



Faculty of Health, Science and Technology  
Computer Science

## Syllabus

### Reducing Internet Latency: Why and How

<b>Course Code:</b>	DVAD61
<b>Course Title:</b>	Reducing Internet Latency: Why and How <i>Fördröjningar över Internet: Betydelse och lösningar</i>
<b>Credits:</b>	1.5
<b>Degree Level:</b>	Master's level
<b>Progressive Specialisation:</b>	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 2018-09-09, and is valid from the Spring semester 2019 at Karlstad University.

#### Prerequisites

Upper secondary level English 6 or B. Computer Science 30 ECTS cr, or three years of work experience in the IT sector, or equivalent.

#### Learning Outcomes

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

- explain the relation between latency and data rate and the impact on quality of these parameters for different internet applications,
- give an account of latency sources and possible solutions to reduce latency,
- explain how a selection of active queue management algorithms work and how they interact with congestion control.

#### Content

The course explains the importance of latency for current internet applications. Different sources of delay and types of solutions for reducing latency are treated. Special emphasis is on queueing delay and how active queue management can reduce the problem and how it interacts with congestion control.

#### Reading List

See separate document.

#### Examination

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

#### Grades

One of the grades Distinction (VG), Pass (G), or Fail (U) is awarded in the examination of the course.

Engineering students are awarded one of the grades Pass with Distinction (5), Pass with Some Distinction (4), Pass (3) or Fail (U).

### **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**

DVAD61 cannot be included in the same degree programme as DVAD60 Future Internet Design and Service Quality.

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