



Course syllabus

Faculty Board of Science and Engineering
School of Computer Science, Physics and Mathematics

1ME207 XML-baserad medieteknik, 7,5 högskolepoäng
XML-based Media Technology, 7.5 credits

Main field of study

Media Technology

Subject Group

Media Production

Level of classification

First Level

Progression

G1F

Date of Ratification

Approved by Organisational Committee 2009-12-01

The course syllabus is valid from autumn semester 2010

Prerequisites

Mathematics B and knowledge within the subject of Design of Interactive Media, Introduction to higher Education in Media Technology, User-centered Interface Design (Design of Interactive Media 15 hec (1ME102), Introduction to Higher Education in Media Technology 15 hec (1ME105), User-centered Interface Design 7,5 hec (1ME106)) or the equivalent.

Expected learning outcomes

Upon completion of the course the student should:

- understand the principles for the structure of XML documents that are used to describe multimedia objects
- know how to deal with and to structure XML documents that handle multimedia objects on the world wide web
- know what XML-based multimedia technologies are, as well as the basic knowledge required in order to implement complex multimedia applications using these techniques
- be able to combine various types of XML-based multimedia objects in a web application
- be able to deal with design aspects, interactivity and effective visual communication using XML-based languages such as SMIL, SVG, X3D and KML
- be able to discuss relevant aspects of future development of multimedia technologies with the support of XML-based media technology

Content

The course consists of:

Extensible Markup Language (XML)

- an overview of XML and its features to handle and structure various types of documents

Extensible Stylesheet Language Transformation (XSLT)

- an overview of XSLT and its features to transform XML documents into different presentation formats.

An introduction to Scalable Vector Graphics (SVG)

- description and construction of graphical objects with SVG
- how XML and SVG are related
- basic concepts and structures in SVG

Introduction to Synchronized Multimedia Integration Language (SMIL)

- how XML and SMIL are related
- basic program structures in SMIL
- SMIL specification modules
- application areas
- design aspects

3D Graphics with XML

- description and construction of 3D objects with extensible 3D (X3D)
- how XML and X3D are related
- basic programming concepts in X3D

Handling of geographical information with XML

- description and handling of geographical information with Keyhole Markup Language (KML) language
- basic programming concepts in KML
- integration of the KML language in Google Maps

Type of Instruction

The campus course is based mainly on lectures, seminars, (even video conferences), tutorials and practical work. For a distance course, the communication is conducted through a Learning management system over the Internet.

Practical work is conducted individually or in groups. Attendance is mandatory for some sessions.

Examination

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).

On request, students may have their credits translated to ECTS-marks. Such a request must be sent to the examiner before the grading process starts.

Assessment of students' performance is made through presentation of compulsory assignments and a final written report.

Students who do not pass the regular examination are given the opportunity to do a resit examination shortly after the regular examination.

However, hand-in assignments must be submitted by the due date.

Course Evaluation

A written course evaluation will be carried out at the end of the course in accordance with the guidelines of the University. The course evaluation will be filed at the department.

Other

Upon request, a Swedish University course certificate will be issued upon successful completion of the course.

Students who receive a passing grade in the course may download a course certificate through the Student Portal. Otherwise they may request a course certificate from the school secretary.

Required Reading and Additional Study Material

Required reading

Harold, E. R., *XML 1.1 Bible, 3rd Edition*, John Wiley & Sons Ltd, 2004. Pages 150 (1054).

Bulterman, D. & Rutledge, L., *SMIL 2.0: Interactive Multimedia for Web and Mobile Devices*, Springer-Verlag Berlin And Heidelberg GmbH & Co, 2004. Pages 439.

DFM, *Web-based material*, Linnæus University, current year. Pages 150.

Recommended reading

Eisenberg, D., *SVG Essentials*, John Wiley & Sons, Ltd., 2002. Pages 364.