

Course

WEB2 - Web Engineering 2 (Frontend)

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^ General information

Long name	Web Engineering 2 (Frontend)
Approving CModule	WEB2_BaMT
Responsible	NN Lehrbeauftragter
Level	Bachelor
Semester in the year	winter semester
Duration	Semester
Hours in self-study	60
ECTS	5
Professors	Prof. Dr.-Ing. Luigi Lo Iacono ehemaliger Professor Fakultät IME
Requirements	<ul style="list-style-type: none">- Knowledge and competence in the development of computer programs and in the handling of a programming language (e.g. Java, Python or Go) as well as common development tools (e.g. IDE) are required.- Knowledge and skills in relation to basic algorithms (sorting, searching) and data structures (lists, sets, maps) are required.- Knowledge and skills in IP-based computer networks and in the handling of HTTP are required.- Knowledge and skills in the analysis, design, implementation, evaluation and operation of web-based backend systems are required.
Language	German, English if necessary
Separate final exam	Yes

Final exam

Details

In a final examination (written, optional oral), the students demonstrate their competences summarily. The examination includes exemplary parts of the course.

Minimum standard

Achieving the individual minimum score per exam, typically 50% of the maximum score.

Exam Type

In a final examination (written, optional oral), the students demonstrate their competences summarily. The examination includes exemplary parts of the course.

^ Lecture / Exercises

Learning goals

Knowledge

- Anatomy of Web-based systems (reference model)
 - Architecture pattern (client-side MVC)
 - Frontend concepts of web-based systems (SPA, hybrid App, PWA)
 - Frontend Components (browser, browser add-ons, browser cache, local storage, service worker)
 - Frontend technologies (HTML, CSS, JavaScript, DOM, XHR, HTML5 APIs)
 - Protocols (WebSockets, WebRTC) and forms of communication (polling, long-polling)
 - Present and create relationships and dependencies between frontend systems/components and backend systems/components
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Skills

- Analyse and structure tasks in the environment of web-based developments, assign relevant standards and transfer them to system designs
- Implementing frontend systems/components of a Web-based system
- Explain frontend systems/components, tasks and technical parameters, and structure them
- Analyzing frontend systems/components using suitable tools and presenting results in a comprehensible manner
- Planning, setting up, and operating frontend systems/components
- Estimate and analyze performance of frontend systems
- Derive information from original English sources and standards

Expenditure classroom teaching

Type	Attendance (h/Wk.)
Lecture	2
Exercises (whole course)	1
Exercises (shared course)	0

Separate exam

none

^ Practical training

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Skills

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Expenditure classroom teaching

Type	Attendance (h/Wk.)
Practical training	2
Tutorial (voluntary)	0

Separate exam

Exam Type

interview (discussion) about special issues in scenario, project assignment or literature research

Details

Several appointments have to be attended. In each appointment, independently developed solutions to subtasks are to be presented in the technical discussion, if necessary with the use of assistance and/or completion of missing or wrong solution parts. The subtasks add up to the total solution of the development task accompanying the lecture (both parts WEB1 and WEB2).

Minimum standard

Successful participation in 80% of all appointments. Correct solution of all subtasks and complete implementation of the web application (development task accompanying the lecture).