

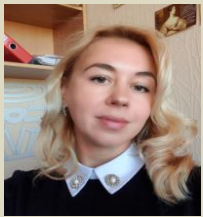
# FUNDAMENTALS OF WEB DEVELOPMENT

## COURSE SYLLABUS

<b>Code and name of specialty</b>	122 Computer science	<b>Institute</b>	Faculty of Computer Science and Software Engineering
<b>Program name</b>	"Computer Science and Intelligent Systems"	<b>Department</b>	Software Engineering and Management Information Technologies
<b>Type of program</b>	Educational and Professional	<b>Language of instruction</b>	Ukrainian, English

## LECTURER

**Name and surname, email** *YuliiaLitvinova, Uliya.Litvinova@kphi.edu.ua*



Ph.D. (01.05.02 Mathematical Simulation and Methods of Calculation). Associate Professor at the Department of Software Engineering and Management Information Technology. Work experience – since 2006. Author (co-author) of more than 40 research papers and textbooks. (h-index = 3 in Google Scholar - <https://scholar.google.com.ua/citations?user=8cVqocUAAAAJ&hl=uk>; ORCID ID is <https://orcid.org/0000-0001-6680-662X>)  
Basic courses: "Fundamentals of Web development" (lectures and lab classes), Strategy of information systems "(lectures and lab classes), "Production organization and marketing" "(lectures and lab classes).

## GENERAL DESCRIPTION OF THE COURSE

<b>Summary</b>	The course "Fundamentals of Web Development" is a course in the cycle of professional compulsory training in the specialty 121 "Software Engineering". It is taught in the fourth semester in the amount of 90 hours (3 ECTS credits), in particular: lectures –32 hours, laboratory classes – 32 hours, independent work –26 hours. Course works are considered as individual tasks. The study of the discipline ends with the exam.
<b>Course objectives</b>	Formation of students' theoretical and practical knowledge on the fundamentals of site design and web technologies; receiving practical skills in contemporary web programming.
<b>Types of classes and control</b>	Lectures, workshops, consultations. The course ends with a final exam
<b>Term</b>	4

<b>Student workload (credits) / Type of course</b>	3 / Mandatory (elective)	<b>Lectures (hours)</b>	32	<b>Workshops (hours)</b>	32	<b>Self-study (hours)</b>	26
--	--------------------------	-------------------------	----	--------------------------	----	---------------------------	----

<b>Program competences</b>	<p>GC1. Ability to abstract thinking, analysis and synthesis.</p> <p>GC2. Ability to apply knowledge in practical situations.</p> <p>GC3. Knowledge and understanding of the subject area and understanding of professional activity.</p> <p>GC6. Ability to learn and master modern knowledge.</p> <p>GC9. Ability to work in team.</p> <p>PC8. Ability to design and develop software using different programming paradigms: generalized, object-oriented, functional, logical, with appropriate models, methods and algorithms of calculations, data structures and management mechanisms.</p> <p>PC9. Ability to implement a multi-tier computing model based on the client-server architecture, including databases, knowledge bases, and data warehouses, perform distributed processing of large data sets on clusters of standard servers to meet the computing needs of users, including cloud services.</p>
----------------------------	---

Learning outcomes	Teaching and learning methods	Forms of assessment (continuous assessment CAS, final assessment FAS)
<p>PLO9. Develop software models of subject areas, choose a programming paradigm from the standpoint of convenience and quality of its application to implement methods and algorithms that solve problems in the computer science field.</p> <p>PLO10. Use tools for developing client-server applications, design conceptual, logical, and physical models of databases, develop and optimize database queries, create distributed databases, repositories and showcases of databases, and knowledge bases, including those based on cloud services, using web programming languages.</p>	<p>Interactive lectures with presentations, discussions, laboratory classes, teamwork, case method, student feedback method, problem-based learning</p>	<p>Written individual assignments for laboratory works (CAS), assessment of knowledge in laboratory classes (CAS), express surveys (CAS), online tests (CAS), final/semester control in the form of a semester exam, according to the schedule of the educational process (FAS)</p>

### ASSESSMENT AND GRADING

Ranges of points corresponding to grades	Total score (points) for all types of learning activities	ECTS grading scale	The national grading scale	Allocation of grade points	<p>100% Final assessment as a result of Final exam (30%) and Continuous assessment (70%).</p> <p>30% Final exam</p> <p>70% Continuous assessment:</p> <p>Module №1 (7.5%)</p> <p>Module №2 (7.5%)</p> <p>Laboratory works (40%)</p> <p>Laboratory work №1 (8%)</p> <p>Laboratory work №2 (8%)</p> <p>Laboratory work №3 (8%)</p> <p>Laboratory work №4 (8%)</p> <p>Laboratory work №5 (8%)</p>
	90-100	A	excellent		
	82-89	B	good		
	74-81	C	satisfactory		
	64-73	D			
	60-63	E			
	35-59	FX	Unsatisfactory (with the exam retake option)		
	0-34	F	Unsatisfactory (with mandatory repetition of the course)		

<b>Course policy</b>	<p>Students must attend all classes according to the study schedule and adhere to the norms of academic ethics. To study the course, students need to have their personal computer and (or) use computers of the computer center at the department. Students must work with compulsory and recommended reading, including Internet resources. Students must complete and submit all laboratory works during the semester in which the course is taught, before the examination session. The final assessment is not carried out without the personal presence of students.</p>
----------------------	--

## COURSE STRUCTURE AND CONTENT

<b>Topic 1</b>	Introduction to the fundamentals of web programming.			<b>Self-study</b>	WWW architecture: client/server architecture of the Internet. Overview of Web technologies. Web standards
<b>Topic 2</b>	Hypertext HTML language	<b>Laboratory work 1</b>	HTML. Fundamentals of hypertext markup. <i>(PT02)</i>		Frames work
<b>Topic 3</b>	Using CSS cascading style tables.	<b>Laboratory work 2</b>	Cascading style tables. Practical use of CSS. <i>PT02, PT04</i>		Operations and control structures. Functions and their parameters.
<b>Topic 4</b>	JavaScript language for client scripts.	<b>Laboratory work 3</b>	Dynamic HTML. Objects JavaScript. Practical usage the Web Forms. <i>PT06</i>		Web development technologies for designing web-based information systems. Web-servers in information systems and their configuration.
<b>Topic 5</b>	The language of server scripts	<b>Laboratory work 4</b>	Server add-ons. PHP language. <i>PT10, PT11</i>		Supervision of web-based information systems
<b>Topic 6</b>	The MySQL database management system. Principles of working with Internet databases	<b>Laboratory work 5</b>	Development of the web-interface to the database. A joint use of PHP and MySQL <i>PT13</i>		

## RECOMMENDED READING

<b>Compulsory</b>	<ol style="list-style-type: none"> <li>1. Terry Ann Felke-Morris. Web development And Desin Foundations with HTML5 (8 edition), 2017.</li> <li>2. Gaucher J. D. HTML5. For professionals. - M.: Peter, 2019. .</li> <li>3. John Duckett Fundamentals of web programming using HTML, XHTML and CSS. - Moscow: Exmo, 2019.</li> <li>4. Jeremy, Keith HTML5 for web designers. - M.: Mann, Ivanov &amp; Ferber, 2016..</li> <li>5. Josie V. HTML for geography. How Google Earth works. - Moscow: DMK Press, 2017.</li> <li>6. Steve Suehring, Tim Converse, Joyce Park PHP 6 and MySQL 6 Bible 1st Edition. Wiley Publishing Inc., 2010.</li> <li>7. Dronov Vladimir HTML 5, CSS 3 and Web 2.0. Development of modern Web-sites / Vladimir Dronov. - M.: BHV-Peterburg, 2016.</li> </ol>	<b>Recommended</b>	<ol style="list-style-type: none"> <li>1. Sheldon R. MySQL: a basic course . Dialectics, 2017.</li> <li>2. J. Dakett. HTML and CSS: Design and Build Websites, 2018.</li> <li>3. Valentine C. XHTML . Williams Publishing House, 2011.</li> <li>4. Darnell R. JavaScript. Peter, 2020.</li> <li>5. Zeldman D. Web-design by standards. NT Press, 2015.</li> <li>6. Morrison M. HTML and XML. Shvidkoiefektivno. Peter, 2015.</li> <li>8. Nielsen J. Web-design. Symbol Plus, 2020.</li> </ol> <p>INFORMATION RESOURCES ON THE INTERNET</p> <ol style="list-style-type: none"> <li>1. <a href="http://www.microsoft.com">www.microsoft.com</a> - Microsoft website.</li> <li>2. <a href="http://www.intuit.ru">www.intuit.ru</a> - Internet - Institute of Information Technology.</li> <li>3. <a href="http://www.softtime.ru/bookphp/gl1_1.php">www.softtime.ru/bookphp/gl1_1.php</a> - PHP tutorial 4.</li> <li>4. <a href="http://www.mysql.ru/docs/man/">www.mysql.ru/docs/man/</a> - reference manual for MySQL.</li> <li>5. <a href="http://www.php.net">www.php.net</a> - PHP: Hypertext Preprocessor.</li> <li>6. <a href="http://php.rus-phpnuke.com/">php.rus-phpnuke.com/</a> - PHP tutorial.</li> <li>7. <a href="http://html.manual.ru/">html.manual.ru/</a> - HTML tutorial.</li> <li>8. <a href="http://jquery.page2page.ru/">http://jquery.page2page.ru/</a> - JQuery manual</li> </ol>
-------------------	--	--------------------	---

## **ACADEMIC INTEGRITY**

Students are expected to adhere to the Code of Ethics of Academic Relations and Integrity of NTU “KhPI”.

The content of this syllabus is consistent with the course program.