

Course code IFI6076	Web Programming		
ECTS credits: 4	Contact hours: 54	Semester: Autumn	Examination
Course objective:	To give understanding of possibilities and risks of web programming; to develop applicable web programming skills.		
Brief description of course content:	<p>Web development principles and tools. Web server programming. Technical possibilities. Technologies in use. PHP. Data exchange between client and server. Planning of data tables. Joining tables. SQL commands. User input validation. Authentication and authorization. Javascript tools and possibilities. Constructing program logic.</p> <p>Independent work:</p> <p>Creating web applications by subjects studied at school. Four applications individually, one as groupwork. Finishing programming examples which started at school.</p>		
Learning outcomes	<p>Course participant can plan web site and do also simpler and middle-level programming works. He can appraise successfulness of a web project, can suggest tools and calculate approximate work amount in hours.</p> <p>A student:</p> <ul style="list-style-type: none"> • Understands possibilities and risks of web programming • Can create static web pages • Can make calculators working in web pages • Can connect data in web page to one SQL data-table • Understands one-to-many and many-to-many connections in databases and make web interfaces for data in such structure. • Can authorize web users and manage them rights. 		
Assessment methods	Examination. Presentation of homeworks and group work. Theory		

	seminar. Solving exercise in examination day.
Responsible lecturer	Jaagup Kippar
Title in Estonian	Veebiprogrammeerimine
Prerequisite course	-
Compulsory literature	Lecture Notes can be found at http://minitorn.tlu.ee/~jaagup/kool/java/loeng/veebipr/veebipr1.pdf
Replacement literature	Web programming e-course http://www.e-ope.ee/repositoorium?@=6f6m#euni_repository_10890
Subscription to the course and exam	Participation in courses is voluntary, but useful for studies. For completing the course and subscription to exam must be done all homeworks, control work and seminar. Student must register himself to exam through ÕIS (the Study Information System).
Requirements for independent work	Javascript application Web site with included header, footer and menu Workflow-application with different user roles Control work User interface to two joined data tables Group work Exam exercise Seminar Explanations

- Javascript application

Simple calculator or game with Javascript

- Web site with included header, footer and menu

Web site for real or fictitious event or organization. Repeating parts for pages will be included from separate files. Web site must be so correct, that you could show it to your future boss.

- Workflow-application with different user roles

Workflow maintenance pages (at example order management). Separate web pages for different jobs and roles. Also needed SQL-sentences and table dumps with sample data.

- Control work

Work at classroom, where exercise given by teacher, exercise uses one data table and design made by existing HTML-template.

- User interface to two joined data tables

Data can be sorted and searched and viewed by category. User interface by HTML-template. Administrator can add, delete and change data.

- Group work

Size of group 2-4 persons. Exercise at example guest-house database in amount of 6-10 joined data tables. Describe roles and create views and page structure for different jobs. Compare pages with database – have we all needed data or is all data needed?

Before creating web pages fill data tables with usable data and make example SQL-queries. Presentation of group work in the morning of exam day.

- Examination exercise

At start of exam each group presents his work. Each group will send application address, description and needed passwords to teacher.

Each student will choose exam exercise. Each paper have exercise three levels. For getting final result must be done all homeworks and at least one level in exam. With first completed level is course final mark C, with

	<p>second level B, with all three levels A.</p> <p>After completing the exercise it will be presented to teacher and answered to questions about solution.</p> <p>Quality of homeworks, group work and seminar can be change exam mark by one unit to up or down.</p>
<p>Assessment criteria</p>	<p>Criterion 1</p> <ul style="list-style-type: none"> • Knows web programming possibilities and dangers <p>A – can do previous tasks independently and also help groupmates</p> <p>B – append to previous can with teacher plan and test usability and security of web application</p> <p>C – can analyze design of web application including security side</p> <p>D – can describe possibilities, their background, list popular dangers</p> <p>E – can list possibilities</p> <p>Criterion 2</p> <ul style="list-style-type: none"> • Can make static web pages • Can put calculators to web pages • Can make web user interface to data table • Knows one to many and many to many joins in database and can them use on own web applications. <p>A – Can as teamleader realize and coordinate creating web application comfortable to end user.</p> <p>B – Can as member of workgroup plan and realize database schema and web user interface based on this schema.</p> <p>C – Can make web applications with administrative interface and business logic</p> <p>D – Can make web applications with administrative interface</p> <p>E – Can make web user interface for separated data tables</p>

<p>Information about the content of the course</p>	<p>Week 1</p> <p>Overview of web programming. Running samples, using learning material.</p> <p>JavaScript, client-side possibilities.</p> <p>Week 2</p> <p>Creating web site with includable parts (header, footer, menu).</p> <p>Week 3</p> <p>Data table. Connection to MySQL. Showing first homework.</p> <p>Week 4</p> <p>Web user interface to data table. Web application for fake event.</p> <p>Week 5</p> <p>Searching and sorting data. Use learning material and solve exercises.</p> <p>Week 6</p> <p>Changing data in web. Designing homework in this.</p> <p>Week 7</p> <p>Using HTML mockups and graphical HTML redactor in web application.</p> <p>Week 8</p> <p>Structuring program code. Functions and classes. Page templates.</p> <p>Week 9</p> <p>Many to many joins in database and user interface to it.</p> <p>Week 10</p> <p>Authentication and authorization. Planning group work. SVN for program code maintenance.</p> <p>Week 11</p> <p>Longer selects from database. Data table as multiple copy in one query.</p>
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	<p>Subqueries. Analyze of groupworks.</p> <p>Week 12</p> <p>Automathical testing. PHPUnit and Watir.</p> <p>Week 13</p> <p>Solving group work problems</p> <p>Week 14</p> <p>Seminar. Talk oriented by questions.</p> <p>Examination</p> <p>Groupwork presentation and solving exercise.</p>
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