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| 1. Course title: Web Programming II. | | | | | |
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| 2. Code: | | 3. Type (lecture, practice etc.): seminar | | | |
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| 4. Contact hours: 2+2 hoursper week | | 5. Number of credits (ECTS): 5 | | | |
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| 6. Preliminary conditions (max. 3): Web Programming I. | | | | | |
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| 7. Announced:fall semester, spring semester, both | | | | | |
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| 8. Limit for participants: 24 | | | | | |
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| 10. Responsible teacher (faculty, institute and department):  Viktor Rébay (Faculty of Science, Institute of Mathematics and Informatics, Department of Informatics) | | | | | |
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| 11. Teacher(s) and percentage: | | Viktor RÉBAY | | 100% | |
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| 12. Language:English | | | | | |
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| 13. Course objectives and/or learning outcomes:  The seminar is the follow up of Web Programming I., and intends to improve students’ knowledge and skills to create modern websites. Students completing the course will have knowledge to develop more complex websites, taking also web ergonomics and the variety of devices into consideration. With the acquired knowledge and experiences students will be able to identify, understand, and use other modern tools and technologies in the field of web development. | | | | | |
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| 14. Course outline   1. Basics and importance of version control. Version control using Git. Working with repositories and repository types. Synchronizing local and remote repositories. Git branching. Learning and using the most common Git commands. 2. Getting started with JavaScript programming. Basic concepts, programming, embedding and testing the first JS code. Using JS variables, data types, converting between data types. Understanding expressions and operators, operator precedence in JavaScript. Controlling flow with conditions and loops. 3. Using numeric and string arrays in JavaScript. Using array functions, sorting arrays. Working with dates. Understanding and using JavaScript objects, hiding and showing objects. 4. Understanding event handlers, responding to events. Using and programming mouse events. Using and programming keyboard events. Using and controlling some other common events. Refreshing pages with timer. 5. Manipulating elements with jQuery. Selecting, creating, and removing elements. Selecting elements based on different aspects (e.g. by ID, class name, attribute, etc.). Determining the size and position of page elements. Event management. Customizing and enhancing web forms with jQuery. 6. Embedding and customizing jQuery widgets using jQuery UI. A brief survey of some popular third party jQuery libraries. 7. Getting started with AngularJS. Expressions in AngularJS, differences in comparison with JavaScript. Popular modules in AngularJS. Built-in directives of AngularJS, directive types. Directives and event listeners. Using filters. Custom validation, implementing custom form controls. 8. Process and tools to build responsive websites. Designing for mobile first. HTML and CSS for responsive web design. Making typical website elements (fonts, images, multimedia elements, tables, and web forms) responsive. Testing responsive web pages. 9. The advantages of Bootstrap, and the importance of its usage. The basic Bootstrap typography. Panels, buttons, lists, labels in Bootstrap. Styling tables and forms. Creating navigation systems with Bootstrap. 10. Scripting XML and JSON. The JSON schema, valid data types. Creating and using JSON schemas. 11. Improving user experience and interactivity on web pages, using AJAX. Designing and implementing AJAX based user interfaces. Navigation with AJAX, typical implementations and problems. 12. Individual presentations of the mid-semester assignments. 13. Final exam. | | | | | |
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| 15. Mid-semester works  Each student develops a web page for a real or fictive company, using the tools and techniques learned in the semester. The evaluation is based on the content, design, implementation (source code, compliance with web standards), and also depends on the individual presentation of the work. | | | | | |
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| 16. Course requirements and grading  The final grade is based on the individual mid-semester assignment (30%) and the result of the final exam (70%). After the deadline, mid-term assignment cannot be improved, corrected or (re)submitted. Final exam can be repeated in the first and second weeks (1-1 times) of the exam period. Based on the results of mid-semester assignment and final exam, grades will be calculated according to the following: 0–50% - fail (1), 50–60% - acceptable (2), 60–70% - average (3), 70–80% - good (4), 80–100% - excellent (5). | | | | | |
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| 17. List of readings   1. Julie C. Meloni: HTML, CSS and JavaScript All in One, Sams Teach Yourself: Covering HTML5, CSS3, and jQuery (2nd Edition). Sams Publishing, 2014. ISBN: 9780672337147 2. Jennifer Kyrnin: Responsive Web Design in 24 Hours. Sams Publishing, 2014. ISBN: 9780672338380 3. Brad Dayley: AngularJS, JavaScript, and jQuery All in One. Sams Publishing, 2015. ISBN: 9780672337420 4. Jennifer Kyrnin: Bootstrap in 24 Hours. Sams Publishing, 2015. ISBN: 9780672337048 5. Anthony T. Holdener III: Ajax: The Definitive Guide: Interactive Applications for the Web. O'Reilly Media, 2008. ISBN: 9780596528386 6. Matt Zandstra: Teach Yourself PHP in 24 Hours (3rd Edition). Sams, 2003. ISBN: 9780672326196 | | | | | |
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| 18. Recommended texts, further readings | | | | | |
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| **Date** | 10 May, 2017 | **Prepared by** |  | | |
| Viktor RÉBAY  responsible teacher | | |
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| **Endorsed by** | | |  | | |
| program supervisor | | |