



WYNCODE

THE ART OF CODE

Wyncode Web Development Curriculum

Course Practices

As a team and in the classroom we operate according to agile methodology. You will not only learn what agile is you will be living it each and everyday. We do this so you get comfortable with and understand the practices of the best development teams in the world!

Daily Stand-ups

Daily stand-ups are part of the Agile methodology practiced at many tech companies, as well as at Wyncode Academy. Everyday at 12:15 pm students meet in standup groups to vocalize

1. What they accomplished yesterday
2. What they plan on accomplishing today
3. Anything technical that is blocking their progress

Retrospective

Another Agile process that you will participate in at Wyncode Academy is Retrospective. Once a week (generally Friday), students provide feedback on what went well that week, what didn't go well that week, and what could be improved. This is feedback both on how your learning is going, the work you are doing as well as the overall experience at Wyncode. This process is really important to us, and assists us in assessing how Wyncoders are doing as well as what we can do to make the experience even better.

Course Syllabus

Unit 1: Static Front End Programming

Objectives:

- This course focuses on the front end of web development, i.e., what a user sees when they access a website.
 - Students will learn about static websites as they focus on Hyper Text Markup Language (HTML) and Cascading Style Sheets (CSS). In addition, students will learn how to use the Git version control system and how to execute commands via the Command Line.
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Unit 2: Introduction to JavaScript

Objectives:

- The course includes an introduction to the basic concepts of programming, such as data types, variables, control flow, and functions.
 - Students will become familiar with JavaScript syntax and techniques (mainly in the form of ES5 and ES6), Object-oriented Programming, and Prototypical Inheritance.
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Unit 3: Advanced JavaScript

Objectives:

- In this course students will learn about asynchronous JavaScript, i.e. how the browser deals with user input, web requests, and other events simultaneously.
 - Students will learn topics such as callbacks, promises, error-handling, timeouts, async/await functions, generators, and the event loop.
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Unit 4: Introduction to React

Objectives:

- This course introduces React, a JavaScript library for creating user interfaces.
- Students will learn about components, props, displaying and updating state, APIs, and related topics.

Unit 5: Advanced React

Objectives:

- This course focuses on advanced topics related to building a React-based web application.
 - Students will learn about Test-driven development with the Jest testing framework as well best practices for software deployment using the Heroku cloud platform.
 - The course ends with a project where students create a React-based web application.
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Unit 6: Introduction to Ruby

Objectives:

- Students taking this course will work on the fundamentals of the Ruby programming language.
 - They will learn about Ruby syntax, data types, Boolean logic, methods, modules, classes, and gems.
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Unit 7: Advanced Ruby

Objectives:

- This course will demonstrate applications of the Ruby programming language to the domain of web development.
 - Students will apply Ruby programming specifically for the web, including web scraping, accessing application programming interfaces using Sinatra, as well as learning about web clients and servers.
 - Students will be given their final project assignment, which is to create a web application and present (“pitch”) in front of a crowd at the end of the program. Students will also collaborate with the UX/UI Immersive students for guidance with designing wireframes for their applications.
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Unit 8: Introduction to Ruby on Rails

Objectives:

- This course will introduce the Ruby on Rails server-side web application framework.
 - Students will learn about the MVC (model-view-controller) architectural pattern used in building full stack web applications with Ruby on Rails. As part of this module, students also learn about the database component of a web application. Important concepts covered include the distinction between Structured Query Language (SQL) and ActiveRecord.
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Unit 9: Advanced Rails

Objectives:

- Students will learn about agile project management. Agile project management is an iterative and incremental method of managing the design and build activities for software development projects in a highly flexible and interactive manner. There are also connections to lean techniques, as well as other management styles like Kanban and Six Sigma. Agile techniques are best used in small-scale projects or on elements of a wider program of work, or on projects that are too complex for the customer to understand and specify before testing prototypes.
 - Students will be introduced to lean software development. Lean software development (LSD) is a translation of lean manufacturing and lean information technology principles and practices to the software development domain. Adapted from the Toyota Production System, a pro-lean subculture is emerging from within the Agile community.
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Unit 10: React on Rails

Objectives:

- The final course at Wyncode Academy focuses on the integration of React with Ruby on Rails. Additional advanced topics are covered as well with specific topics based on the nature of the student final projects and portfolios. Examples of possible topics include:
 - Async/message-passing systems (Resque or Sidekiq)
 - Big Data and Machine Learning
 - JavaScript Single-page apps (SPAs)
 - NoSQL
 - OAuth (e.g., single sign-on with Facebook)
 - Secure Shell (SSH)
 - Cloud Computing: Heroku, Amazon, etc.
 - Linux System Administration
 - Pry debugger

- Full-text search

Topics:

No official lectures are scheduled for this week, however various topics may be presented to support students with their final projects