Learning Objectives

The main objective of the course is to familiarize students with the multiple facets of developing a web application.

- General Development Practices
  - **Testing**: You will learn the importance of writing extensive and appropriate test suites for your code, and will become familiar with Test-Driven Development. Technologies involved: Mocha, Chai
  - **Documentation**: You will learn how to document your code and in general practice writing documentation for your projects. Technologies involved: JSDoc, Markdown
  - **Modularization**: You will learn how to decompose your code into modular units that can act independent of each other, and various methodologies for combining them to form bigger projects.
  - **Pair programming**: You will practice Pair Programming, where two programmers work on the same computer at the same time, learning from each other as they go along.
  - **Version Control**: You will learn how to use revision control software and websites to manage your code, track unresolved issues, and share with others. Relevant technologies: Git, GitHub
  - **Design Patterns**: You will learn about a number of standard design patterns useful in web applications, as well as various techniques for asynchronous and evented programming.
- Specific Programming Objectives
  - **Javascript**: The main programming language on the web. We will spend a large part of the course learning to work with Javascript.
    - **Core Javascript**: Fundamental structures and functions provided by the language.
    - **DOM**: The browser extensions that provide web-page interactivity.
    - **Node**: Server-side scripting extension to Javascript.
  - **HTML/CSS**: Used for designing the page. We will spend a very limited amount of time on this.
  - **HTTP/XmlHttpRequest**: The protocols that allow the web page to interact with the rest of the world. We will spend a little bit of time on this.