



## COURSE SYLLABUS

### Upplevd kvalitet i nätverksbaserade tjänster

### Quality of Experience in Network-based Services

7,5 ECTS credit points (7,5 högskolepoäng)

**Course code:** ET2601

**Educational level:** Second cycle

**Course level:** A1N

**Field of education:** Technology

**Subject group:** Electrical Engineering

**Subject area:** Electrical Engineering

**Version:** 4

**Applies from:** 2017-10-01

**Approved:** 2017-10-01

#### 1 Course title and credit points

The course is titled Quality of Experience in Network-based Services/Upplevd kvalitet i nätverksbaserade tjänster and awards 7,5 ECTS credits. One credit point (högskolepoäng) corresponds to one credit point in the European Credit Transfer System (ECTS).

#### 2 Decision and approval

This course is established by Dean 2016-06-07. The course syllabus was revised by Head of Department of Technology and Aesthetics and applies from 2017-10-01.

#### 3 Objectives

Service providers and operators pay much attention to the area of Quality of Experience (QoE) in network-based services. Better services imply more satisfied customers, and can therefore contribute to higher incomes. Service providers use measurements of perceived quality and like to use positive results for marketing purposes, while negative results are used as input for service development. Given this background, the course aims at providing students with insights, practical and interpretation skills with regards to how a quality measurement and evaluation process is run, which network behaviors and parameters affect the perception of different types of services, how to develop and interpret QoE models, and in which ways the service provisioning can be improved under given circumstances and boundary conditions.

#### 4 Content

The course covers the following parts:

- Definitions and descriptions of Quality of Experience (QoE)
- QoE assessment methods and tools
- Impact of different types of network parameters on QoE in general, and on different applications

- Control options for QoE
- Measurements of user reactions and user ratings
- Analysis and modelling of user ratings and QoE
- Ethical rules for user experiments
- Overview of standardization within this area

#### 5 Aims and learning outcomes

Knowledge and understanding

Upon completion of the course, the student shall be able to

- explain the meanings of various QoE definitions
- describe the implementation of, and rules for user experiments
- explain relationships between QoE and network parameters for different types of applications
- describe QoE-related standardisation

Skills and abilities

Upon completion of the course, the student shall be able to

- plan and execute user experiments
- develop and validate QoE models
- present results and conclusions

Evaluation ability and approach

Upon completion of the course, the student shall be able to

- analyse and assess results of user experiments
- interpret QoE models
- describe possibilities how to improved QoE under given circumstances

#### 6 Learning and teaching

The course is organised in lectures, exercises and project work.

English

#### 7 Assessment and grading

##### Examination of the course

Code	Module	Credit	Grade
1805	Exam	3 ECTS	A-F
1815	Project	4.5 ECTS	A-F

The course will be graded A Excellent, B Very good, C Good, D Satisfactory, E Sufficient, FX Fail, supplementation required, F Fail. The overall grade is obtained as weighted mean of exam grade and project grade.

#### **8 Course evaluation**

The course coordinator is responsible for systematically gathering feedback from the students in course evaluations and making sure that the results of these feed back into the development of the course.

#### **9 Prerequisites**

Admission to the course requires completed courses in Data Communication 7.5 credits and Mathematical Statistics 7.5 credits.

#### **10 Field of education and subject area**

The course is part of the field of education and is included in the subject area Electrical Engineering.

#### **11 Restrictions regarding degree**

The course cannot form part of a degree with another course, the content of which completely or partly corresponds with the contents of this course.

#### **12 Course literature and other teaching material**

Material from the department.

