Reg No: DVGC02/20192

Faculty of Health, Science and Technology
Computer Science

Syllabus

Computer Networking II

Course Code:	DVGC02
Course Title:	Computer Networking II *Datakommunikation II*
Credits:	7.5
Degree Level:	Undergraduate level
Progressive Specialisation:	First cycle, has at least 60 credits in first-cycle course/s as entry requirements (G2F)

Major Field of Study:
DVA (Computer Science)

Course Approval
The syllabus was approved by the Faculty of Health, Science and Technology 2019-03-13, and is valid from the Autumn semester 2019 at Karlstad University.

Prerequisites
60 ECTS credits in Computer Science, including Computer Networking I, 7.5 ECTS credits, or equivalent

Learning Outcomes
The course is designed to give students the opportunity to follow current technological developments in the field and to specialise in a subarea of relevance to computer networking. Upon completion of the course students should be able to:
- demonstrate in-depth knowledge of software-based network technology (Software Defined Networking, SDN),
- demonstrate in-depth knowledge of network architectures and how to separate data and control plane,
- demonstrate in-depth knowledge of the data and control planes of SDN,
- demonstrate in-depth knowledge of Quality-of-Service (QoS) mechanisms (for instance Multi Protocol

Label Switching (MPLS)),
- give an account of the relevant principles and modes of operation in a specialisation area of software-based networking,
- specify how the specialisation area relates to the overriding functionality of computer networks, and, if applicable, implement simple solutions based on the techniques discussed in the course, and
- independently search for, collect, compile, and present information in an elective area of specialisation.

Content
The course includes a review of some current subareas of computer networking, and offers an opportunity to specialise on the basis of the course Computer Networking I. The areas dealt with can be subject to adjustment from one course instance to another. Principally, the course deals with the areas listed below:
- Networking architectures
- Quality of Service (QoS) mechanisms (for instance Multi Protocol Label Switching (MPLS)
- Multimedia communication (for instance signalling, IP telephony)
- Network management
- Software Defined Networking (SDN)

Attention is also paid to the ongoing technological development in the field.
Instruction is in the form of lectures, individual reading supported by study guides and supplementary material, hand-in assignments, laboratory sessions, and a specialisation assignment.

Reading List
See separate document.

Examination
Assessment is based on laboratory assignments, hand-in assignments, and a specialisation assignment. At least one of the examinations is individual and the identity of students submitting work for assessment is verified.

Grades
One of the grades Distinction (VG), Pass (G), or Fail (U) is awarded in the examination of the course. For Engineering students, one of the grades 5 (Pass with Distinction), 4 (Pass with Some Distinction), 3 (Pass), 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.