Faculty of Health, Science and Technology
Computer Science

Syllabus

Privacy Engineering

Course Code:	DVAE27
Course Title:	Privacy Engineering *Integritetsteknik*
Credits:	7.5
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 2024-02-07, and is valid from the Autumn semester 2024 at Karlstad University.

Prerequisites
Internet Security and Privacy, 7.5 ECTS credits, plus upper secondary level English 6, or equivalent

Learning Outcomes
Upon completion of the course, students should be able to:
- identify threats and risks in relation to system integrity;
- understand basic legal requirements for the protection of privacy;
- explain the ideas and concepts behind different technologies used for privacy protection;
- select suitable technologies to comply with specific requirements for privacy protection in IT systems;
- explain and justify their choice of technologies for privacy protection in terms of different application scenarios;
- explain the concepts of data protection by design, anonymity, pseudonomity, unlinkability,

transparency, and influence;
- analyse and critically evaluate privacy enhancing technologies and their level of protection in software architecture;
- apply different anonymisation techniques;
- discuss the relevance of privacy enhancing technologies to comply with legal requirements, especially in relation to data protection and data sharing in the European Union; and
- present and discuss specific privacy enhancing technologies, especially their technical specifications and advantages, in the scientific community.

Content
The course comprises two parts, a lecture series and a seminar, each covering about half the course content.

The first part of the course introduces and explains the reasons for and concept of privacy enhancing technology in general, especially and in more detail the logic behind anonymisation and pseudonymisation. This part presents and discusses the objectives of privacy protection and strategies for designing it, as well as the current legal and technical situation when it comes to applying privacy enhancing technologies in IT systems. The basics of impact assessment in relation to data protection and selected highly relevant privacy enhancing technologies are explained in detail.

The second part of the course includes presentations on specific topics in the scientific discourse about privacy enhancing technologies, assigned to individual students at the beginning of the course. In the seminar, students present and discuss their conclusions with other students, and submit written reports about their topics.

Reading List
See separate document.

Examination
Assessment is based on individual seminar presentations and reports, plus an individual written 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 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.