Course Specifications
Valid as from the academic year 2023-2024

Webdevelopment (C003779)

Lecturers in academic year 2024-2025
Verborgh, Ruben
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Offered in the following programmes in 2024-2025
Bachelor of Science in Computer Science

Teaching languages
Dutch

Keywords
Web, Web technology, Web applications, Web servers, HTTP, URL, Web APIs, REST, Linked Data, decentralization, standardization, JavaScript.

Position of the course
Through this course, students learn the basic principles and architecture of the Web, and they study the impact of design decisions on a low level on Web applications at a large scale. In addition to these transferrable skills, they gain experience with current Web technologies and infrastructure. We embed these technologies in the broader socio-economic reality, and study scientific literature that enables progress in this domain.

Contents
1 Socio-economic and historical context of the Web
2 Web architecture, protocols, and standards
3 Design and implementation of Web APIs
4 Data on the Web
5 Decentralization
6 Concrete Web applications and case studies

Initial competences
• Creating basic webpages using HTML and CSS.
• Programming in JavaScript (including classes and asynchronous code).
• Understanding how the TCP/IP and DNS protocols work.

Final competences
1 Understanding the architecture of the Web.
2 Understanding the mechanisms of HTTP.
3 Looking up Web standards and applying them.
4 Building dynamic Web applications.
5 Deploying Web applications to a server.
6 Arguing the consequences and applicability of the REST architectural style.
7 Implementing Web APIs.
8 Consuming Web APIs.
9 Publish interoperable data on the web using standards.
10 Assessing the impact of (de-)centralization.
11 Designing and building decental applications.
12 Positioning the Web's societal role and technological contribution.
13 Critically interpreting communication on Web technology.

(Approved)
Access to this course unit via a credit contract is determined after successful competences assessment.

This course unit cannot be taken via an exam contract.

Group work, Seminar, Lecture, Independent work

Contact with the lecturers (through email and in person after appointment)

Supervised labs

End-of-term and continuous assessment

Oral assessment

Oral assessment

Peer and/or self assessment, Assignment

Examination during the second examination period is possible in modified form

Non-periodical evaluation

Labs in groups

Support by generative AI systems permitted

Periodical evaluation

Oral examination

Written preparation

Open book

Open Web

Support by generative AI systems permitted

The final grade is the average grade of the two parts (exam and labs).

In case the grade for any part is less than 10/20, the final grade is capped at 9/20.

In case the grade for any part is 7/20 or less, the final grade is capped at 7/20.

For students who have not passed the permanent evaluation, an alternative assignment is provided in the second examination period. Depending on the situation, it may be in a group and/or may be an extension of the original assignment.

Possibility to perform an individualized version of the practical sessions, given a timely notification at the start of the semester.

None