

## Webdevelopment (C003779)

**Course size** *(nominal values; actual values may depend on programme)*

**Credits 6.0**

**Study time 180 h**

**Course offerings and teaching methods in academic year 2024-2025**

A (semester 2)

Dutch

Gent

lecture

**Lecturers in academic year 2024-2025**

Verborgh, Ruben

TW06

lecturer-in-charge

Taelman, Ruben

TW06

co-lecturer

**Offered in the following programmes in 2024-2025**

[Bachelor of Science in Computer Science](#)

**crdts**

6

**offering**

A

**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 decentral applications.
- 12 Positioning the Web's societal role and technological contribution.
- 13 Critically interpreting communication on Web technology.

**Conditions for credit contract**

Access to this course unit via a credit contract is determined after successful competences assessment

**Conditions for exam contract**

This course unit cannot be taken via an exam contract

**Teaching methods**

Group work, Seminar, Lecture, Independent work

**Study material**

None

**References****Course content-related study coaching**

- contact with the lecturers (through email and in person after appointment)
- supervised labs

**Assessment moments**

end-of-term and continuous assessment

**Examination methods in case of periodic assessment during the first examination period**

Oral assessment

**Examination methods in case of periodic assessment during the second examination period**

Oral assessment

**Examination methods in case of permanent assessment**

Peer and/or self assessment, Assignment

**Possibilities of retake in case of permanent assessment**

examination during the second examination period is possible in modified form

**Extra information on the examination methods**

- **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

**Calculation of the examination mark**

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.

**Facilities for Working Students**

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