

Web Development

Prerequisites:		Programming, networks and databases			
Learning outcomes:		<p>As a result of discipline studying students should know:</p> <ul style="list-style-type: none"> • basic concepts in the field web-applications development • markup languages (HTML, XML) and related technologies (CSS, XHTML, AJAX) • client side programming using script languages • basic concepts server side programming (PHP, JSF) be able: • to make HTML documents containing simple scripts • develop server-side applications with chosen script language • to analyse the security of web-applications <p>have an idea:</p> <ul style="list-style-type: none"> • of web-programming using frameworks • Flash and Flax • advanced technologies: WEB 2.0, mashups, AJAX • search engine positioning optimization 			
№	Lecture	Hours	Laboratory works		Ref
			Content	Hours	
1.	Basics of World Wide Web (WWW)				
	Introduction to Internet and WWW. History of Internet and WWW. WWW core technologies: HTML, HTTP & URL. WWW components. Web servers and user agents. Client/server applications. Protocols. Internet, intranet, and extranet.	2 h	Implement some exemplary web pages	2 h	[1]
2.	HyperText Markup Language HTML				
	Web document. Description metadata. Tags and attributes. Formatting paragraphs and text. Lists. Images. Links. Tables. Forms and controls. Frames. Multimedia elements (applets and objects). A program for creating Web pages (Arachnophilia, Adobe ImageReady).	2 h	HTML tools. Validation of HTML documents.	2 h	[1], [2], [5]
3.	XHTML				
	Introduction to XML. Language XML. Purpose and features. XML-document structure. Transforming XML. Technology based on XML. Advantages and Disadvantages of XML. Differences between HTML and XHTML. Backward compatibility.	2 h	HTML to XHTML conversion. HTML Tidy.	2 h	[1], [2], [5]
4.	Additional features design web pages with CSS				
	Ways of defining styles. Font design. Making hyperlinks. Making paragraphs. Making the block. Lists. Background color. Wallpaper.	2 h	Introduction to CSS. Familiarization with CSS	2 h	[2], [4]
5.	JavaScript				
	Statements, variables, operators, if...else, popup boxes, functions, control structures, exception handling	2 h	Implement some dynamic web pages with JavaScript	2 h	[2], [3], [4]
6.	AJAX				
	Requests, Ajax frameworks, common applications/ examples	2 h	Implement some web pages that selectively update certain data	2 h	[1], [3], [4]

7.	Programming language PHP				
	Introduction to PHP. Versions. PHP syntax (variables, control structures, data structures, functions). PHP syntax. Processing HTML forms. Object oriented programming with PHP. File processing with PHP.	2 h	PHP basic examples	2 h	[1], [2], [3]
8.	Creating Web pages using the PHP				
	Tools for creating personal Web pages. PHP library functions. Building applications and session objects. Authentication with forms. PHP and MySQL. Access to a database.	2 h	Creating personal Web pages	2 h	[1], [2], [3], [4]
9.	Extended concepts of PHP				
	Templates, cookies, message system, session handling, PHP libraries	2 h	Create a dynamic simple web application, possibly in teams	2 h	[3], [4]
10.	Enterprise Platforms				
	Overview of J2EE and .Net platform, basic concepts of JSF and ASP.Net, application server, deployment concepts	2 h	Implement a simple web-application with JSF during the next 3 exercises	2 h	[3], [4], [5]
11.	JSF				
	Controlling page flow, forms, validation, database access	2 h	Continue exercise from lecture 10	2 h	[3], [4], [5]
12.	Extended concepts of JSF				
	facelets, libraries (MyFaces, Rich Faces), session handling, Ajax integration	2 h	Continue exercise from lecture 10	2 h	[3], [4], [5]
13.	Flash and Flex				
	Introduction Flash and Flex using basic examples, tool chain, BlazeDS-Remoting-Server	2 h	Implement a simple flex web page.	2 h	[3], [4]
14.	Content management system (CMS)				
	Create, edit and manage text and multimedia documents (content). Exemplary systems could be Typo3 and Moodle	2 h	Perform some common operations with a typo3 instance	2 h	[2], [5]
15.	Web 2.0				
	Feature Web 2.0. An integrated approach to the organization, implementation and support of Web-resources.	2 h	Familiarization with Web 2.0.	2 h	[1], [2], [5]
	TOTAL	30 h		30 h	

References

- [1] -Elizabeth Castro. HTML, XHTML, and CSS (6th Edition). Peachpit Press, 2006.
- [2] -HTML and CSS. Tutorial [text] / EV Malchuk. - St.: BHV-Petersburg, 2002. - 260.
- [3] -Your first web site using PHP-script [text] / Stroganov, AS - SPb.: BHV-Petersburg, 2007. - 411.
- [4] -JavaScript. Encyclopedia of user [text] / Richard Wagner, Allen Vayk - SPb.: BHV-Petersburg, 2008. - 472.
- [5] -Internet Resources: <http://www.opennet.org>, <http://www.javascript.ru>, www.phpclub.ru, www.w3c.org, <http://mysql.ru>

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