Programming in Design

General Course Information

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Programming in Design

- **What is web programming?**
  - The process of writing, testing and maintaining the code of a website.

- **What is a website?**
  - A collection of web documents or resources (e.g. web pages, multimedia content), which are usually identified with a common domain name, and published on a web server.

- **How to write the code for a website?**
  - A website is written using a programming language for web.

Programming in Design

- **What is a programming language?**
  - A programming language is a vocabulary and set of grammatical rules for instructing a computer to perform specific tasks.
  - Examples of programming languages for web: HTML, CSS, Javascript, PHP, ASP, …
  - More general programming languages: C, C++, Java, C#, Python, …

- **What is the best programming language?**
  - There is no "best programming language". It depends on the goals of the application, platform, programmer's skills, etc.

Programming in Design

- Professor: Edirlei Soares de Lima
  - Education:
    - B.Sc. in Computer Science – UnC
    - M.Sc. in Computer Science – UFSM
    - Ph.D. in Computer Science – PUC-Rio
  - Teaching Experience: PUC-Rio, UNIRIO, UERJ, IADE-UE
  - Coordinator of Creative Technologies
  - More Information: http://www.inf.puc-rio.br/~elima/

Programming in Design

- Learning Outcomes:
  - Learn the basic aspects of programming through practical exercises involving languages such as HTML, CSS and JavaScript.
  - Develop critical and analytical understanding of contemporary design methodologies, interface design, usability, and content management systems.
  - Develop skills to carry out successful front-end development projects.
  - Apply the knowledge acquired in the development of a web project, by choosing the most appropriate solutions, technologies, processes and tools.

Programming Fundamentals

- Module Content:
  1. Introduction to Web Programming;
  2. HTML and CSS:
     - HTML elements and attributes;
     - Heading, paragraphs, styles, formatting, colors;
     - CSS Elements: color, font, border, padding, margin, width, height;
     - Links, images, tables, lists, blocks, classes, ids, iframes and layouts;
     - CSS Elements: text, font, links, lists, tables, position, overflow, float;
     - Navigations bars, dropdowns, forms.
  3. JavaScript:
     - Scripts, variables, and operators;
     - Functions and events;
     - Conditional statements;
     - Loop statements;
     - p5.js

Software

- Visual Studio Code:
  - https://code.visualstudio.com/

- p5.js
  - https://p5js.org/

- Adobe CC
  - https://www.adobe.com/creativecloud.html

Method

- Project-Based Learning:
  - Learn by doing;
  - Practical assignments;
  - Practical project;

- Active and experiential learning:
  - Theoretical concepts;
  - Practical examples;
  - Implementation assignments;

Evaluation

- Continuous Assessment (bipartite):
  - [60%] Intermediate assessment:
    - [20%] Individual assignments on the concepts learned;
    - [80%] Three project assignments.
  - [40%] End of term assessment:
    - [100%] Final delivery and presentation of the semester's project with individual discussion.

- Final Assessment:
  - [100%] Individual project development, delivery, and discussion.

Project

- **Storytelling Website:**
  1) The content of the website must be a fable or a traditional tale;
  2) The fable of each team will be defined by the professor in the first week of classes;
  3) The website must be developed in HTML, CSS, and JavaScript;
  4) The website must include interactive and dynamic elements (simple animations and interactive story navigation);

- The team size is 2 students (exceptions only if needed);
- Students are allowed (and encouraged) to get inspiration from existing well-designed storytelling websites.
- Briefing with more details available at Blackboard.

Evaluation

- Project deliveries:
  - **1nd delivery**: project concept and report
    - Good design vs. bad design;
    - An analyzes of 5 storytelling websites:
      - 3 with “good” UI design and 2 with “bad” UI design.
  - **2nd delivery**: layout
    - Mockup of the website;
    - Basic layout;
  - **3nd delivery**: interactivity
    - Prototype of the website;
    - Interactive and dynamic elements (animations, story navigation, and interaction);

Project - Theme

- **Selected tales:**
  - Little Red Riding Hood;
  - The Three Little Pigs;
  - Cinderella;
  - Puss in Boots;
  - Sleeping Beauty;
  - The Frog Prince;
  - The Travelling Musicians;
  - Rapunzel;
  - The Fisherman and his Wife;
  - The Beauty and The Beast;
  - Little Thumb;
  - The Story of the Three Bears;

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  - https://www.gutenberg.org/ebooks/26019

Bibliography

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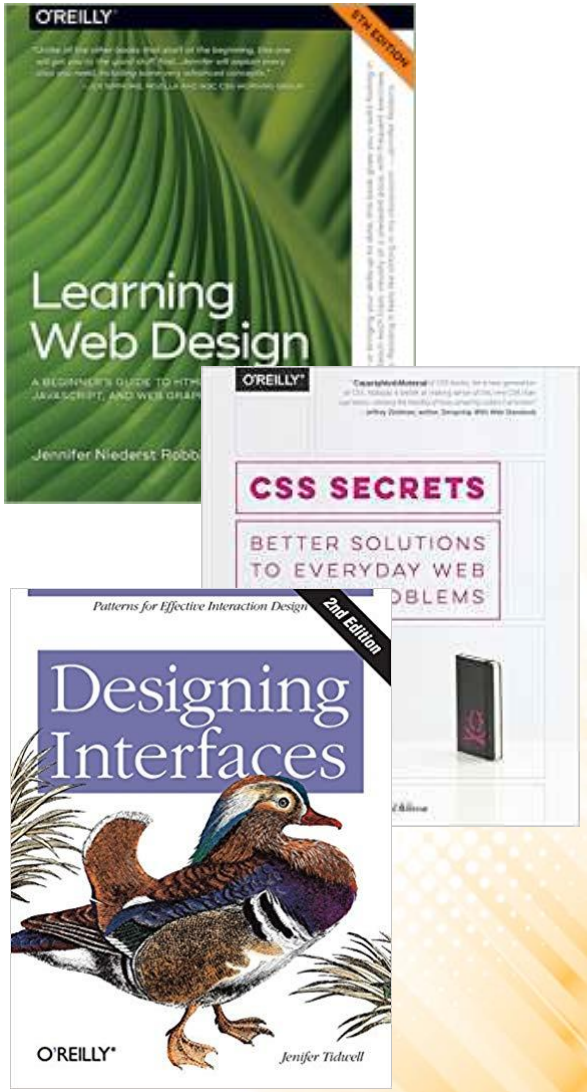
- Verou, L. (2015). **CSS Secrets: Better Solutions to Everyday Web Design Problems**, O'Reilly Media. ISBN: 978-1449372637.

- Tidwell, J. (2010). **Designing interfaces: Patterns for effective interaction design** (2nd ed.), O'Reilly Media. ISBN: 978-1449379704.



Web Resources

- Web Programming: https://www.w3schools.com/whatis/
- HTML: https://www.w3schools.com/html/default.asp
- CSS: https://www.w3schools.com/css/default.asp
- JavaScript: https://www.w3schools.com/js/default.asp

Programming in Design

- Blackboard (Programação em Design):
  - https://iade.blackboard.com/
- Course Webpage:
  - http://www.inf.puc-rio.br/~elima/webprog/
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