A continuing course for Computational Thinking and Programming course, that will deepen the basics of programming and is mostly an introductory course to the world wide web, and web applications development.

Main topics: What is the World Wide Web, and an overview on the internet and Client/Server architecture. HTML, CSS, and Java Script basics. Dynamic web pager development, the web browser, HTTP request and connection to servers.
Course objectives:

This course is designed to expand your programming skills and practices in general, and give you a practical introduction to web programming. The web is a very big place, with almost 1 billion websites now on the internet. This class could be your first step toward a better understanding of the internet and developing a new set of internet skills. The students will learn: How websites actually work? How they are built? How do browsers, computers, and mobile devices interact with the web? What skills, languages, formats and tools are necessary to build a website? and How to build simple web applications?

The course is designed for students with basic programming knowledge, and for “Computational Thinking and Programming” course graduates.

Grading method:

- Active participation in class
- Class/Home quizzes
- Home assignments
- Final project

By the end of this course the students will be able to:

- Describe the structure and functionality of the world wide web
- Create simple dynamic web pages using a combination of HTML, CSS, and JavaScript
- Apply essential programming language concepts when creating HTML forms
- Select an appropriate web hosting service
- Publish your webpages for the world to see
- Develop a working model for creating your own personal or business websites in the future and be fully prepared to take the next step in a
more advanced web development or design course or specialization

Thursday 14:15-15:00

**Weekly plan**

<table>
<thead>
<tr>
<th>Week No</th>
<th>Lecture</th>
<th>Home Assignments</th>
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<tbody>
<tr>
<td>1</td>
<td>Basic programming concepts and practices</td>
<td>Assignment 1 Coding assignment</td>
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<tr>
<td>2</td>
<td>Introduction to Web Programming</td>
<td>Assignment 2 First web page creation</td>
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<td>Basic terminology, and concepts, what is the WWW, the history of the internet and its uses, client–server architecture, web browsers, web servers, web applications, communication protocols, web programming languages, formats and tools</td>
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<tr>
<td>3</td>
<td>HTML &amp; creation of basic web pages</td>
<td>Assignment 3 First web page design</td>
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<td>4</td>
<td>CSS &amp; web pages design</td>
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<td>5</td>
<td>DOM – web pages structure, DOM trees functions and scanning</td>
<td>Assignment 4 – Web page design improvements and bootstrap</td>
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<tr>
<td>6</td>
<td>Advanced web pages design</td>
<td></td>
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</tbody>
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Dynamic pages and web applications programming with JS – part 1

Introduction to JS, comparison between JS the Python language, JS syntax and basic statements

Assignment 5 - Dynamic web page

Dynamic pages and web applications programming with JS – part 2

Web Browsers

Node, Angular, React
Web development with Node.JS or Flusk

Assignment 6

Web servers – How do web servers work? How do they communicate with web applications? How to build a web server

Final project definition and requirements

Final project design planning

Cloud computing, data bases, and open source libraries and tools

Final project - design and example

Course summary and problem solving for final project

Professional literature:


7. Tutorials:
   - https://www.w3schools.com/js/
   - https://www.javascript.com/
   - https://javascript.info/

**Academic literature:**


