

Syllabus for the course

WEB TECHNOLOGIES

Course code:	4IZ268
Course title in language of instruction:	Webové technologie
Course title in Czech:	Webové technologie
Course title in English:	Web Technologies
Number of ECTS credits allocated:	6
Mode of delivery:	full-time; 2/2 (hours of lectures per week / hours of seminars per week) as semestral course
Mode of completion:	graded course
Language of instruction:	Czech
Level of course and year of study:	bachelor (first cycle): 2; master (second cycle): 1
Semester:	WS 2018/2019
Name of lecturer(s):	Ing. Kateřina Jeníčková (examiner, instructor) Ing. Jiří Kosek (examiner, instructor, lecturer, supervisor) Ing. Viet Bach Nguyen (examiner, instructor) Ing. et Ing. Stanislav Vojtíš, Ph.D. (examiner, instructor)
Prerequisites and co-requisites:	not to be taken after 4IZ228
Recommended optional programme components:	none
Work placement:	none

Aims of the course:

Students will get familiar with technologies and practices used in development of modern web sites and applications. Apart from learning HTML and CSS languages they will learn how to create interactive browser-based applications in Javascript. Emphasis is put not only on HTML language and related technologies but also on development of concise, accessible and easy-to-use pages and on the whole web-site life cycle. Goal of labs is mastering of technologies taught during lectures.

Learning outcomes and competences:

Upon successful completion of this course, students will be able to create accessible and usable web pages using HTML and CSS, augmented with Javascript interactive features and embedded external services.

Course contents:

Introduction

- WWW architecture
- Webu history, HTML, XHTML a HTML5
- HTML syntax and semantics
- automatic syntax checking

Cascading stylesheets

- principles, rules, selectors, basic properties
- advanced features (animations, transformations, media queries, fonts, ...)

Multimedia

- picture, video and audio inclusion
- formats, codecs, streaming
- SVG

Web Design

- graphic design workflows
- information architecture, navigation

- usability, UX
 - accessibility
 - design approaches: responsive design, "mobile first", ...
- SEO
- principles
 - web analytics
 - semantics on the web (microdata, RDFa, schema.org)
- Javascript
- intro, language basics, HTML integration
 - DOM
 - event handling
- AJAX
- principles, advantages/disadvantages of AJAX
 - AJAX and web architecture/principles
 - single-page-applications (SPA)
- JS frameworks
- for example jQuery, Angular, React, ...
- JS API
- WebStorage
 - Canvas
 - WebGL
 - Geolocation
- Labs
- Exercising of HTML and CSS coding
 - Using frameworks (eg. Bootstrap)
 - Javascript

Learning activities, teaching methods and workload (hours):

Type of teaching method	Hours of workload
	Daily attendance
Participation in lectures	26
Preparation for lectures	13
Attendance at seminars/workshops/tutorials	26
Preparation for seminars/workshops/tutorials	26
Preparation of term paper	50
Preparation for final test	17
Total	158

Assessment methods and criteria:

Requirement type	Weight
	Daily attendance
Active lecture/seminar/workshop/tutorial participation	10 %
Term paper	50 %
Final test	40 %
Total	100 %

Assessment:

- Graded courses
- 1 Excellent (90 – 100%)
 - 2 Very good (75 – 89%)
 - 3 Good (60 – 74%)
 - 4 Insufficient (0 – 59%)

Ungraded courses
P Passed
NP Not Passed

Special requirements and details:

none

Reading:

Type*	Author	Title	Published in	Publisher	Year	ISBN
RQ	STANÍČEK, P.	CSS kaskádové styly : kompletní průvodce	Praha	Computer Press	2003	80-7226-872-4
RQ	KRUG, S.	Nenuťte uživatele přemýšlet! : praktický průvodce testováním a opravou chyb použitelnosti webu	Brno	Computer Press	2010	978-80-251-2923-4
RQ	ŠPINAR, D.	Tvoříme přístupné webové stránky : připraveno s ohledem na novelu Zákona č. 365/2000 Sb., o informačních systémech veřejné správy	Brno	Zoner Press	2004	80-86815-11-0
RE	STANÍČEK, P.	CSS : hotová řešení	Brno	Computer Press	2006	80-251-1031-1
RE	KOSEK, J.	HTML5 – tvorba dokonalých WWW stránek (elektronická verze dostupná na http://htmlguru.cz) 2015				
RE	Pilgrim, M.	HTML5: Up and Running (elektronická verze dostupná na http://kniha.html5.cz/) O'Reilly Media 2010 978-0-596-80602-6				
RE	Staniček, P.	Dobrý designér to všechno ví! 2016. ISBN: 978-80-260-9427-2.				

* RQ – required RE – recommended