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CS 490: Guided Design in Software Engineering

William McCann

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CS490102-Design In Software Engr

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Basic Info

CS 490 Guided Design in Software Engineering

Tuesdays 6:00pm - 8:50pm

Central King Building room 124

Instructor: Bill McCann

Contact Information

email: **wfm8@njit.edu (mailto:wfm8@njit.edu)**

Discord: **CS 490-102 Spring 2023** ⤷

(https://discord.com/channels/1061035393241329824/1061035393962745928) (@iambillmccann)

NJIT Office Hours - Tuesdays 4pm to 5:30pm. GITC 4321 MS Study Hall

Virtual Office Hours - by appointment

Prerequisites

CS 280. Programming Language Concepts

CS 288. Intensive Programming in Linux

Grading

Item	Percent of Grade
Individual homework	10%
Exam	30%
Course Project	60%

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 14.19 or greater, but not greater than 16.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** ⮕
(https://github.com)

Sign up for a Discord account (if you don't already have one). Join the server "CS 490-102 Spring 2023"

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 the schedule for our class. This is subject to change.

Date	Topics
January 17	Introduction. Source Code Management
January 24	Homework #1 due. JavaScript primer. RedwoodJS primer.
January 31	Homework #2 due. React primer. React Hooks.
February 7	Homework #3 due. SDLC. APIs.
February 14	Homework #4 due. Google Calendar. Chakra UI.
February 21	Project introduction and kickoff. Sprint 1 planning.
February 28	Software Architecture. Software Quality.
March 7	Sprint 1 demo. Sprint 2 planning.
March 14	No class (spring break)
March 21	Pair programming. Programming paradigms.
March 28	Sprint 2 demo. Sprint 3 planning.
April 4	Application security. Cloud computing.
April 11	Sprint 3 demo. Sprint 4 planning
April 18	Getting Hired
April 25	Final reports.
May 2	No class (Friday classes)
May 9	Final exam

Project Overview

The **CS490 project** [(https://njit.instructure.com/courses/26619/pages/project-overview)](https://njit.instructure.com/courses/26619/pages/project-overview) 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** **[(https://njit.instructure.com/courses/26619/pages/project-overview)](https://njit.instructure.com/courses/26619/pages/project-overview)** .

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 ⤏ (https://t.e2ma.net/click/7xcjqfb/nijeoovf/vc0hkjx) .

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 (mailto:dos@njit.edu)** .

Course Summary:

Date	Details	Due
Sun Jan 22, 2023	📝 **Homework #1** [(https://njit.instructure.com/courses/26619/assignments/309694)](https://njit.instructure.com/courses/26619/assignments/309694)	due by 11:59pm
Sat Jan 28, 2023	📝 **Homework #2** [(https://njit.instructure.com/courses/26619/assignments/317369)](https://njit.instructure.com/courses/26619/assignments/317369)	due by 11:59pm