CMPS 350 - Web Development Fundamentals

Syllabus and Course Admin

Dr. Abdelkarim Erradi

Department of Computer Science & Engineering

Qatar University


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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

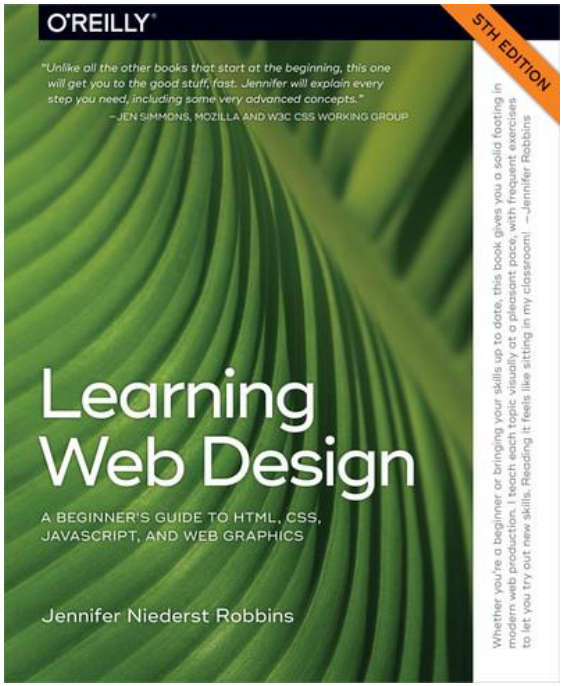
Web API

Data Management

Dynamic Content

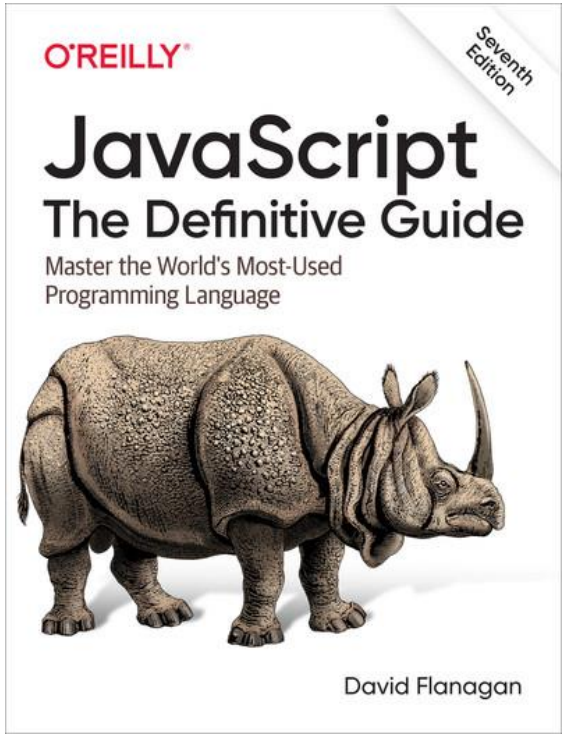
Topics	Chapter	Weeks	Assessment
HTML	T1 - Part II. HTML for Structure	1.5	**Q1 (week 2)**
CSS	T1- Part III. CSS for Presentation	1.5	**A1 (week 3)**
JavaScript	T2 - Chapters 3, 4 and 5	1	**Q2 (week 4)**
JavaScript OOP & Unit Testing	T2 - Chapters 6 to 10	1	**A2 (week 5)**
Client-side JavaScript	T2 - Chapter 15	1	**Q3 (week 6)**
Web API with Node.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

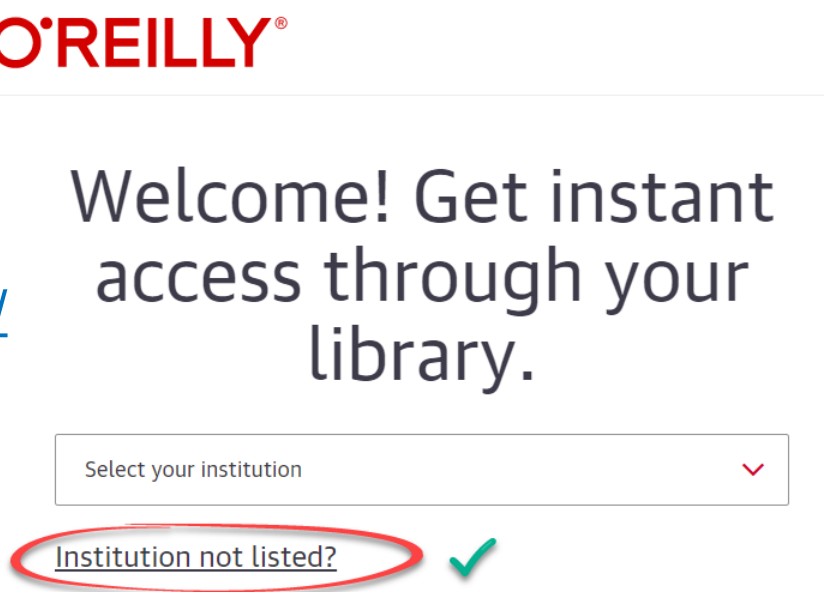


JavaScript: The Definitive Guide

7th Edition, David Flanagan
2020, O'Reilly Media

How to get the textbook online

- Visit https://www.oreilly.com/library-access/
- Click '**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/cmps350s2023/cmps350-content-l5

regularly!

Post your technical questions to

https://github.com/cmps350s2023/cmps350-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!