

## 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>Sisteme informatice avansate - limba germană și engleză</b>

### 2. Information regarding the discipline

2.1 Name of the discipline (en) (ro)	<b>Adaptive Web Design</b> <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>2</b>	2.5 Semester	<b>3</b>	2.6. Type of evaluation	<b>E</b>	2.7 Type of discipline	<b>DS</b>
2.8 Code of the discipline	<b>MME8120</b>						

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

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

#### 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 activities	<ul style="list-style-type: none"><li>• Laboratory with computers connected to the Internet; web servers for hosting websites.</li></ul>

#### 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>
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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>
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## 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.
10-14 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.
1. Develop a simple site	Dialogue, debate, case studies, examples, proofs	
1. Complying with the standards; HTML and CSS validation	Dialogue, debate, case studies, examples, proofs	
1. Building the optimal structure for a specified type of site; building the optimal layout	Dialogue, debate, case studies, examples, proofs	
1. Typography, graphics and multimedia	Dialogue, debate, case studies, examples, proofs	
1. 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>
4. **Watrall, E., Siarto, J.**, Head First Web Design, O'Reilly Media, ISBN: 978-0-596-52030-4, 2008, <http://it-ebooks.info/book/378/>
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%
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10.6 Minimum performance standards

- In order to successfully pass this class, the project presentation and the final mark must be at least 5.

Date	Signature of course coordinator	Signature of seminar coordinator
04.07.2023	Assoc.Prof.PhD. Sanda-Maria Avram	Assoc.Prof.PhD. Sanda-Maria Avram

Date of approval	Signature of the head of department
.....	Prof. Univ. Laura DIOŞAN