

CMPS 350 - Web Development Fundamentals

Syllabus and Course Admin



Dr. Abdelkarim Erradi

Department of Computer Science & Engineering

Qatar University

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Outline for Today

- Course introduction
- Grading
- Policies

About the Instructor

- **Dr. Abdelkarim Erradi**
 - **Office:** Office **C07-132** Female Engineering Building
 - **Phone:** 4403 4254

Office hours:

- Sunday **12:20-1:30pm** at C07-132 Female Engineering Building
- You can talk to me **after** class if you have a quick issue/question
- **Best way to contact me is via Teams chat**

Course Goals (1 of 2)

1. Introduce the **principles** and the **technologies** to design and develop Web applications
2. Provide students with the opportunity to design, implement, and test interactive and dynamic Web applications using various **client-side** and **server-side** technologies
3. Employ state-of-the art application frameworks and development tools to build Web applications

Course Goals (2 of 2)

- Gain practical **hands-on experience** with web-based technologies
 - Often, the best way to understand something is to build it yourself
 - Labs Activities/Assignments
 - Project: Substantial implementation project to design and implement a Web Application
- => Put what you learned into use!
- => This is the closest you can get to experience how real-world Web applications are designed and built

Why this Course?

- Web Applications are **critical applications** that **automate business processes** and **support the organization in achieving its goals**
 - There are typically characterized by:
 - Users often require fast response time & good user experience
 - Mission critical hence they need to be **secure, reliable** and **highly available**
 - Often used by a large number of concurrent users. Hence, they need to be **scalable**
- => This course **equips you with the skills** and best practices needed to design and develop Web applications with the required quality attributes

Course Roadmap



Web Client

Request

Response



Web Server

Frontend development

HTML for page content & structure



CSS for styling



JavaScript for interaction



Backend development

Web API

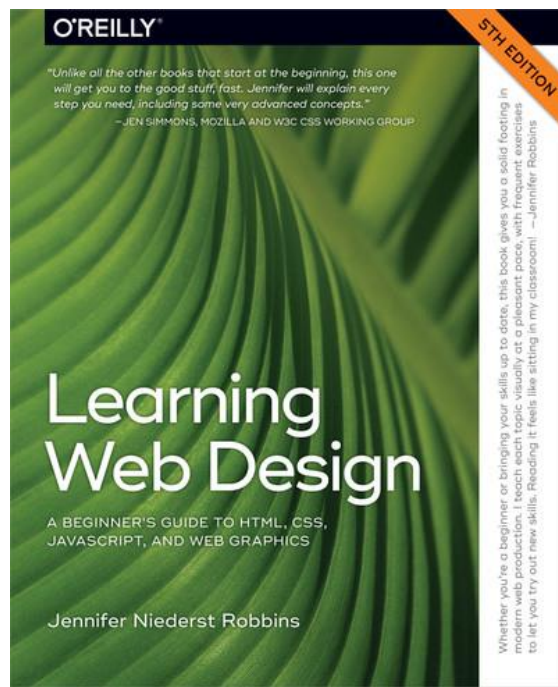
Web Pages

Data Management

NEXT.js



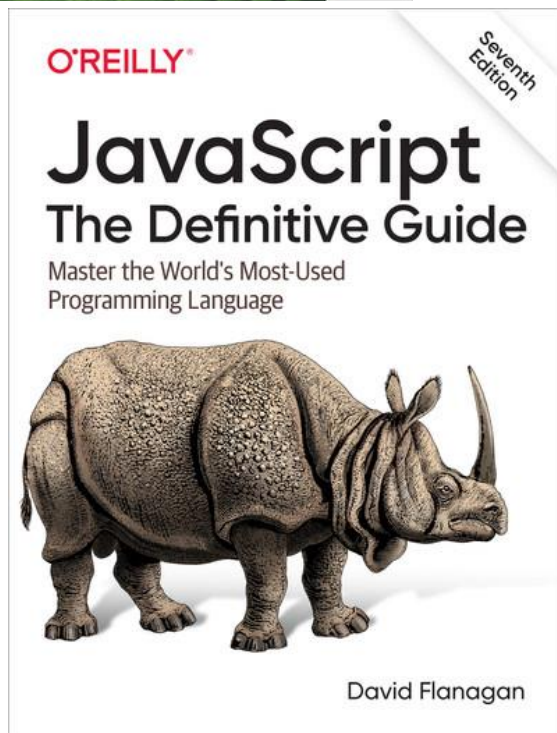
Topics	Chapter	Weeks	Assessment
HTML	T1 - Part II. HTML for Structure	1.5	Q1 (week 2)
CSS	T1- Part III. CSS for Presentation	1.5	A1 (week 3)
JavaScript	T2 - Chapters 3, 4 and 5	1	Q2 (week 4)
JavaScript OOP & Unit Testing	T2 - Chapters 6 to 10	1	A2 (week 5)
Client-side JavaScript	T2 - Chapter 15	1	Q3 (week 6)
Web API with Next.js	T2 - Chapter 16	1	A3 (week 7)
Midterm Exam		1	Lab Midterm Project Phase 1 (week 8)
Asynchronous JavaScript	T2 - Chapter 13	1	Q4 (week 9)
Data Management using Prisma	Online readings	1	A4 (week 10)
Multi-page full stack app using Next.js and React	Online readings	3	Q5 (week 11)
			A5 (week 12)
			Q6 Project Phase 2 (week 13)
Securing Web applications: authentication and authorization	Online readings	1	Lab Exam (week 14)
Total		14	



Recommended Textbooks

Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics

5th Edition, Jennifer Robbins
2018, O'Reilly Media [↗](#)



JavaScript: The Definitive Guide

7th Edition, David Flanagan
2020, O'Reilly Media [↗](#)

How to get the textbook online

O'REILLY®

Welcome! Get instant access through your library.

- Visit <https://www.oreilly.com/library-access/>
- Click **'Institution not listed?'**

Select your institution



Institution not listed?



- Login using your QU email and password
- **Learning Web Design**
<https://learning.oreilly.com/library/view/learning-web-design/9781491960196/>
- **JavaScript: The Definitive Guide**
<https://learning.oreilly.com/library/view/javascript-the-definitive/9781491952016/>

Your Grade is Based on


Theory:

Quizzes:	10% (5 out of 6) - no make-up quiz if absent
Midterm Exam:	10%
Final Exam:	10% (Consult final exams timetable)
Project Phase 1:	15%
Project Phase 2:	15%

Lab:

Lab Assignments:	20% (4 out of 5)
Midterm Lab Exam:	10%
Final Lab Exam:	10% (During the last Lab)

How to succeed in this course....

- ❑ Do your weekly assigned readings
- ❑ **Read the slides before you come to the class**
- ❑ **Exercise a lot – study as many examples as possible**
 -  – Understand and enhance the examples I provide as well as the ones in the textbook and the ones in the provided resources
- ❑ **Attend and participate in class**
 - ❑ Many of the exam questions are from the class explanation
- ❑ Do all the assignments and project **yourself**. Actively contribute to your project.
- ❑ Seek help when needed and ask questions (and do it **EARLY**): During Lectures/Labs & Come to office hours



We learn swimming by swimming and we learn design and programming by practicing it!

Software we will use

- VS Code <https://code.visualstudio.com/>
- GitHub
- Node.js
- Prisma <https://www.prisma.io/>
- For modeling we will use **Visual Paradigm**
<https://ap.visual-paradigm.com/qatar-university/license.jsp>
- Other tools will be communicated to you as we go



**GitHub will be used to deliver Slides,
Examples, Assignments, and Project**

Check <https://github.com/cmpps350s2023/cmpps350-content-l5>
regularly!

Post your technical questions to

<https://github.com/cmpps350s2023/cmpps350-content-l5/issues>

All Communications using Teams (No emails)

Important Notes

- **Attendance...** QU attendance policies will be enforced
 - Do not miss classes/labs
- **Start your assignments and project early!!!**
- This is a senior-level course and students are expected to learn independently as much as needed in order to complete the course requirements
 - Do not expect me to find/fix your code bugs
 - Do not expect me to find and fix your technical issues
 - => I can only give you high level suggestions and guidance

No 'Free Riding' allowed

- 'free riders' (who do not contribute much) => not acceptable and not fair for hardworking students
 - You must actively contribute to your project and do your ultimate best to deliver the best possible results
 - Otherwise you will be asked to do the project alone
 - **Report free-riders early**



Plagiarism / Cheating

- “Getting an unfair academic advantage”
 - Using other people's work as your own
 - Not doing your assignments yourself
- All the code you submit has to be your own
 - Only exception: Code I have provided or explicitly authorized
 - **NO** code you have found on the web. **NO** sharing with others.
- **Do your homework and project yourself**
 - Do NOT copy from each other or from the Internet - **I will know it!**
 - You can be picked-up randomly to explain your implementation
 - Cheating will be treated very seriously
- Penalties START with a zero on the assignment, failing the course! and other disciplinary actions as per QU policy

To do before next class

- Install the required software: VS Code & GitHub desktop (see announcement on Teams)
- Decide your team members and enter them in the spreadsheet on Teams
- Create your GitHub account (firstname-quUsername)
- Prepare any questions you might have



I wish you a fruitful and enjoyable journey!