

I026	FIN, MR, IPM - elective – Year 1	Web Programming and Applications	L+P+S 1+2+0	ECTS 4
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Course objectives. Independent managing with basic concepts of web programming on the client and the server side by using the standard and modern web technologies proposed by the World Wide Web Consortium (W3C).

Course prerequisites. Introduction to Computer Science, Introduction to Programming, Introduction to Data Structures and Algorithms.

Syllabus.

1. World Wide Web. Client side programming. XML (eXtensible Markup Language). Contemporary HTML/XHTML (eXtensible Hypertext Markup Language) and CSS (Cascading Style Sheets) standards. Javascript. Events and object-oriented models. Introduction to dynamic WEB contents. JQuery.
2. Basics of Java programming. Java applets.
2. Relational databases. Design and architecture. MySQL system of privileges. More advanced MySQL programming. System security. Administration of MySQL server.
3. Server side programming. PHP basics (including PHP script in XHTML, adding the dynamical content, variables and constants, operators and presendence, programming loops, arrays, regular expressions). Object-oriented PHP. Accessing the MySQL database from PHP. Managing sessions. AJAX.
4. Modern WEB technologies proposed by the World Wide Web Consortium (W3C, <http://www.w3.org>).

Expected learning outcomes.

After completing the course, students are expected to:

- understand client-server communication architecture and adequate communication protocols;
- distinguish between client and server side programming concepts;
- independently use classical and modern WEB technologies taught in lectures and exercises;
- actively learn new WEB technologies and apply them to solving real problems;
- have an analytical way of thinking in solving real problems and creating effective solutions applicable in practice.

Teaching methods and student assessment. Attendance at lectures and exercises is required. The exam consists of a written and an oral part, and it can be taken after completion of lectures and exercises. During the semester students can take mid-term exams that replace the written examination.

Can the course be taught in English: Yes.

Basic literature:

1. L. Welling, L. Thomson, PHP and MySQL Web Development (4th Ed.), Addison-Wesley, Boston, 2009.

Recommended literature:

1. R. W. Sebesta, Programming the World Wide Web (6th Ed.), Addison-Wesley, Boston, 2011.
2. L. Shklar, R. Rosen, Web Application Architecture: Principles, Protocols and Practices (2nd Ed), Wiley, Chichester, 2009.
3. W. Savitch, Absolute Java (4th Ed), Addison-Wesley, Boston, 2009.
4. P. Crowder, Creating Web Sites Bible (3rd Ed.), Wiley, Indianapolis, 2008.