Linnæus University

Course syllabus

Faculty of Technology
Department of Computer Science and Media Technology

1DV607 Objektorienterad analys och design med UML, 7,5 högskolepoäng
Object Oriented Analysis and Design using UML, 7.5 credits

Main field of study
Computer Science

Subject Group
Informatics/Computer and Systems Sciences

Level of classification
First Level

Progression
G1F

Date of Ratification
Approved 2014-10-03
Revised 2020-09-05 by Faculty of Technology. Prerequisites are revised.
The course syllabus is valid from autumn semester 2021

Prerequisites
30 credits in the subjects of Computer Science or Computer Technology or a combination of both, including Object-Oriented Programming (1DV502) or an equivalent course.

Objectives

The course gives knowledge in object oriented analysis and design, the modeling language UML and the implementation of analysis and design models using an object oriented programming language. After completing the course the student is expected to:
Knowledge and Understanding

- A.1 understand the concepts and principles of analysis and design of software systems in general and using an object-oriented methodology in particular,
- A.2 show knowledge of the use of design patterns,
- A.3 show knowledge of refactoring as a design method,

Competence and Ability

- B.1 develop object oriented models in UML for different problems,
- B.2 transform object oriented models into an object oriented programming langauge and vice versa,
- B.3 refactor and improve the implementation and design of an existing system,

Judgement and Approach

- C.1 reflect and give constructive feedback on models developed by peers.

Content
The theory provides the fundamental principles and best practices, which are used as the basis for the creation of self-knowledge, which is then used in practical applications.

- Principles and methods for object-oriented analysis and domain modeling in UML
- Principles and methods for object-oriented design in UML
- Architectural models and patterns
- Principles and methods for the use of design patterns
- Transformation of object-oriented design to object-oriented implementation and vice versa
- Principles and methods for refactoring of object-oriented implementation as a method for object-oriented design

Type of Instruction
The course is available on campus or as a distance course. Instruction consists of theory and work on practical applications and tutorials. Instructions require access to computer, headset, webbcamera and Internet connection. Web based instruction materials are used as well as reference litterature. Instructions, tutoring and learning can be both individual and group based.

Examination

The examination of the course is divided as following:

Code	Appellation	Grade	Credits
2101	Exam	U/G	2.00
2102	Assignment 1	AF	1.00
2103	Assignment 2	AF	2.00
2104	Assignment 3	AF	2.50

The course is assessed with the grades A, B, C, D, E, Fx or F.
The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail (i.e. received the grade F).

Grades are given after the completion of the course and based on the results of assignments. The assignments judged based on quality, scope and degree of difficulty. The final grade is determined based on the grades of assignments with the following weighting. Assignment 1 is weigted at 20%, Assignment 2 is weighted at 35% , Assignment 3 is weighted at 45%.

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University.
If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way.

Objectives achievement

The examination parts are linked to the learning outcomes as follows:

Goal	2101	2102	2103	2104

A.1	✓	✓	✓	
A.2	✓			✓
A.3	✓			✓
B.1		✓	✓	✓
B.2			✓	✓
B.3			✓	✓
C.1		✓	✓	

Course Evaluation

During the implementation of the course or in close conjunction with the course, a course evaluation is to be carried out. Results and analysis of the course evaluation are to be promptly presented as feedback to the students who have completed the course. Students who participate during the next course instance receive feedback at the start of the course. The course evaluation is to be carried out anonymously.

Credit Overlap

The course cannot be included in a degree along with the following courses of which the content fully, or partly, corresponds to the content of this course: 1DV407 Object Oriented Analysis and Design using UML, 7.5 credits

Other

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

Required Reading and Additional Study Material

Required Reading

Larman, C *Applying UML and Patterns, 3rd edition*, Prentice Hall, latest edition