

Fall 2023

CS 490: Guided Design in Software Engineering

William McCann

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Basic Info

CS 490 Guided Design in Software Engineering

Tuesdays 6:00pm - 9:00pm

Kupfrian 210

Instructor: Bill McCann

Contact Information

email: wfm8@njit.edu

Discord: [CS 490-101 2023 Fall \(@iambillmccann\)](#)

Virtual Office Hours - by appointment

I am typically at GITC 4th floor - 4pm to 5:30pm

Prerequisites

CS 280. Programming Language Concepts

CS 288. Intensive Programming in Linux

Grading

Item	Points
Individual Exercises	25
RedwoodJS Homework	15
Quizes	40
Course Project	100
Retrospectives	20

There will be opportunity for extra credit

Special Guests

During the semester we will invite software professionals to our class for "Ask Me Anything" sessions.

Getting Ready

It is encouraged that students use a personal laptop as their development device. Device recommendations are:

- Apple computer running MacOS
- Linux computer
- Windows computer running WSL2 (Windows Subsystem for Linux)

Devices must have a minimum of 8g of memory with 16g recommended.

Please install the following software:

- Git

- NodeJS version 18.x
- Yarn version 1.15 or greater
- VSCode (optional)

Sign up for a GitHub account (if you don't already have one) at <https://github.com>

Sign up for a Discord account (if you don't already have one). Join the server [CS 490-101 2023 Fall](#)

Outcomes

- Explain the major theories and methods applicable to professional software engineering.
- Design, implement and evaluate software architecture to meet desired needs.
- Function effectively on a team to accomplish a goal.
- Use current techniques, skills, and tools necessary for software development.

Class Schedule

The following is **subject to change**, but here our plan for the semester ...

Class 1	Sep 5	Introduction, Discord and GitHub, Source Code Management
Class 2	Sep 12	JavaScript Primer, Redwood Introduction, React Primer
Class 3	Sep 19	Software Architecture, APIs and GraphQL
Class 4	Sep 26	SDLC, Jira
Class 5	Oct 3	Project Kickoff and Project Planning
Class 6	Oct 10	Application Security, Cloud Computing
Class 7	Oct 17	Project Proposals, Sprint 1 Planning
Class 8	Oct 24	Software Quality, Docker and Kubernetes
Class 9	Oct 31	Sprint 1 Demo; Sprint 2 Planning
Class 10	Nov 7	Pair Programming, Programming Paradigms, Languages
Class 11	Nov 14	Sprint 2 Demo; Sprint 3 Planning
Class 12	Nov 28	Databases

Class 13	Dec 5	Sprint 3 Demo; Sprint 4 Planning
Class 14	Dec 12	Getting Hired
Class 15	Dec 19	Sprint 4 Demo

Project Overview

The [CS490 project](#) is designed to introduce students to the experience of a professional software engineer. The student will function as a member of a team adding features to a core codebase in creation of a SaaS product. The student will be onboarded to the product codebase and will use Git and GitHub to manage their work. Development will follow an Agile software development lifecycle (SDLC). Read more [here](#).

Cheating Policy

Cheating on a programming assignment results in zero credit for all students involved. Cheating on an exam will result in an "F" in the course.

Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is prohibited and devalues the degree that you are working to. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at:

<http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. **Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university.** If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu.