



Faculty of Health, Science and Technology  
Computer Science

## Syllabus

### Multi-access Solutions

<b>Course Code:</b>	DVAD63
<b>Course Title:</b>	Multi-access Solutions <i>Lösningar för flervägskommunikation</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:

- describe how multi-access communication can be realised at different protocol layers and its advantages and disadvantages,
- explain different solutions for central components in multi-access communication such as path management, scheduling and congestion control,
- give examples of how multi-access communication can be implemented,
- identify for which applications and in which communication situations multi-access solutions can be expected to provide benefit.

#### Content

The module deals with the challenges and opportunities of multi-access communication. Examples of how multi-access communication can be realised at different layers in the protocol stack are discussed and key mechanisms such as path management, scheduling and congestion control are described. How to implement multi-access communication is illustrated on the basis of MPTCP and MPQUIC.

#### 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**

DVAD63 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.