*Course syllabus*

# Objektorienterad modellering och design
# Object-oriented Modelling and Design

## EDAF25, 7,5 credits, G2 (First Cycle)

**Valid for:** 2023/24
**Faculty:** Faculty of Engineering, LTH
**Decided by:** PLED C/D
**Date of Decision:** 2023-04-18

## General Information

**Compulsory for:** IDA2
**Language of instruction:** The course will be given in Swedish

## Aim

The course will give ability to sustainable and construction of programs that can be reused and modified with respect to changing requirements in an industrial context. It will also provide a deeper insight into programming techniques such as algorithms for handling graphs.

## Learning outcomes

*Knowledge and understanding*
For a passing grade the student must

- be able to identify the use of common design principles and design patterns in given programs. This and all other course objectives refer to programs with some hundreds or thousands lines of code.
- be familiar with and be able to explain how basic algorithms for handling graphs work

*Competences and skills*
For a passing grade the student must

- be able to design and implement object-oriented programs with many classes and a few packages,
- be able to choose and implement suitable design patterns in typical problems,
- be able to use an integrated development environment to design, implementation, and refactoring of programs,
- be able to describe program design with UML (Unified Modelling Language).
- be able to implement and apply basic algorithms for handling graphs.

*Judgement and approach*
For a passing grade the student must

- be able to evaluate a program design with respect to design principles and suggest improvements in terms of applying OO techniques and design patterns.
- be able to construct programs that are easy to maintain and modify.

# Contents

Design principles for object-oriented programs. Design patterns and frameworks. A development environment for object-oriented modelling, implementation, and refactoring. Graph problems and graph algorithms.

# Examination details

**Grading scale:** TH - (U,3,4,5) - (Fail, Three, Four, Five)
**Assessment:** The grade is based on the written exam, laboratory exercises, assignments and two small projects which are reported orally.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

**Parts**
**Code:** 0117. **Name:** Project.
**Credits:** 2. **Grading scale:** UG. **Assessment:** For a final grade, the students must have completed the project work.
**Code:** 0217. **Name:** Written Examination .
**Credits:** 3,5. **Grading scale:** TH. **Assessment:** Written examination.The final grade of the course is based on the result of the written exam. Activity at the seminars may improve the grade.
**Code:** 0317. **Name:** Laboratory.
**Credits:** 2. **Grading scale:** UG. **Assessment:** The pass grade requires that the compulsory course is approved

# Admission

**Admission requirements:**

- Compulsory items in EDA690 Algorithms and data structures or EDAA30 Programming in Java, advanced course

**The number of participants is limited to:** No
**The course overlaps following course/s:** EDA060, EDA065, EDA666, EDAF10, EDA061, EDAF60

# Reading list

- Lennart Andersson: UML-syntax. Datavetenskap LTH, 2010.
- Additional course literature will be announced later. See course web page.

# Contact and other information

**Course coordinator:** Univ. lektor Roger Henriksson, roger.henriksson@cs.lth.se
**Course homepage:** http://cs.lth.se/edaf25