



## Course syllabus

Faculty of Technology

Department of Computer Science and Media Technology

1DV55U Introduktion till webbprogrammering, 7,5 högskolepoäng

Introduction to web programming, 7.5 credits

### Main field of study

Computer Science

### Subject Group

Informatics/Computer and Systems Sciences

### Level of classification

First Level

### Progression

G1F

### Date of Ratification

Approved by Faculty of Technology 2017-03-02

The course syllabus is valid from autumn semester 2017

### Prerequisites

(1DV006) Problem Solving and Programming or corresponding course in object oriented programming

## Objectives

The purpose of the course is that students will develop basic skills for web programming in a web browser. After completing the course the student should be able to:

- create web pages using html and css, (1)
- analyze problems and then to evaluate and choose appropriate design and construct the solution in the form of programs in the programming language JavaScript (2)
- describe a web browsers different internal components and their interactions including browser security mechanisms, (3)
- create web applications were JavaScript, HTML and CSS have clear roles and are clearly separated, (4)
- store and with asynchronous communication, transfer data with for the task appropriate data formats (5)
- create optimized and accessible custom single page applications with offline support and which takes advantage of the browser's native APIs. (6)

## Content

- The web browser (internal structure, security models, developer tools)
- JavaScript in relation to CSS and HTML
- Offline web applications
- Single Page Applications (SPA)

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- Optimization of client-based web applications
- An orientation about accessibility in web applications
- DOM (traversing, selecting, manipulating)
- Handling events in the browser
- Handling history in the browser
- Overview of the browser APIs and practical use of selected APIs
- Asynchronous communication (incl. Ajax)
- Data transfer formats (incl. JSON)

## Type of Instruction

Teaching is in the form of lectures with different forms of learning activities and labs. Theory combined with practical applications in problem solving oriented towards construction of client-based web applications.

The course can be studied at campus or remotely. The studies requires own access to a computer, headset, webcam and internet connection.

## Examination

The course is assessed with the grades A, B, C, D, E, Fx or F.

The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail (i.e. received the grade F).

Test 1: Examination Assignment 1 (1 credits). Goal 1 is examined through oral examination of a programming problem. The grades Fail (U), Pass (G) is applied.

Test 2: Examination Assignment 2 (3 credits). Goals 2-5 are examined through oral examination of a programming problem. The grades Fail (U) or Pass (G) is applied.

Test 3: Examination Assignment (3.5 credits). Goals 2-6 are examined through oral examination of a programming problem. The grades A-F is applied.

## Course Evaluation

During the course or in close connection to the course, a course evaluation is to be carried out. The result and analysis of the course evaluation are to be communicated to the students who have taken the course and to the students who are to participate in the course the next time it is offered. The course evaluation is carried out anonymously. The compiled report will be filed at the Faculty.

## Credit Overlap

The course cannot be included in a degree along with the following course/courses of which the content fully, or partly, corresponds to the content of this course: 1DV022 Clientbased Web Programming, 7.5 credits

## Other

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

Course learning resources are open through the course's public website.

## Required Reading and Additional Study Material

### Recommended learning resources

- Marijn Haverbeke, Eloquent JavaScript, No Starch Press, latest edition.
- Mozilla Developer Network ([//developer.mozilla.org](http://developer.mozilla.org))
- Web-based resources specified on the web page of the course.

### **Additional learning resources**

- Nicolas C. Zakas, Professional JavaScript for Web Developers, John Wiley & Sons Inc., latest edition.