Faculty of Health, Science and Technology
Computer Science

Syllabus

Software Engineering

Course Code:	DVGC22
Course Title:	Software Engineering *Software Engineering*
Credits:	7.5
Degree Level:	Undergraduate level
Progressive Specialisation:	First cycle, has at least 60 credits in first-cycle course/s as entry requirements (G2F)

Major Field of Study:
DVA (Computer Science)

Course Approval
The syllabus was approved by the Faculty of Health, Science and Technology 2024-02-20, and is valid from the Autumn semester 2024 at Karlstad University.

Prerequisites
60 ECTS credits completed, including Data Structures and Algorithms, 7.5 ECTS credits, or equivalent

Learning Outcomes
Upon completion of the course, students should be able to:
- give an account of and apply basic concepts in development processes for software based on agile principles, such as Scrum and XP (eXtreme Programming),
- give an account of and apply basic techniques and procedures in software design based on agile principles, such as TDD (Test-driven development), pair programming, and continuous integration,
- give an account of and apply basic patterns and principles in software design based on agile principles, such as SOLID principles and basic architect and design patterns,
- perform iteration-based project development with planning sessions, deliverable iteration

results, customer demonstrations, and retrospective self-evaluation, and
- apply engineering design and architecture principles professionally.

Content
The course consists of three main parts: a series of lectures and workshops introducing relevant concepts, techniques, and principles in software design; a continuous, practical part in which students apply course material in the form of an agile development project; and finally a written report, in which students present and discuss course content in relation to their projects. The course concludes with oral project presentations in groups.

Reading List
See separate document.

Examination
Assessment is based on two written exams and a project which is completed in groups and presented both orally and in a final report.

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 Pass with Distinction (5), Pass not without Distinction (4), Pass (3), 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.