UNIVERSITY OF GOTHENBURG

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DIT043 Object-Oriented Programming, 7.5 credits

Objektorienterad programmering, 7,5 högskolepoäng

First Cycle

Confirmation

This course syllabus was confirmed by Department of Computer Science and Engineering on 2020-12-18 to be valid from 2021-08-30, autumn semester of 2021.

Field of education: Science 100%
Department: Department of Computer Science and Engineering

Position in the educational system

The course is a compulsory course in the Software Engineering and Management Bachelor's Programme. The course is also a single subject course at the University of Gothenburg.

The course can be part of the following programme: 1) Software Engineering and Management Bachelor's Programme (N1SOF)

Main field of studies	*Specialization*
Software Engineering	G1N, First cycle, has only upper-secondary level entry requirements

Entry requirements

General entrance requirements for university studies and the Swedish upper secondary courses English B, Mathematics C or English 6, Mathematics 3b/3c or equivalent.

Learning outcomes

On successful completion of the course the student will be able to:

Knowledge and understanding

- explain basic programing language concepts, e.g., statements, expressions, operators, types, control flow constructs, argument passing, method calls and exception handling,
- explain object-oriented concepts, e.g., objects, methods, classes and inheritance,
- explain the meaning and use of elementary data structures, e.g., strings and arrays,

Competence and skills

- develop small (up to 5000 lines of code) software applications in an object oriented programming language using a modern development environment,
- structure the program into separate parts that can be implemented independently in a practicable way,

Judgement and approach

- evaluate the comprehensibility of a program, e.g., using class coupling, class cohesion and method cohesion,
- assess the impact of errors in software development.

Course content

Programming (or development or coding) is the act of solving computing problems using a programming language. It involves the design, realisation, testing, troubleshooting, and maintenance of program code, in a programming language, on top of some programming platform, by the help of a development environment. The course introduces a contemporary object oriented programming language with associated platforms and environments, with emphasis on basic programming language concepts, object oriented concepts, and elementary data structures. It also introduces the notion of code quality, and contemporary methods for obtaining high code quality. In addition, the course introduces more advanced programming topics such as recursion and exception handling.

Sub-courses

1. **Written exam** *(Tentamen),* 4.5 credits
   Grading scale: Pass with distinction (5), Pass with credit (4), Pass (3) and Fail (U)
2. **Assignements** *(Inlämningsuppgifter),* 3 credits
   Grading scale: Pass with distinction (5), Pass with credit (4), Pass (3) and Fail (U)

Form of teaching

The teaching consists of lectures, group work, exercises, as well as supervision in connection to the exercises.

Language of instruction: English

Assessment

The course is examined by an individual written exam carried out in an examination hall at the end of the course and written assignments normally carried out in groups of 2–3 students. The assignments part is examined on the basis of solutions to compulsory problems handed in during the course and on the basis of individual contribution to the group work.

Students are required to complete written self- and peer-assessment forms during the course which will be part of the assessment of the student's individual contribution to the project.

Retake examinations of the assignments part consist of written individual assignments.

If a student, who has failed the same examined component twice, wishes to change examiner before the next examination, a written application shall be sent to the department responsible for the course and shall be granted unless there are special reasons to the contrary (Chapter 6, Section 22 of Higher Education Ordinance).

In cases where a course has been discontinued or has undergone major changes, the student shall normally be guaranteed at least three examination occasions (including the ordinary examination) during a period of at least one year from the last time the course was given.

Grades

The grading scale comprises: Pass with distinction (5), Pass with credit (4), Pass (3) and Fail (U).
The grading scale comprises Fail (U), 3, 4 or 5.
To pass the course, all mandatory components must be passed. To earn a higher grade than Pass, a higher weighted average from the grades of the components is required.

Course evaluation

The course is evaluated through meetings both during and after the course between teachers and student representatives. Further, an anonymous questionnaire is 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.

Additional information

Course literature to be announced 8 weeks prior to the start of the course.