DALARNA
UNIVERSITY

Course Syllabus

Object-Oriented Design and Problem-Solving 7.5 Credits*, First Cycle

Learning Outcomes

Knowledge and understanding
After completing the course, the student should be able to:

- explain the theoretical foundations within object-oriented design
- describe methods, working methods, techniques and tools used in the development of object-oriented software

Skills and Abilities
After completing the course, the student should be able to:

- apply accepted design principles for object-oriented programming
- design algorithms and data structures that promote manageability and scalability
- apply modeling languages for visualization of object-oriented programs

Evaluation ability and approach
After completing the course, the student should be able to:

- motivate for the choice of data structures and algorithms in the software development process

Course Content

The course covers fundamental concepts in object-oriented design (OOD) and software development, such as well-known design patterns and programming principles, aimed at designing code that is well-structured, understandable, manageable and scalable.Furthermore, how classes, attributes, methods and relationship types can be extracted based on requirements specifications, how visual representations in established notational languages are used in documentation and in planning phases.

Assessment

Digital examination, Seminars and Project

* 1 Credit = 1 ECTS

Forms of Study

Grades
The Swedish grades U–VG.

Digital examination, 2.5 credits, U-VGSeminars, 2 credits, U-G

Prerequisites
Programming 7.5 credits

Other Information
Overlaps GIK2F7, IK1004 and MI1003.

Teaching can take place in English.

Subject:
Information Systems

Group of Subjects:
Informatics/Computer and Systems Sciences

Disciplinary Domain:
Technology, 100%

This course can be included in the following main field(s) of study:
1. Information Systems
2. Microdata Analysis

Progression Indicator within (each) main field of study:
1. G1F
2. G1F

Approved:
Approved 6 September 2022
Valid from 6 September 2022