Reg No: DVAE06/20251

Faculty of Health, Science and Technology
Computer Science

Syllabus

Research Project in Computer Science

Course Code:	DVAE06
Course Title:	Research Project in Computer Science *Forskningsprojekt inom Datavetenskap*
Credits:	15
Degree Level:	Master's level
Progressive Specialisation:	Second cycle, has second-cycle course/s as entry requirements (A1F)

Major Field of Study:
DVA (Computer Science)

Course Approval
The syllabus was approved by the Faculty of Health, Science and Technology 2024-09-12, and is valid from the Spring semester 2025 at Karlstad University.

Prerequisites
30 ECTS credits of advanced level courses in Computer Science and relevant background for the chosen research area, plus upper secondary level English B, or equivalent

Learning Outcomes
Upon completion of the course, students should be able to
- develop solutions (systems, algorithms, protocols) for computer science problems,
- implement selected algorithms or protocols in a simulator or on a real platform,
- conduct performance evaluation of selected parts of algorithms or protocols either through simulation or through implementation in a real environment,
- demonstrate knowledge of the area through active participation in research projects in computer science, and
- read and understand current literature in the form of conference papers and journal articles on computer science, and write technical reports with content suitable for

submission to national and international conferences and/or journals in the field.

This course prepares students for writing computer science papers at the second-cycle level.

Content
During this course the students will deepen their knowledge and abilities in computer science. An important part of system design is to identify the whole range of problems involved in design for real-world implementation. Based on this analysis, the students will derive a sequence of more detailed sub-problems that can be addressed by means of tools and mechanisms that they have already mastered. The students will then find solutions for those problems, evaluate them in a real system or in a simulator, and finally assess the result of the proposed solutions. Each student or group of students is given a specific problem to solve and is expected to present a written report including background, considerations regarding models, a precise problem definition, a description of the solution, results, and conclusions.

Reading List
See separate document.

Examination
Assessment is based on a written project report, presented and defended in a seminar. Submissions for assessment must clearly indicate individual contributions. Students who receive a grade of Fail (U) must submit a revised version of their report or a completely new report for renewed evaluation.

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 (Pass with Distinction), 4 (Pass with Some Distinction), 3 (Pass), or U (Fail) 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.