



Faculty of Health, Science and Technology
Computer Science

Syllabus

Software Development Methodology

Course Code:	DVGA02
Course Title:	Software Development Methodology <i>Programutvecklingsmetodik</i>
Credits:	7.5
Degree Level:	Undergraduate level
Progressive Specialisation:	First cycle, has less than 60 credits in first-cycle course/s as entry requirements (G1F)

Major Field of Study:
DVA (Computer Science)

Course Approval

The syllabus was approved by the Faculty of Health, Science and Technology 2024-08-26, and is valid from the Spring semester 2025 at Karlstad University.

Prerequisites

Registered for Programming Techniques, 7.5 ECTS credits, or equivalent

Learning Outcomes

Upon completion of the course, students should be able to:

- give an account of object-oriented principles, such as abstraction, modularisation, encapsulation, inheritance, polymorphism, and dynamic binding,
- apply object-oriented design principles to write simple programs in an object-oriented programming language,
- analyse a problem and use the analysis to design and model an object-oriented program,
- use exceptions and other techniques to handle and signal errors, and
- systematically test and document software.

Content

The course treats both programming in an object-oriented programming language and software development techniques used to achieve abstraction, modularisation, and reusability. The course also introduces software testing and program code documentation.

The course covers the following:

- Object-oriented programming
- Abstraction
- Modularisation
- Modelling
- Analysis
- Testing (unit and end user tests)
- Documentation
- Exceptions and error management
- Basic data structures (such as lists, queues, stacks, trees)
- Development models and software quality

Reading List

See separate document.

Examination

Assessment is based on an individual written exam and laboratory assignments completed in groups.

If students have a decision from Karlstad University entitling them to Targeted Study Support due to a documented disability, the examiner has the right to give such students an adapted examination or to examine them in a different manner.

Grades

One of the grades 5 (Distinction), 4 (Some Distinction), 3 Pass, or Fail (U) is awarded in the examination of the course.

Quality Assurance

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

Course Certificate

A course certificate will be provided upon request.

Additional information

The local regulations for studies at the Bachelor and Master levels at Karlstad University stipulate the obligations and rights of students and staff.