

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: JS-Doc, 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.