software Development with Design Patterns, 7.5 credits

Objektorienterad mjukvaruutveckling med designmönster, 7,5 högskolepoäng

Course Code:	TOUK18	**Education Cycle:**	First-cycle level
Confirmed by:	Dean Apr 6, 2018	**Disciplinary domain:**	Technology
Revised by:	Mar 7, 2019	**Subject group:**	DT1
Valid From:	Aug 1, 2019	**Specialised in:**	G1F
Version:	3	**Main field of study:**	Computer Engineering

Intended Learning Outcomes (ILO)

On completion of the course the student should:

Knowledge and understanding
- display knowledge of different methods for system development and their pros and cons
- display knowledge of system design, requirements specifications and validation
- display understanding of the most common components of the Unified Modelling Language (UML)
- display understanding of established design patterns for object-oriented analysis, object-oriented programming, and system architecture

Skills and abilities
- display the ability to, via analysis of a requirement specification, create UML-diagrams that describe an IT-system that meets said requirements
- display the ability to transform UML-diagrams into object-oriented program code
- display the ability to apply object-oriented programming with design patterns for development of IT-systems

Judgement and approach
- display the ability to, given a problem, suggest and motivate appropriate design patterns

Contents

The purpose of the course is to provide students with knowledge required to carry out object-oriented design in accordance with established practice, and to be able to implement the results of said design in program code.

The course includes the following topics:
- Introduction to system development methods: waterfall methods, iterative methods, agile methods
- Software validation and requirements specifications for software validation

- Unified Modelling Language: class diagram, sequence diagram, use-case diagram, etc.
- Design patterns: object-oriented patterns, analysis patterns, patterns for system architecture

Type of instruction

Tuition will consist of lectures and lab work.

The teaching is conducted in English.

Prerequisites

General entry requirements and completion of the course Object Oriented Programming, 7,5 credits (or the equivalent).

Examination and grades

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

The final grade will only be issued after satisfactory completion of all assessments.

Registration of examination:

Name of the Test	Value	Grading
Written examination[I]	4 credits	5/4/3/U
Laboratory Work	3.5 credits	U/G

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

Course literature

Literature

The litterature list for the course will be provided one month before the course starts.

Title: Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and Iterative Development (3rd Edition)
Author: Craig Larman
Publisher: Prentice Hall
ISBN: 978-0131489066