IS219: Advanced Website Development

Course Information

Course Number: IS219

Course Title: Advanced Website Development

Section: 001

Semester: Spring 2025

Date & Time: Tuesday/Friday 2:30 PM - 3:50 PM

Location: KUPF 203

Credit Hours: 3

Note: Students must bring their own device for this section.

Instructor Information

Name: Keith Williams

Office: GITC 3420

Email: kwilliam@njit.edu (Discord Preferred)

Discord: Primary method of communication - join link provided in Canvas

Virtual Office: https://njit-

edu.zoom.us/j/93815730317?pwd=edL6VLu6EoYTRVGnS0WuX y4dbndfot.1

Office Hours (GITC 3420)

Day	Time	Format	Designated Course
Tuesday	1:00 PM - 2:20 PM	In- Person/Discord	IS601
Thursday	4:00 PM - 5:30 PM	In- Person/Discord	IS421
Friday	4:00 PM - 5:30 PM	In- Person/Discord	IS322

Additional Support:

- Available on Discord throughout the week
- Quick questions can be answered anytime on Discord
- Virtual meetings can be scheduled outside office hours by appointment
- Message on Discord before visiting office hours
- All students are welcome during any office hour time slot

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Course Description

This hands-on course focuses on modern web development using JavaScript and React. Students will learn advanced concepts in both frontend and backend development, including state management, API integration, and modern development workflows. Through practical assignments and projects, students will gain experience with GitHub, continuous integration using GitHub Actions, and industry-standard development practices. The course emphasizes real-world problem-solving and production-quality code development.

Prerequisites

- IS117 or IT202
- IS218

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Course Materials

- Online and Instructor Created
- No required textbook purchase

Course Technologies

- JavaScript/ES6+
- React
- Node.js
- Git/GitHub
- GitHub Actions
- VS Code
- Additional tools as needed

Class Communication

We will be using Canvas for posting projects, class resources, and other class announcements. Students having questions on projects, etc., may contact Professor Williams directly using Discord. If the answer would benefit the class, post the question in the class channel in Discord. Students are obligated to log and participate regularly in Discord. Contact me using Discord only, since I want to respond to you as soon as possible and not have your messages accidentally lost in email.

Instructional Philosophy

The #1 thing that I am trying to teach you is technical problem solving and helping you to develop some confidence in your abilities.

- Isolate the problem
- Read the error message
- Google the part of the error message that is not specific to your machine
- Do not give up
- If you ask a question, post a screen shot
- Do not say "I have a problem" without including information about the problem
- Do not post code in Discord, link to it on GitHub

You are Learning Hard Things

- You must respect that you are learning difficult material and that many people have succeeded, you will too
- If I give you a certain amount of time for something such as 2 weeks for a project, this means it really will take you two weeks
- Projects can take 40 hours of work to complete depending on your previous technical experience
- You are learning the top industry skills in software development
- These skills are in high demand and result in excellent salaries if you can manage to learn them

 I am preparing you to obtain jobs that pay more than \$100,000 dollars and this means that the job is hard and so is learning how to do it

Course Grades

- Project 1 25%
- Project 2 25%
- Homework 50%
- Extra Credit for Team Collaboration Report 0-3% of final grade

Grading Scale

Grade	Range	Significance
A	94-100	Superior
B+	87-93	Excellent
В	80-86	Very Good
C+	74-79	Good
С	66-73	Acceptable
D	60-65	Minimum
F	< 60	Inadequate

Grading Policy

Do not ask me about an increase in your grade. I am not difficult with grades, and I already give you some consideration in how I grade because my main goal is for you to learn these technologies and I understand that not everyone has the same previous experience with technology. If you are receiving bad grades, you have not done your work and are not serious or possibly qualified to do this type of work.

Homework vs. Project Grading

- Homework is graded on a complete/incomplete basis
- Projects are graded in detail and feedback will be provided
- Projects consist of previous content from homework and additional content
- Each project is worth 100 points
- You will receive at least 50 percent for making a substantive effort
- Additional 50 percent is determined by how well the project works, looks, and is coded

Late Policy

- Homework assignments that are late by more than 2 days are not accepted under any circumstances except with a medical excuse from a doctor or other verifiable proof such as military services
- Projects that are late by more than 4 days are penalized 10% per day and are not accepted after 4 days under any circumstances except with a medical excuse from a doctor or other verifiable proof

 Do not ask me to turn something in late. You have adequate time to complete your work and the consequences for not doing so are manageable if you do not make a habit of it

Incomplete Policy

Incompletes are not given under any circumstance other than a doctor's note for serious medical issues or military service.

Academic Integrity

My expectation is that each person will complete original work for this course and will not copy from fellow students or tutorials online. It is OK to refer to tutorials online; however, you will be considered in violation of the NJIT honor code by submitting work found online. Any violations of the honor code will be referred to the Dean of Students for investigation and possible disciplinary action.

Every assignment/project is a 'home-mini-exam.' The NJIT Honor Code will be strictly upheld. Students found cheating/collaborating/plagiarizing will be immediately referred to the Dean of Students and the NJIT Committee on Professional Conduct and subject to possible Disciplinary Probation, a permanent marking on the record, possible dismissal and a grade of 'F' in the course.

Course Specific Academic Integrity Instructions

- Every commit from another student on your project must be documented in the collaboration report
- The collaboration report will be the evidence that the collaboration is authorized by both students and is of an authentic nature
- You must make clear commit messages and show a history of working on a project
- Projects and homework with commits on a readme file or a series of commits that do not show a history of work on the project will be given a 0 on the first occurrence
- You will fail the course automatically for any further violations of this policy

Sometimes I make Mistakes

I am human and I make mistakes sometimes. My goal is to provide you with the best learning experience possible, but I do not make it an easy process because you need to bring your skills up to a standard that will result in at least an entry level position in this field. Technologies change all the time and things are constantly being updated, what worked yesterday may not work today and you must become accustomed to this.

IS219 Spring 2025 Course Calendar

Week	Dates	University Dates	Course Topics & Deliverables
1	Jan 21-24	First Day of Classes (Jan 21) MLK Day (Jan 20)	Course Introduction - JavaScript Environment Setup - Git/GitHub Review
			Lab 1: Development Environment
2	Jan 27-31	Last Day to Add/Drop (Jan 27)	Modern JavaScript Fundamentals - ES6+ Features - Async Programming Lab 2: JavaScript
			Basics
3	Feb 3-7	Last Day for 90% Refund (Feb 3)	Frontend Development - DOM Manipulation - Event Handling
			Lab 3: DOM & Events
4	Feb 10-14		React Fundamentals - Components - Props & State Lab 4: React Basics **Project 1 Assigned**
5	Feb 17-21	Last Day for 50% Refund (Feb 17)	React State Management - Hooks - Context Lab 5: State Management
6	Feb 24-28		React Component Patterns - Lifecycle Methods

Week	Dates	University Dates	Course Topics & Deliverables
			- Error Boundaries Lab 6: Advanced React
			Project 1 Due
7	Mar 3-7		Backend Integration - REST APIs - Fetch/Axios
			Lab 7: API Integration
8	Mar 10-14	Last Day for 25% Refund (Mar 10)	Testing & Debugging - Jest - React Testing Library
			Lab 8: Testing
-	Mar 16-22	Spring Recess	No Classes
9	Mar 24-28		CI/CD with GitHub Actions - Automated Testing - Deployment Lab 9: CI/CD
			Assigned**
10	Mar 31-Apr 4	Wellness Day (Apr 3)	Performance & Optimization - Code Splitting - Lazy Loading
			Lab 10: Optimization
11	Apr 7-11	Last Day to Withdraw (Apr 7)	Security Best Practices - Authentication - Protected Routes

Week	Dates	University Dates	Course Topics & Deliverables
			Lab 11: Security
12	Apr 14-18	Good Friday (Apr 18)	Advanced Topics - Custom Hooks - Performance Patterns Lab 12: Advanced Features
13	Apr 21-25		Project Workshop - Code Review - Best Practices **Project 2 Due**
14	Apr 28-May 2		Advanced Integration - Error Handling - Production Deployment
15	May 5-7	Last Day of Classes (May 7)	Course Wrap-up - Final Presentations - Project Demonstrations
	May 8-9	Reading Days	Study Time
	May 10-16	Final Exams	Project Demonstrations

Key Dates and Deliverables

Project Timeline:

- Project 1 Assigned: February 10
- Project 1 Due: February 28
- Project 2 Assigned: March 24
- Project 2 Due: April 25

Lab Assignments:

- Labs are assigned weekly
- Due Sundays at 11:59 PM EST
- Each lab builds on previous concepts

Important Notes:

- All assignments due at 11:59 PM EST
- Schedule subject to adjustment based on class progress
- Additional review sessions may be scheduled based on class needs
- Project demonstrations will be scheduled during class times
- Keep an eye on Discord for schedule updates/changes