**Albany Can Code**

# JavaScript Frameworks

Spring 2019

## Course Information

### Instructors

Jamal Taylor and Matina Patsos

Slack

* Most of the class communication will take place on Slack. Please view it regularly.
* You can download slack [from their website](https://slack.com/) or from the App Store.
* The class’s public channel is *#js2019*
* You can also message the class channel for help. Keep in mind that the instructors have day jobs, so if you message us directly, they may ignore you.

Office Hours

* Instructors are available on Saturday & Sunday.
* Please schedule a time with an instructor in advance.
* We will likely be doing group study sessions on the weekends as well.

### Course Time & Location

**Class**

2/4/19—5/1/19\*

Mondays and Wednesdays

5:45pm - 8:45pm

SCCC Center City Campus

433 State St, Schenectady, NY 12305

Room 234

**Final Project**

\* While the final day of class is on May 1, 2019, you will continue to work on your final project after class ends. Your final project will be due on the day before graduation, which is TBA.

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### Course Description

This is an intermediate front-end web development course focused on teaching how to write web applications in JavaScript. The first part of the course will work on solidifying your skills in functional programming concepts, simple data structures, intermediate level algorithms, ES6, and AJAX. The second part of the course will dive into JavaScript frameworks, starting with [React](https://reactjs.org/). You will earn JSX, the virtual DOM, and how to modularize your code into components. You will then learn how to manage application state with the framework [Redux](https://redux.js.org/).

This course will also introduce you to the tools and practice of the trade. This includes working with command line, version control with git, code reviews, unit testing, and Scrum methodology. Software developers from local firms will visit the class to provide an employer contact and student mentorship.

### Prerequisite Knowledge

* JavaScript basics
* HTML5
* CSS3
* Unix command line is recommended

### Course Requirements & Software

* A laptop
* Xcode and Homebrew on Mac
* Node.js
* Git, a [Github](https://github.com/) account and [Git bash for Windows](https://git-scm.com/download/win)
* [Visual Studio Code](https://code.visualstudio.com/) or another code editor \*\*
* Chrome or Firefox
* [Slack](https://slack.com/) (can be found in the App Store)

**\* We will be going over how to installing everything during the first day of class**

**\*\* We will be teaching with Visual Studio Code and highly recommend that you use it too. If you are experienced with programming and command line, and you believe that you can translate whatever we teach you in Visual Studio Code to your editor of choice, you may opt for another editor, but we will not be able to help you if problems arise.**

**Important Note:** This syllabus, along with course assignments and due dates, are subject to change. It is the student’s responsibility to check the slack channel, course materials and updates to the syllabus. Any changes will be clearly noted in course announcements.

### Technical Assistance

Please schedule a time to meet with the instructors if you need technical assistance. As a workforce class, we encourage to Google first, as this will be expected of you in the work environment.

## Goals and Technologies

### Goals

* Students will learn practical and marketable technologies to build web applications
* Students will learn how to collaborate in a software engineering teams
* Students will learn the practices and tools used by professional software engineers
* Students will learn how to market themselves in order to gain employment into the front-end software and web development industries

### Technologies This Class Will Cover

* Intermediate level, functional style JavaScript
* React Components & JSX
* Redux
* AJAX
* Routing
* FLUX pattern
* Unit Testing
* Git
* Command line

## Projects & Grading Policy

Your grade will be based solely on your work and participation in class projects. There will be three or projects in total depending on time: two smaller projects and one to two larger, group projects. You must pass all projects to pass the class. You will be able to resubmit the first two projects for a better grade.

We will be doing in-class exercises and take-home assignments in which we will review and provide feedback. While you will not be graded on these assignments, we encourage that you do your assignments for your personal benefit. You will submit your homework through GitHub pull requests.

### Projects

For each project, the instructors will provide a Project Description, which will include detailed instructions, a list of requirements and a grading rubric. You will submit each project with github.

#### Project 1: Retrospective Board

This project will be your first React application, where you will build a retrospective board. You will write the application in React, working with JSX, components, and local component state.

#### Project 2: Bookstore

You will be creating a bookstore website with React and React Router. You will be making AJAX requests to get, search, and save books.

#### Project 3: Graduate Portal

You will be adding to features to the existing graduate portal at <http://grads.albanycancode.org/>. You will be working with a group on with React and Redux. This project may be dropped if we are running short on time.

#### Final Project

You will be working with a group on building the front end of a React web application with Redux. With this project, your participation will count more towards your grade. The project will be due the day before graduation. The details for this project will be announced at a later date.

### Grading Rubric

You will receive each a more detailed grading rubric for each project with a minimum number of points to pass. For the first two individual projects, you can expect the rubric to include:

#### Application Setup

* Is the application easy to install and start?  
  *It is an automatic failure if we cannot start the application.*
* Does the application include a README.md file within the root of the git repository and with clear instructions on how to install and start?

#### Application Functionality

* Does each screen work? Are there any bugs?

#### Project Requirements

* Does the project meet all the design and coding requirements listed within the *Project Description?*

#### Code Quality

* Does the code run without errors or warnings in the console?

### Project Resubmission

You may submit the first two projects again for a better grade. In order to resubmit, you must have made a valid attempt (your project has been bootstrapped, it runs, and you meet at least some of the requirements). You have until the last day of class.

### Graduation

The class will present all projects at graduation. For the non-group projects, we will pick two students to show their projects off to potential employers. In order to be in the running, you must meet all the criteria or have the highest grade.

## Course Policies

### Participation

Participation is mandatory for the group projects. Students will be required to show up to all final project labs and group meetings outside of class. At the end of the project, the group will review each student’s contribution and each student will be graded on your participation.

Outside of the group project, participation is not required.

### Extra Help

If you find that you have any trouble keeping up with assignments or other aspects of the course, make sure you let your instructors know as early as possible. As you will find, building rapport and effective relationships are key to becoming an effective professional. Make sure that you are proactive in informing your instructors when difficulties arise during the semester so that we can help you find a solution. We have office hours available. Matina and Jamal will be more than happy to answer any questions. We are here for you to succeed.

### Complete Assignments & Late Work

All exercises, assignments, and projects for this course will be submitted through github. With projects, you must submit something by the given deadline to get credit and to qualify for resubmission. If you have any serious or compelling reasons to postpone, you must talk to the instructors *as soon as possible*. Extensions will not be given unless under extreme or special circumstances.

### Understand When You May Drop This Course

If you must drop the course, please contact Annmarie Lanesey at [annmarie@albanycancode.org](mailto:annmarie@albanycancode.org) and notify the instructors.

### Inform Your Instructor of Any Accommodations Needed

If you have a disability and would like to request accommodations, please contact the instructors during the first week of the semester so that your accommodations may be provided in a timely manner.

### Academic Honesty

Cheating and academic dishonesty will not be tolerated. Projects discovered to be copied from other students will receive a failing grade. You may use outside code in your projects, but we suggest you reference your sources in your comments.

## Schedule

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| --- | --- | --- | --- | --- |
| **Week** | **Day of Week** | **Date** | **Subject** | **Due Dates** |
| 1 | Monday | 2/4 | Class Introduction & Software Installation & Starting Github & Data Structures |  |
| Wednesday | 2/6 | Debugging & Intro to Exercises & Data Structures |  |
| 2 | Monday | 2/11 | JavaScript Fundamentals & Functions: Inner Workings of JavaScript |  |
| Wednesday | 2/13 | JavaScript Fundamentals & Functions: Scope |  |
| 3 | Monday | 2/18 | JavaScript Fundamentals & Functions: High Order Functions |  |
| Wednesday | 2/20 | JavaScript Fundamentals & Functions: High Order Functions |  |
| 4 | Monday | 2/25 | JavaScript Fundamentals & Functions: High Order Functions |  |
| Wednesday | 2/27 | JavaScript Fundamentals & Functions: Object Oriented JavaScript & "this" Keyword |  |
| 5 | Monday | 3/4 | JavaScript Fundamentals & Functions: recursion, "this" Keyword & unit testing |  |
| Wednesday | 3/6 | Intro to React - JSX & Stateless Components |  |
| 6 | Monday | 3/11 | Events, Handling Forms, React Local State with Classes |  |
| Wednesday | 3/13 | Continued from Monday & 1st Project Kickoff |  |
| 7 | Monday | 3/18 | AJAX & React Lifecycle Methods |  |
| Wednesday | 3/20 | React & 1st Project Lab |  |
| 8 | Monday | 3/25 | Hooks & Routing |  |
| Wednesday | 3/27 | Routing & 1st Project Lab |  |
| 9 | Monday | 4/1 | UI Testing & Intro to Redux | 1st Project Due |
| Wednesday | 4/3 | Redux & React & 2nd Project Kickoff |  |
| 10 | Monday | 4/8 | Redux & React |  |
| Wednesday | 4/10 | Redux & React |  |
| 11 | Monday | 4/15 | Redux & React |  |
| Wednesday | 4/17 | Final Project Kickoff | 2nd Project |
| 12 | Monday | 4/22 | Redux & AJAX |  |
| Wednesday | 4/24 | Redux & AJAX |  |
| 13 | Monday | 4/29 | Redux & AJAX |  |
| Wednesday | 5/1 | Redux & AJAX | 3rd Project |

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