Reg No: DVAD36/20252

Faculty of Health, Science and Technology
Computer Science

Syllabus

Data Protection and Artificial Intelligence

Course Code:	DVAD36
Course Title:	Data Protection and Artificial Intelligence *Dataskydd och artificiell intelligens*
Credits:	1.5
Degree Level:	Master's level
Progressive Specialisation:	Second cycle, has only first-cycle course/s as entry requirements (A1N)

Major Field of Study:
DVA (Computer Science)

Course Approval
The syllabus was approved by the Faculty of Health, Science and Technology 2025-01-31, and is valid from the Autumn semester 2025 at Karlstad University.

Prerequisites
30 ECTS credits in Computer Science or three years of work experience in the IT sector, plus upper secondary level English 6 or B, or equivalent

Learning Outcomes
Upon completion of the course, students should be able to:
- identify threats and risks to personal privacy in IT systems using artificial intelligence (AI),
- give an account of basic legal requirements for the use of AI in connection with personal data,
- perform risk assessment processes for IT systems using AI,
- choose appropriate measures to manage specific privacy risks in AI-driven IT systems,
- explain and defend the choice of measures taken to protect privacy in machine learning scenarios,
- explain the concepts of privacy by design, privacy engineering, and risk assessment in

connection with AI-driven systems,
- discuss the legal and political debates surrounding the use of AI in a manner consistent with privacy, especially regarding data protection and data sharing in the European Union, and
- present and discuss the results of AI risk assessment, particularly technical requirements and benefits, in a scientific community.

Content
The course covers the most relevant definitions and basics in both data protection and artificial intelligence, particularly regarding machine learning models based on personal training data. Special emphasis is placed on the various approaches to identifying and managing privacy-related risks when using algorithms for artificial intelligence, as well as the legal requirements for IT systems using AI components, such as machine learning models or large language models. There is a focus on European and Swedish national legislation.

Reading List
See separate document.

Examination
Assessment is based on individual hand-in assignments and an oral exam.

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 Distinction (VG), Pass (G), or Fail (U) is awarded in the examination of the course. For students in Engineering, 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.

It is recommended (not required) for students to complete DVAD31 Introduction to Privacy and the GDPR before taking DVAD36.