

DIT950, Programming, advanced course, 7.5 ECTS Credits

Basic Level

1. Establishment

The Faculty Board at the IT-university established the course plan at 2006-11-17. This course plan is effective from autumn 2007.

Educational area: Technology/Sciences

2. Location

The course is a part of the Computer Science Bachelor's programme and an elective course at Göteborg University.

3. Knowledge Requirements

The requirement for the course is to have successfully completed the first semester of the Computer Science Bachelor's education or equivalent.

4. Learning Outcomes

This course discusses the principles of object-oriented programming and programming in the large. Course topics include data abstraction, inheritance, and polymorphism as well as generics and threads.

Upon completion, students should be able to

- Describe the principles of object-oriented programming, apply them in a programming context, and explain how they are realized by a particular object-oriented language.
- Understand and identify simple class invariants, and design classes accordingly.
- Design and implement object-oriented solutions to middle-size software problems, debug and test their implementation.
- Understand the semantics of variables, objects, and methods so that they can trace a program and describe its run-time behavior without running the program.
- Evaluate different features of programming in the large, assess their benefits and risks with respect to different design goals, and make proper choices.

5. Content

The course consists of a series of lectures, exercises, and programming labs.

6. Literature

See separate literature list.

7. Examination

To pass the course, students pass an exam and successfully complete all mandatory assignments. Students that fail the exam, can re-take it once; students that fail to successfully complete the mandatory assignments, must complete them before they can take the exam. It is not possible to re-take an exam to improve a grade other than a failing grade.

8. Marks

The course is graded with the following marks: Fail, Pass, Pass with Distinction. The course can also, at the students' request, be marked according to ECTS standards.

9. Evaluation

The course is evaluated through meetings both during and after the course between teachers and student representatives. Further, an anonymous questionnaire can be used to ensure written information. The outcome of the evaluations serves to improve the course by indicating which parts could be added, improved, changed or removed.

10. Other

The course is held in English.