# “Web technologies I”
# Course Description (2023)

**Requirements for successful completion of the course**

Darja Solodovņikova darja.solodovnikova@lu.lv
Faculty of Computing, University of Latvia

## 1. Course completion and grading

All the information needed for studies – homework and test announcements, information about changes in lecture schedule etc. – is published in the course news forum in the e-Studijas system. The forum is available here: http://estudijas.lu.lv/mod/forum/view.php?id=56036. Posts in this forum are automatically sent out to all students registered for the course. Students are responsible for entering a valid address in their LUIS profile so that they can read these email messages.

Minimal passing grade is 35% which gets rounded up to 4. All mandatory requirements must be fulfilled to successfully complete the course. The final grade is calculated using the following components.

### Homework – optional, 30% of the final grade

Three homework assignments are given during the semester (use of HTML, CSS and JavaScript, respectively). Each homework assignment makes 10% of the final grade. Homework dates are announced in advance and approximately 2 weeks are given to complete the assignments. If deadline is not met, homework may still be submitted, but maximum grade is decreased by 50%.

Homework assignments must be developed by students individually, no co-operation is allowed. Submitted homework solutions are compared with each other to find similar submissions. In case of plagiarism (submissions are identical or very similar), grades are canceled to all the students involved in plagiarism and students must submit a statement of reasons. In case of repeated plagiarism, the statement is escalated to the Dean of the faculty.

### Tests – optional, 20% of the final grade

Two in-class tests take place during the semester, each 45 min long and provides 10% of the final grade. Test dates are announced in advance. Any printed and handwritten materials can be used but no electronic devices are allowed.

One exam date and specific time will be provided when tests can be taken in case the student could not attend the original test because of some justifiable reason.

### Practical assignment – mandatory, 50% of the final grade

A simple web page (client-side solution only) has to be created, where a student demonstrates an ability to develop HTML, CSS and JavaScript solutions in practice. This assignment counts as an exam in the course and, hence, it is mandatory. The web page has to be presented in person during the winter term.

### Practical classes – optional, bonus + 10% of final grade

There will be 3 practical classes during the semester. The classes will be held in the computer lab. During the laboratory classes, practical tasks will be given. For successful completion of all 3 practical tasks, 10% bonus to the final grade will be awarded.

### Course questionnaire – mandatory, 0% of final grade

Students have to fill out the course evaluation questionnaire in LUIS. It is technologically impossible to submit a final grade without filled questionnaire. Students who ignore this step will automatically fail the course.

### Lecture attendance – optional, 0% of final grade

## 2. Significant dates

Estimated dates, any changes to the course schedule will be published in "News forum" and mailed to everyone when appropriate.

~~**Weeks 1-5: Lectures**~~

**Weeks 1-2: Lectures**

**Week 3: No lectures**

**Weeks 4-5: Lectures**

**Week 6: Lecture, practical classes**

**Week 7: Lecture, submission of the 1st homework**

The aim of this homework assignment is to improve students' ability to identify adequate HTML language means to particular concepts in a given document.

~~**Week 8: No lectures**~~

**Weeks 8-9: Lecture**

**Week 10: Lecture**

**Week 11: Lecture, practical classes, ~~1st test~~**

**Week 12: Lecture, 1st test, submission of the 2nd homework**

Test assignments are focused on solving different practical HTML and CSS problems.

The 2nd homework focuses on the use of CSS. To develop the assignment, students have to learn different CSS selectors as well as the most popular element attributes.

**Week 13: Lecture**

**Week 14: Lecture, practical classes**

**Week 15: No lectures**

**Week 16: Lecture, submission of the 3rd homework, 2nd test**

Test assignments are focused on solving different practical JavaScript problems.

The 3rd homework assignment involves application of JavaScript to make web pages more dynamic.

# 3. Details of a practical assignment

## 3.1. Exam procedure

There will be several examination dates during the winter term. No more than 45 students can be admitted in each examination day. Students have to apply to a particular examination date in the e-Studijas system prior to the exam.

Practical work can be presented on one's own portable computer or on desktop computers available in examination room. Approximately 10 minutes are given for the presentation, this includes both demonstration of the functionality developed and source code review.

## 3.2. Grading

### HTML code - 15% of the final grade

- The page has to be developed according to HTML 5 or XHTML 1.0
- Strict standard. DOCTYPE has to be declared and the document must conform to it.
- The document must validate using the W3C validator (http://validator.w3.org).
- ID and class attributes must be used appropriately throughout the document.
- HTML elements must be used according to their semantics.
- HTML document must contain all of these element types:
  - headings (different levels)
  - lists (ordered and unordered)
  - basic text formatting (paragraphs, line breaks, bold, italics)
  - images
  - data input form elements (later accessed from JavaScript code)
- UTF-8 encoding is used.

### CSS code – 15% of the final grade

- CSS code must be 100% original and created by the student. Web page templates must not be used. CSS frameworks are allowed but their usage must be explained during the exam presentation. Usage of CSS framework does not exclude the following reqiorements.
- The CSS code must be developed according to CSS 2.1 specification and must validate using the CSS validator (http://jigsaw.w3.org/css-validator). Stable CSS3 properties may be used as well, but vendor specific markup should not be used.
- Style information must be stored in a separate .CSS file linked to the HTML document.
- At least 15 different selectors have to be used in CSS document.
- All types of basic selectors (by class, id and element name) have to be used. Some non-basic selectors must also be demonstrated.
- The following CSS properties must be used: colors, text styles and fonts, backgrounds, box model properties, float, etc.
- Media queries must be included in CSS code. For example, a print version can be developed where some parts (for instance, navigation) of the document are hidden. “Print preview” function can be used for testing. Or a responsive design features can be implemented using media queries.

## Data input form and data validation using JavaScript – 10% of the final grade

- Validation of mandatory fields – a corresponding warning should be shown if some of the fields are not filled.
- Data type validation (for instance, if the value entered in date field is actually a date; or if a numeric field contains a number).
- Data range or format validation (for instance, if the number entered in ”month” field is between 1 and 12; or if the value in the salary field is positive).
- In case of validation errors, a message explaining the particular problem and naming the field/fields with incorrect values has to be presented to the user. The form must not be submitted in this case. If the form is filled correctly, it should be submitted to https://www.w3schools.com/action_page.php .

## Use of JavaScript for DOM manipulations – 10% of the final grade

- Changing visibility of some part of the document as a response to user interaction with some part of the document (for instance, user clicks a button “more information” and an explanation block is shown).
- Creation of new DOM elements from code (using DOM methods rather than assigning a string containing HTML code to innerHTML). To get maximum points, new elements must be created from JSON object.
- Some DOM manipulations have to be demonstrated without using any external libraries, only by using plain document object model.
- Some other manipulations have to be implemented using third-party library (such as jQuery, ExtJS, etc).
- Usage of JS frameworks is considered an advantage.