SYLLABUS

1. Information regarding the programme

1.1 Higher education institution	**Babeş-Bolyai University**
1.2 Faculty	**Faculty of Mathematics and Computer Science**
1.3 Department	**Department of Computer Science**
1.4 Field of study	**Computer Science**
1.5 Study cycle	**Bachelor**
1.6 Study programme / Qualification	**Computer Science**

2. Information regarding the discipline

2.1 Name of the discipline	**Web Design and Optimization**						
2.2 Course coordinator	**Lect. PhD. Sanda-Maria Dragoş**						
2.3 Seminar coordinator	**Lect. PhD. Sanda-Maria Dragoş**						
2.4. Year of study	**3**	2.5 Semester	**6**	2.6. Type of evaluation	**C**	2.7 Type of discipline	optional

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					15
Additional documentation (in libraries, on electronic platforms, field documentation)					35
Preparation for seminars/labs, homework, papers, portfolios and essays					20
Tutorship					9
Evaluations					10
Other activities:					-

3.7 Total individual study hours	89
3.8 Total hours per semester	125
3.9 Number of ECTS credits	5

4. Prerequisites (if necessary)

4.1. curriculum	
4.2. competencies	Basic programming skills in web client-side technologies (HTML, CSS, JavaScript)

5. Conditions (if necessary)

5.1. for the course	A lecture class with video projector
5.2. for the seminar /lab activities	Laboratory with computers connected to the Internet; web servers for hosting websites.

6. Specific competencies acquired

Professional competencies	• Identify appropriate methodologies for developing software systems • Identify and explain the mechanisms for specifying software systems • Use methodologies and mechanisms for specifying and development environments to achieve computer applications • Use appropriate criteria and methods for evaluating software applications • Implement projects dedicated computer
Transversal competencies	• Applying organized and efficient work rules, the responsible attitudes of the scientific teaching for creative exploitation of their potential with the principles and rules of professional ethics. • Use effective methods and techniques of learning, information, research and capacity to exploit knowledge to adapt to a dynamic society and communication in Romanian language and in a foreign language

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

7.1 General objective of the discipline	• Learning, understanding and applying the web standards (HTML and CSS). • 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.

7.2 Specific objective of the discipline	• Using HTML for structure and CSS for presentation
	• Acquire knowledge about the web site development process
	• Evaluating and Optimizing a website
	• Developing skils to use the most advanced web design skills such as:
	  o Using preprocessors like SASS or LESS
	  o Usign object oriented CSS (OOCSS)
	  o Using the block-element-model (BEM)
	  o Using web fonts and knowing the typography elements
	  o Using the golden ratio and the color theory in web design
	  o Create responsive web sites that can adapt to any device
	  o Use the progressive enhancement process
	  o Accesibility (create sites for everyone)

8. Content

8.1 Course	Teaching methods	Remarks
1-3 Understanding the standards • HTML from HMTL 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. Thei 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. Patrick J. Lynch and Sarah Horton, *Web Style Guide: Basic Design Principles for Creating Web Sites*, Yale University Press, 3rd edition, ISBN-13: 978-0300137378, January 15, 2009, http://www.webstyleguide.com/
2. Ethan Watrall and Jeff Siarto, *Head First Web Design*, O'Reilly Media, ISBN: 978-0-596-52030-4, 2008, http://it-ebooks.info/book/378/
3. Steve Krug, *Don't Make Me Thik. A Common Sense Approach to Web Usability*, New Riders, Second Edition, ISBN: 0-321-34475-8, 2006, http://web-profile.com.ua/wp-content/uploads/steve-krug-dont-make-me-think-second-edition.pdf
4. Steve Krug, *Rocket Surgery Made Easy. The Do-It-Yourself Guide to Finding and Fixing Usability Problems*, New Riders, ISBN:978-0321657299, 2010
5. Ethan Marcotte, *Responsive Web Design*, A Book Apart, ISBN: 978-0984442577, 2011
6. Aaron Gustafson, *Adaptive Web Design. Crafting Rich Experiences with Progressive Enhancement*, Easy Readers, ISBN: 978-0-9835895-2-5, 2011, http://kammerkunst.de/data/Adaptive-Web-Design.pdf
7. Lyza Danger Gardner, Jason Grigsby, *Head First Mobile Web*, O'Reilly Media, 2011
8. http://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	

Bibliography

1. Patrick J. Lynch and Sarah Horton, *Web Style Guide: Basic Design Principles for Creating Web Sites*, Yale University Press, 3rd edition, ISBN-13: 978-0300137378, January 15, 2009,

http://www.webstyleguide.com/
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3. Steve Krug, *Don't Make Me Thik. A Common Sense Approach to Web Usability*, New Riders, Second Edition, ISBN: 0-321-34475-8, 2006, http://web-profile.com.ua/wp-content/uploads/steve-krug-dont-make-me-think-second-edition.pdf
4. http://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			
➢ At least grade 5 (from a scale of 1 to 10) at the written exam, final project and laboratory work.			

Date	Signature of course coordinator	Signature of seminar coordinator
.....	Lect. PhD. Sanda-Maria Dragos	Lect. PhD. Sanda-Maria Dragos

Date of approval ..... Signature of the head of department .....