



CS102

WEB TECHNOLOGIES AND APPLICATIONS

Updated: Protocol No 7/30.01.2019

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ANNOTATION

The course presents students with the basic concepts, technologies and languages used in Web environment. The basic protocols and technologies of the development of static and dynamic Web sites are considered, focusing on the design and creation of web pages through HTML, JavaScript and CSS. Current topics related to Web search, search optimisation, and Web marketing are presented. The discipline ends with the defense of course assignment and examination.

MAIN OBJECTIVES

The main objective of the discipline is to form the knowledge and skills of students to develop and maintain Web sites.

After studying in the course “Web Technologies and Applications”, the students will:

- know the basics of the Web environment;
- be able to create static and dynamic web pages;
- be able to design, develop and optimise the content of Web sites.

PREREQUISITES

The discipline requires general skills to work on the Internet and also preliminary preparation of students from the Programming discipline.

STATUS AND STRUCTURE

specialty	status	ECTS	full-time training				part-time training			
			L	C	t	total	L	C	t	Total
Software Engineering	Mandatory	6	30	30		60	15	15		30
Computer Systems and Technologies	Elective	6	30	30		60	15	15		30

COURSE CONTENT

Topic 1. Introduction to Web programming. Overview of the languages and technologies used – HTML, XHTML, CSS, XML HTTP protocol – methods and steps of implementation.

Topic 2. CGI programs. Architecture of Web Application. Scripts executed on the server and at the client – features, advantages and disadvantages. Basic languages and technologies applied in the Web environment.

Topic 3. Multimedia types used on the Web. Formats for audio, video and graphics. Advantages and disadvantages. Areas of application.

Topic 4. Basics of CSS. Essence and application. Types of styles and syntax. Designing a website through styles.

Topic 5. Design and development of a web site. Basic elements and stages. Planning, choice of design and technology. Navigation schematics.

Topic 6. Implementation of the site. Information for consumers. Maintenance and development of the site. Web hosting. Publish HTML pages on the Web.

SEMINAR EXERCISES

Topic 1. Development of a Web site through Adobe DreamWeaver editor. Basics of HTML. Code validation.

Topic 2. Formatting and settings of HTML pages. Fonts, backgrounds, text formatting. Include images in HTML pages. Tables. Hyperlinks between pages.

Topic 3. Creating HTML forms. Text boxes. Bookmarks. Radio buttons. Buttons. Drop-down lists.

Topic 4. Content of a website. Effective structuring of information on the site. Select a navigation scheme. Developing options for a specific site

Topic 5. Develop a site layout through CSS. Means to create styles. Background styles, color, text, fonts, hyperlinks, lists, and tables.

Topic 6. Develop site design and view through CSS. Techniques for sizing, arranging and aligning elements.

Topic 7. Content Management Systems (CMS). Development of a blog and website.

Topic 8. Develop and publish a blog with Wordpress. Customise templates.

COURSEWORK

The coursework is assigned to each student and contains the creation of a static web site on a topic selected by the student and consulted by the lecturer. Each student defends his coursework and receives an assessment characterising the level of absorption of the material and the project presented.

PLANNED LEARNING ACTIVITIES AND TRAINING METHODS

All sections of the course, whether theoretical or practical, are presented and/or taught to students in a computer laboratory. Students actively use the University's e-learning platform, where a variety of resources are published to support, enrich, expand and facilitate the implementation of the training, such as: presentations of the sections described in the content, texts on the topics of the content, text of lessons, video tutorials (are a standalone review), useful links to electronic information sources, resource files to be used in the implementation of practical tasks and useful links.

The training covers the following practical activities: a lesson, a practical assignment, a course project on a topic that is determined by the student and the teacher after discussion. The outputs of these activities are presented and/or discussed during the exercises. Each activity is accompanied by an instruction (what the student has to do, how to present a final decision/product of the activity, and when is the deadline for submission). At the end of the exercises, time is taken to work on the course project. During this period, each student discusses with the teacher the conceptual design for the development of their project. During the discussion, the teacher provides assistance in the form of advice, recommendations and practical guidance.

The basis for the implementation of the training in this discipline are the recommendations and principles of blended learning constructive training in an interactive educational environment. The learning process is carried out on the basis of training with an active role of the learner, training through examples, training through practice, training through research and teamwork.

ASSESSMENT METHODS

➤ Each student develops a stand-alone course assignment representing the design and development of a specific Web site on a subject chosen by the student. The realisation of the task and the protection of the development is evaluated – **up to 45 t**. The criteria for evaluating the development are: originality of the solution, description of the task, presentation of the development.

➤ Each student develops a blog on a topic chosen by the student. The realisation of the task and the protection of the development is evaluated – **up to 45 t**. The criteria for evaluating the development are: originality of the solution, description of the task, presentation of the development.

➤ For attendance and participation in the exercises, up to **10 tons** are obtained.

RECOMMENDED LITERATURE

1. In easy steps: JavaScript, SoftPress, 2005.
2. Zhecheva V., WWW Programming, Publishing Bozhich, 2007.
3. Programming with JavaScript, Softpress, 2009.

4. Schifflet K., Basics of PHP Security, Za Press, 2007.
5. <http://www.zend.com>
6. <http://www.w3schools.com>
7. <http://www.hotscripts.com>
8. <http://www.dynamicdrive.com/>