

CSE 104 - Web Programming

General Organization

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General objective

- Be able to **create webpages from scratch** which are
 - Valid, standard compliant, responsive using **HTML and CSS**
 - Coding dynamic behavior of webpages using **JavaScript**
- Basic notions on server developement (PHP, nodeJS)
- Improve general computer development skills
 - General CS skills: Command line in Unix, Files handling
 - Good practices: Validity checking
 - Autonomy: Documentation research, Debug

What this class is not

- Not a network class

Focus on the use of language, not communication protocols

- Not a theoretical/conceptual class

Focus on practical development (few classes, lots of practice)

- Not a framework class (no bootstrap, jQuery, Django, Symfony, etc)

Focus on current language standard

- Not an advanced server side class (no login, security/hack, DB, etc)

Most time spent on client-side development, server development will be only introduced

Methodology

- Mostly **practical** computer lab class
 - Set of online tutorials and exercises
 - You code, develop, try, at your speed
 - You develop a small-project

⇒ Get your hands in the code !

- Some space general presentation before each new concepts
 - HTML/CSS
 - JavaScript
 - Server programming

Provisional schedule

- HTML/CSS, JavaScript, Server

start with ~1h class.

- Schedule may be adapted

11/02 HTML/CSS

15/04 Project

18/02 HTML/CSS

22/04 (No Class)

25/02 (No Class)

29/04 (No Class)

04/03 HTML/CSS

06/05 Project

11/03 JavaScript

13/05 Project

18/03 JavaScript

20/05 Server

25/03 JavaScript

27/05 Server

01/04 JavaScript

03/06 Server

08/04 JavaScript

Evaluation

- 1 project (~50%)
 - Develop a dynamic website with HTML/CSS, JavaScript (client-side).
 - Work in pair (or alone if preferred)
- Attempt this year: Some quizz and exercises during some classes (~50%)
(avoid final written exams)

Note - Tutorials and exercises are not aimed to be graded

Don't hesitate to ask questions

Work on them seriously

Make sure you understand it before going to the next one

Be aware of plagiarism

- Web code is easy to share and reuse
- It is ok normal to share ideas and get inspiration on internet!
- It is **not ok** to use other's ideas and code **without citing it!**

Rule - If you inspire from

- Some internet website
- a book
- your colleagues, previous students
- ... (non exhaustive list)

⇒ **Cite them !** ⇐

Better to cite "too much" than not enough

Web languages

You can find *everything* on web development on the web !

- *everything* can be good - comprehensive, advanced notion.
- *everything* can be bad - outdated, non standard, overkill, dangerous practices.

⇒ Use internet resources, but wisely !

- Do not follow blindly every website that seems to have *a solution*
- Keep analyzing the code
- Double check comments and suggestions

Web languages

Common issues: Out-date practices, Over-use of heavy library/frameworks

- HTML has evolved a lot through years
- Many *non developer* users (as long as it works)
- Old clever tricks may be replaced by simpler/cleaner standard code
CSS animation, flexbox, grid-layout, new JS standard, etc.

Programming rules (even in non web development)

1- Aim at **most simple readable** solution

- No tricky code (even if it works): un-readable => un-maintainable => un-reliable
- KISS principle (Keep It Simple, Stupid)

(Writing simple and readable code may not be simple!)

2- Prefer simple **standard** code rather than using existing libraries

Standard will be maintained through time, libraries may not

Libraries add extra cost (bandwidth, latency, maintainance, bugs, etc.)

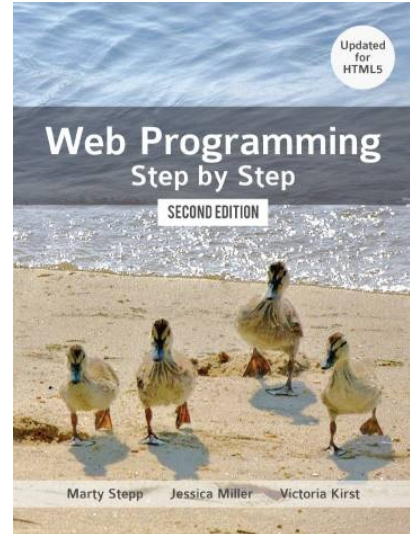
3- But prefer existing libraries to complex home made tricks

Do not re-invent the wheel for real projects (only to learn)

General Reminder

Main references

Victoria Kirst, CS193X, Web programming Fundamentals, Stanford.



Marty Stepp, Jessica Miller, Victoria Kirst

Ressources

- All lab class in computer rooms (36,36)
- In general: working on your own laptop is fine
 - You need a text editor and a modern browser ([see list](#))
 - You need Python, PHP, and Node.js for Server class (in May)

Warning : Don't trust too much your browser

- Browsers tries to hide your errors as much as they can

May looks ok on your browser/OS, but not with others

- Always check (in particular your project) on **computer room browser** (the reference)
- Check, if possible, if Firefox and Chrome

It is ok if IE doesn't work (didn't implement latest standard)