



Faculty of Health, Science and Technology
Computer Science

Syllabus

Introduction to Dataplane Programming

Course Code: DVAD41

Course Title: Introduction to Dataplane Programming
Introduktion till dataplansprogrammering

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 2018-08-27, and is valid from the Spring semester 2019 at Karlstad University.

Prerequisites

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

Learning Outcomes

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

- give an account of basic principles and concept of Dataplane programmability and differences from Software Defined Networking,
- identify key challenges and differences between Software Defined Networking and Dataplane Programmability, and
- demonstrate broad knowledge of limitations and capabilities of the most common data plane programming language P4,
- implement and test small-scale P4 programs (e.g. Switch).

Content

The course covers the definition and foundations of data plane programming, and the difference between Software Defined Networking and Dataplane programming. The primary focus of the course is on recent developments such as the programming language P4. Students are introduced to the P4 language and the workflow of implementing and testing simple P4 programs. The limitations of P4 are treated as well as the problems that need to be considered when implementing a use case for the P4 language.

Reading List

See separate document.

Examination

Assessment is based on individual hand-in assignments and active participation in discussions.

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) 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

DVAD41 cannot be included in the same degree programme as DVAD40.

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