

## syllabus

### 1. Information regarding the programme

1.1 Higher education institution	<b>Babeş-Bolyai University</b>
1.2 Faculty	<b>Faculty of Mathematics and Computer Science</b>
1.3 Department	<b>Department of Computer Science</b>
1.4 Field of study	<b>Computer Science</b>
1.5 Study cycle	<b>Master</b>
1.6 Study programme / Qualification	<b>Distributed Systems in Internet</b>

### 2. Information regarding the discipline

2.1 Name of the discipline (en)	<b>Adaptive Web Design</b>				
(ro)	<b>Web design adaptiv</b>				
2.2 Course coordinator	<b>Assoc. Prof. PhD. Sanda-Maria Avram</b>				
2.3 Seminar coordinator	<b>Assoc. Prof. PhD. Sanda-Maria Avram</b>				
2.4. Year of study	<b>1</b>	2.5 Semester	<b>2</b>	2.6. Type of evaluation	<b>E</b>
				2.7 Type of discipline	<b>DS</b>
2.8 Code of the discipline					

### 3. Total estimated time (hours/semester of didactic activities)

3.1 Hours per week	3	Of which: 3.2 course	2	3.3 seminar/laboratory	1
3.4 Total hours in the curriculum	36	Of which: 3.5 course	24	3.6 seminar/laboratory	12
Time allotment:					hours
Learning using manual, course support, bibliography, course notes					39
Additional documentation (in libraries, on electronic platforms, field documentation)					30
Preparation for seminars/labs, homework, papers, portfolios and essays					50
Tutorship					8
Evaluations					12
Other activities: .....					
3.7 Total individual study hours	139				
3.8 Total hours per semester	175				
3.9 Number of ECTS credits	7				

### 4. Prerequisites (if necessary)

4.1. curriculum	
4.2. competencies	<ul style="list-style-type: none"> <li>● Basic programming skills in web client-side technologies (HTML, CSS, JavaScript)</li> </ul>

### 5. Conditions (if necessary)

5.1. for the course	<ul style="list-style-type: none"> <li>● A lecture class with video projector</li> </ul>
5.2. for the seminar /lab	<ul style="list-style-type: none"> <li>● Laboratory with computers connected to the Internet; web servers for</li> </ul>

activities	hosting websites.
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## 6. Specific competencies acquired

<b>Professional competencies</b>	<ul style="list-style-type: none"> <li>● Knowledge, understanding and use of basic concepts of theoretical Computer Science</li> <li>● Ability to work independently and/or in a team in order to solve problems in defined professional contexts.</li> <li>● Abilities to develop and maintain software systems</li> </ul>
<b>Transversal competencies</b>	<ul style="list-style-type: none"> <li>● Knowledge, understanding of web standards (HTML and CSS)</li> <li>● Ability to design optimal websites.</li> <li>● Developing website evaluation and validation skills so that the developed sites to comply with the standards, be responsive and perform better for search engines and accessibility</li> </ul>

## 7. Objectives of the discipline (outcome of the acquired competencies)

7.1 General objective of the discipline	<ul style="list-style-type: none"> <li>● Learning, understanding and applying the web standards (HTML and CSS).</li> <li>● Developing website creation, evaluation and validation skills so that the developed sites to comply with the standards, be responsive (i.e., adapt to any device: telephone, tablet, netbook, laptop, desktop or TV) and perform better for search engines and accessibility.</li> </ul>
7.2 Specific objective of the discipline	<ul style="list-style-type: none"> <li>● Using HTML for structure and CSS for presentation</li> <li>● Acquire knowledge about the web site development process</li> <li>● Evaluating and Optimizing a website</li> <li>● Developing skills to use the most advanced web design skills such as: <ul style="list-style-type: none"> <li>○ Using preprocessors like SASS or LESS</li> <li>○ Using object oriented CSS (OOCSS)</li> <li>○ Using the block-element-model (BEM)</li> <li>○ Using web fonts and knowing the typography elements</li> <li>○ Using the golden ratio and the color theory in web design</li> <li>○ Create responsive web sites that can adapt to any device</li> <li>○ Use the progressive enhancement process</li> <li>○ Accessibility (create sites for everyone)</li> </ul> </li> </ul>

## 8. Content

8.1 Course	Teaching methods	Remarks
1-3 Understanding the standards · HTML from HTML 2.0 to HTML 5 · CSS from CSS 1.0 to CSS 3 · HTML Markup for structure · CSS for presentation	Interactive exposure · Explanation · Conversation · Didactical demonstration	This lecture is held during the second semester of the final year of bachelor study and therefore there are only 12 weeks/lectures
4-9 The site development process; · Planning and site definition · Interface design · Site design · Page design · Typography · Graphics · Multimedia · Tracking, evaluation and maintenance	Interactive exposure · Explanation · Conversation · Didactical demonstration	Here, students will learn about responsive design and progressive enhancement, accessibility and the most innovative web development techniques like OOCSS, SAMCS, BEM, pre-

		processors, minification and mixins. They also find out about useful existing instruments like resets, grids and frameworks.
10-12 Web site optimization · Speed optimization · Search engine optimization · Web analytics	Interactive exposure · Explanation · Conversation · Didactical demonstration	Here students will find out about code quality, best practices, validation and evaluation instruments used for optimization.

### Bibliography

1. **Duckett, J.**, HTML and CSS: Design and Build Websites, John Wiley & Sons, USA, 2011.
2. **Gardner, L.D.**, Jason Grigsby, Head First Mobile Web, O'Reilly Media, 2011
3. **Gustafson, A.**, Adaptive Web Design. Crafting Rich Experiences with Progressive Enhancement, Easy Readers, ISBN: 978-0-9835895-2-5, 2011, <http://kammerkunst.de/data/AdaptiveWeb-Design.pdf>
4. **Krug, S.**, Don't Make Me Think. A Common Sense Approach to Web Usability, New Riders, 2nd Edition, ISBN: 0-321-34475-8, 2006, <http://web-profile.com.ua/wp-content/uploads/stevekrug-dont-make-me-think-second-edition.pdf>
5. **Krug, S.**, Rocket Surgery Made Easy. The Do-It-Yourself Guide to Finding and Fixing Usability Problems, New Riders, ISBN:978-0321657299, 2010
6. **Lynch, P.J., Horton, S.**, Web Style Guide: Basic Design Principles for Creating Web Sites, Yale University Press, 3rd edition, ISBN-13: 978-0300137378, 2009, <http://www.webstyleguide.com>
7. **Marcotte, E.**, Responsive Web Design, A Book Apart, ISBN: 978-0984442577, 2011
8. **Purewal, S.**, Learning Web App Development, O'Reilly Media, USA, 2014.
9. **Robbins J.N.**, Learning Web Design: A Beginner's Guide to HTML, CSS JavaScript, and Web Graphics, 4<sup>th</sup> Edition, O'Reilly Media, USA, 2012.
10. **Sebesta, R.W.**, Programming the World Wide Web, 7<sup>th</sup> Edition, Pearson Education Limited, USA, 2014.
11. **Warren, T.**, ASP.NET For Beginners: The Simple Guide to Learning ASP.NET Web Programming FAST!, 2015.
12. **Watrall, E., Siarto, J.**, Head First Web Design, O'Reilly Media, ISBN: 978-0-596-52030- 4, 2008, <http://it-ebooks.info/book/378/>
13. <https://www.w3.org/standards/webdesign/>

8.2 Seminar / laboratory	Teaching methods	Remarks
1. Analyzing a website	Explanation, dialogue, case studies	The seminar is structured as 2 hours classes every second week.
2. Develop a simple site	Dialogue, debate, case studies, examples, proofs	
3. Complying with the standards; HTML and CSS validation	Dialogue, debate, case studies, examples, proofs	
4. Building the optimal structure for a specified type of site; building the optimal layout	Dialogue, debate, case studies, examples, proofs	
5. Typography, graphics and multimedia	Dialogue, debate, case studies, examples, proofs	
6. Evaluating the site; structure, elements, speed and accessibility; improve site as result of the evaluation	Dialogue, debate, case studies, examples, proofs	

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1. **Gustafson, A.**, Adaptive Web Design. Crafting Rich Experiences with Progressive Enhancement, Easy Readers, ISBN: 978-0-9835895-2-5, 2011, <http://kammerkunst.de/data/AdaptiveWeb-Design.pdf>
2. **Krug, S.**, Don't Make Me Think. A Common Sense Approach to Web Usability, New Riders, 2nd Edition, ISBN: 0-321-34475-8, 2006, <http://web-profile.com.ua/wp-content/uploads/stevekrug-dont-make-me-think-second-edition.pdf>
3. **Lynch, P.J., Horton, S.**, Web Style Guide: Basic Design Principles for Creating Web Sites, Yale University Press, 3rd edition, ISBN-13: 978-0300137378, 2009, <http://www.webstyleguide.com>
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5. <https://www.w3.org/standards/webdesign/>

## 9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations and representative employers within the field of the program

- The course addresses a relatively new domain that is rising in recent years (from 2008) and enjoys increasing interest from the scientific community and industry.
- The course is reflected in the curricula of other universities, with similar syllabus. At the same time the content presented in the course is discussed in the literature.
- The content of the course is considered by the software companies as important for average programming skills

## 10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.4 Course	- know the basic principle of the domain; - apply the course concepts - problem solving	Project presentation	60%
10.5 Seminar/lab activities	- be able to implement with the standards; a small project that proves HTML and CSS correct usage.	Practical examination -documentation -portfolio -continuous observations	20%
	Developing a personal project: creating a website or a web page structure on a certain theme that complies with the HTML and CSS standards and applies the concepts presented during the course.	Early stages of the final project	20%
10.6 Minimum performance standards			
<ul style="list-style-type: none"><li>• In order to successfully pass this class, the project presentation and the final mark must be at least 5.</li></ul>			

Date

Signature of course coordinator

Signature of seminar coordinator

28.02.2017

Assoc.Prof.PhD. Sanda-Maria Avram

Assoc.Prof.PhD. Sanda-Maria Avram

Date of approval

Signature of the head of department

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Univ. Prof. PhD. Anca Andreica