Special Topic: Relational Database and Web Applications

33:136:440 Special Topic: Relational Database and Web Applications
Rutgers Business School · 2024 Fall

Meeting Days/Time: Wednesday 12:10-3:10 pm
Location/Room: Business Rockafeller Road - 4085
Instructor: Lichuan Ren
Email: lr629@soe.rutgers.edu
Office Hours: Friday 2-5 pm, Richard Weeks Hall of Engineering - 220
Course Website: https://rutgers.instructure.com/courses/301027

Course Overview

This course explores relational databases and web applications, with a stronger focus on the practical aspects of designing, developing, and deploying full-stack applications. Students will gain hands-on experience in client-side and server-side development, integrating relational databases with web applications, and deploying web applications.

Prerequisites

Students are expected to have basic knowledge of Database Management Systems (DBMS) and have completed introductory courses on databases and programming.

Learning Outcomes

By the end of this course, students will be able to:

- Understand and apply advanced concepts in relational databases.
- Design and implement dynamic web applications with database integration.
- Develop full-stack applications using modern web development frameworks.
- Work collaboratively on a group project, simulating real-world web application development.

Course Schedule *(Subject to Change)*

Week	Date	Topic
1	09/04	Course Introduction, Overview of Relational Database and Web Applications, Setting Up the Development Environment

2	09/11	Client-Side Development I: HTML & CSS
3	09/18	Client-Side Development II: JavaScript for interactivity, DOM manipulation, event handling
4	09/25	Server-Side Development I: Introduction to server-side programming (Node.js, Express.js)
5	10/02	Server-Side Development II: Handling HTTP requests and responses, RESTful APIs
6	10/09	Midterm Exam
7	10/16	Full-Stack Development I: Full-stack frameworks, User authentication and authorization
8	10/23	Full-Stack Development II: Building RESTful APIs with authentication
9	10/30	Full-Stack Development III: Real-time applications
10	11/06	Deploying web applications
11	11/13	Advanced Topics: Security in web applications, Performance optimization
12	11/20	Project Work: In-class work on group projects
13	11/27	No class
14	12/04	Final Project Presentations

Grading

- Individual Project (Personal Website): 25%
- Group Project (Full-Stack Application): 30%
- Midterm Exam: 20%
- Attendance & In-Class Exercises/Quizzes: 25%
- Participation: Up to 10 bonus points

Typically, grades are assigned as follows from your final numeric grade:

A: 90-100	B+: 85-89	C+: 75-79	D: 60-69	F: 0-59
	B: 80-84	C: 70-74		

Projects

Project 1: Personal Website

Description: Create a personal portfolio website that includes an overview of your skills, projects, and a contact form. The website should be responsive and demonstrate a good understanding of HTML, CSS, and JavaScript.
Deliverables: Live website link, source code (GitHub repository)

Project 2: Group Project - Full-Stack Application

Description: Work in teams to develop a full-stack application with user authentication, database integration, and deployment. The project should solve a real-world problem and demonstrate a comprehensive understanding of full-stack development.
Deliverables: Live application link, source code (GitHub repository), project report

Textbooks & Resources

Textbook: Web Development with Node and Express: Leveraging the JavaScript Stack by Ethan Brown
Online Resources: MDN Web Docs, W3Schools, Stack Overflow

Attendance Policy

Attendance is mandatory and will significantly impact your grade. Students are allowed up to two absences. Only absences due to religious observance, Rutgers-approved activities, illness, or family emergencies are allowed. If you are to be absent, report your absence in advance at https://sims.rutgers.edu/ssra/. Each additional absence will result in a reduction of the Attendance & In-Class Exercises/Quizzes grade by 10%. Absences must be documented and approved by the instructor in advance.

Academic Integrity

Students are expected to adhere to the highest standards of academic integrity. Any form of cheating or plagiarism will not be tolerated and will result in disciplinary action.

Bias incidents

Bias incidents: an act – either verbal, written, physical, or psychological that threatens or harms a person or group on the basis of actual or perceived race, religion, color, sex, age, sexual

orientation, gender identity or expression, national origin, ancestry, disability, marital status, civil union status, domestic partnership status, atypical heredity or cellular blood trait, military service or veteran status.

Bias incidents can be reported online at:
New Brunswick Bias Incident Report Form
Newark Bias Incident Report Form

AI Usage Policy

Use of AI tools such as ChatGPT is permitted for learning, debugging, and assisting with understanding course material. However, AI is not allowed to be used in exams, projects, or for completing graded assignments. All work submitted for grading must be your own.