MET CS 601 Frontend Web Application Development
2026 Fall 2 Online Course Syllabus

Instructor

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Course Duration

Start: October 27, 2026
End: December 14, 2026

Course credits

4 credits

Course Description

This course equips students with essential front-end development skills, starting with foundational JavaScript techniques such as DOM manipulation and event handling, and advancing to interactive web technologies like HTML's Drag and Drop, Canvas, and SVG. Students are exposed to asynchronous operations including AJAX, the Fetch API, and Web Workers, and will learn to craft responsive designs using Flexbox, CSS Grid, and advanced CSS selectors. A comprehensive exploration of TypeScript and its main feature, static typing, as well as other capabilities are also covered. The course concludes with a comprehensive dive into ReactJS, covering its core architectural concepts, component-based structure, and state management techniques.

Prerequisites: MET CS 200 or instructor consent

Course Learning Objectives

This course will enable you to:

- Become familiar with the basic definitions, key concepts, terminology, and historical context of Health Informatics
- Understand fundamental characteristics of data, information, and knowledge in the Health Informatics domain
- Become familiar with common algorithms for health applications and IT components in representative clinical processes
- Develop understanding of population health and precision medicine
- Understand basic principles of knowledge management systems in biomedicine
- Develop understanding of various aspects of Health Information Technology standards

- Become familiar with IT aspects of clinical process modeling and health information systems

Course Outline

There are general discussion boards that are not graded. These spaces are available for students to raise questions, discuss course-related topics with classmates and facilitators, and receive updates from instructors regarding common issues or important announcements.

Assignments –There are weekly assignments that are due throughout the course, as well as a Term Project due at the end of the course.

Live Classroom sessions – One Live Classroom session will be provided for each module during this course. Days/times can be found in the Study Guide. Students are not required to attend and recordings will be provided when possible. Material presented during these sessions may be included in the final exam.

Self-Assessment Quizzes – There is a non-graded practice quiz for each module. You can take each quiz multiple times to practice your skills.
CodePen Examples – Each module includes a scenario to practice hands-on coding examples.

Module 1 – The DOM and Intermediate JavaScript

- **The Document Object Model (DOM) and Events** – You will learn about the Document Object Model and how to handle events in JavaScript.
- **Intermediate JavaScript** – We will cover client-side form validation, high order functions, callbacks, closures, and inheritance. The major purposes of maintaining patient records.

Module 2 – Advanced JavaScript and Asynchronous JavaScript

- **Advanced JavaScript** – You will learn more about the object-oriented programming (OOP) features of JavaScript, including namespaces, modules, drag and drop, graphics, and more.
- **Asynchronous JavaScript** – We will cover how to use JavaScript to make asynchronous requests to a server in order to change content dynamically without needing to reload the entire web page.

Module 3 – Advanced CSS

- **Building Flexible and Responsive Web Designs** – You will learn to create a responsive webpage layout using CSS layout techniques, Flexbox and CSS grid.

- **Advanced CSS Selectors and Pseudo-classes** – You will learn to style web pages using advanced CSS selectors and pseudo-classes.

Module 4 – Introduction to TypeScript

- **TypeScript Syntax and Data Types** – You will learn the fundamentals of TypeScript, including its syntax, data types, control flow statements, arrays, functions, and type annotations and inference.
- **Object-Oriented Programming and Tooling** – You will learn about the object-oriented programming features of TypeScript such as objects, classes, constructors, properties, and inheritance.

Module 5 – Introduction to React

- **React Basics and Core Concepts** – You will learn about the React library and its core concepts like JSX, templates, data binding, event handling, and more.
- **Components and Conditional Rendering** – You will learn how to create reusable components, manage state and props, and render dynamic content in response to user interaction.

Module 6 – React Component Communications, Routing, Hooks, and Forms

- **Routing and Component Communications** – You will learn how to create custom routes to render content and pass information between React components via props and hooks.
- **React Forms** – You will learn how to create controlled forms and uncontrolled forms, and explore unique feature of each.

Module 7 – Prepare for and Take the Final Exam

At the end of the course, you will prepare for and take a proctored final exam.

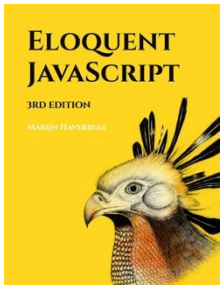
The course will remain open two weeks after the final exam so that you can continue ask any questions about your grades or the course. This is also a time when we enter into a dialogue where we endeavor to learn from you how we can modify the course so that it better meets your needs.

Term Project

This course also features a comprehensive term project that is due in Module 6. Instructions for the term project along with a grading rubric can be found in the course homepage. Further details will be shared in the Live Classroom sessions throughout the course.

Course Materials

Required Books



Haverbeke, M. (2024). *Eloquent JavaScript: A Modern Introduction to Programming* (4th ed.). No Starch Press.
ISBN: 9781593279509

Download the free book as a PDF.

Required Course Software

At a minimum, you will need a plain text editor and at least *two* different web browsers installed on your Internet connected computer. Grading will be performed by viewing student work in Mozilla Firefox.

We recommend that you use free software choices for this course. Software with a monetary cost associated with it is not necessary but may be helpful if you anticipate doing extensive web development work after this course ends.

Text Editors

The table below lists a few *plain* text editors you can use in this course (you only need one). You should *not* use a word processor such as Microsoft Word or OpenOffice Writer for writing web page content/code.

Name	Platform	Cost
Notepad	Windows	Free - built in
TextEdit	Mac	Free - built in
Vim	Windows, Mac, Linux	Free
gedit	Windows, Mac, Linux	Free
GNU Emacs	Windows, Mac, Linux	Free
Brackets	Windows, Mac, Linux	Free
Editpad.org	Online	Free
Notepad++	Windows	Free
Atom	Windows, Mac, Linux	Free
Sublime Text	Windows, Mac, Linux	Free trial

Web Browsers

The latest version of Mozilla Firefox should serve as your primary web browser for course work and navigating around Online Campus. Secondary web browsers can include the latest versions of Microsoft Edge, Apple Safari, Google Chrome, and Opera.

Recommended Software

You will find that an Integrated Development Environment (IDE) provides many benefits over a plain text editor for the work you will be completing in this course.

You may also need an FTP client if you plan to upload your assignments to a web server. We recommend FileZilla as a free FTP client.

Again, we recommend that you utilize free software choices for this course. Software with a monetary cost associated with it is not necessary but may be helpful if you anticipate doing extensive web development work after this course ends.

Recommended IDEs are listed in the following table (you only need one):

Name	Platform	Cost
Aptana	Windows, Mac, Linux	Free
Eclipse	Windows, Mac, Linux	Free
NetBeans	Windows, Mac, Linux	Free
Komodo Edit	Windows, Mac, Linux	Free
Visual Studio Code	Windows, Mac, Linux	Free
WebStorm	Windows, Mac, Linux	$, but free for students
Coda 2	Mac	$

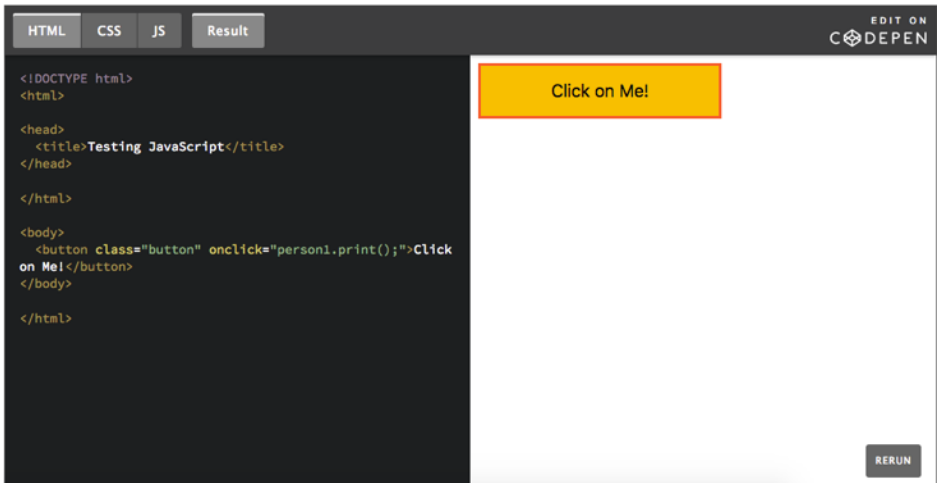
Helpful Resources on the Web

- Mozilla Developer Network (MDN) - Free web technology tutorials and documentation.
- validator.w3.org – Validate your HTML.
- https://jigsaw.w3.org/css-validator/ - Validate your CSS.
- http://jslint.com/ - Code quality tool for JavaScript.
- https://regexone.com/ - Helpful resource on learning and using regular expressions.

CodePen Examples

At the end of each module, you will find a CodePen example. This is a code editor embedded in the Blackboard page. You can modify the code and see the results in the Results window. If you reload the page, the code will return to the original. If you wish to save your changes, click “Edit

on CodePen” in the upper right-hand corner. You will go to the CodePen site where you can create an account and save your own Pens. These examples are intended for you to experiment and are not required assignments.



Module 1 Study Guide and Deliverables
(October 27 – November 2)

Readings:

Module 1 Online Lecture

Eloquent JavaScript, Haverbeke

- This optional text covers supplementary and more advanced materials related to this week's topics.

Discussions:

- Discussion 1 postings end Tuesday, November 3, at 6:00 AM ET

Assignments:

- Assignment 1 due Tuesday, November 3 at 6:00 AM ET

Self-Assessments:

- Practice Quiz 1

Live Classrooms:

- Wednesday, October 28 from 7:00 PM to 9:00 PM ET
- Live Office: to be determined

Module 2 Study Guide and Deliverables
(November 3 – November 9)

Readings:

Module 2 Online Lecture

Eloquent JavaScript, Haverbeke

- This optional text covers supplementary and more advanced materials related to this week's topics.

Discussions

- Discussion 2 postings end Tuesday, November 10 at 6:00 AM ET

Assignments

- Assignment 2 due Tuesday, November 10 at 6:00 AM ET

Self-Assessments:

- Practice Quiz 2

Live Classrooms:

- Wednesday, November 4 from 7:00 PM to 9:00 PM ET
- Live Office: to be determined

Module 3 Study Guide and Deliverables (November 10 – November 16)

Readings:

Module 3 Online Lecture

Eloquent JavaScript, Haverbeke

- This optional text covers supplementary and more advanced materials related to this week's topics.

Discussions:

- Discussion 3 postings end Tuesday, November 17 at 6:00 AM ET

Assignments:

- Assignment 3 due Tuesday, November 17 at 6:00 AM ET
- Optional: Mid-Term Review due Tuesday, November 17 at 6:00 AM ET

Self-Assessments:

- Practice Quiz 3

Live Classrooms:

- Friday, November 13 from 7:00 PM to 9:00 PM ET
- Live Office: to be determined

Module 4 Study Guide and Deliverables (November 17 – November 23)

Readings:

Module 4 Online Lecture

Eloquent JavaScript, Haverbeke

- This optional text covers supplementary and more advanced materials related to this week's topics.

Discussions:

- Discussion 4 postings end Tuesday, November 24 at 6:00 AM ET

Assignments:

- Assignment 4 due Tuesday, November 24 at 6:00 AM ET

Self-Assessments:

- Practice Quiz 4

Live Classrooms:

- Wednesday, November 18 from 7:00 PM to 9:00 PM ET
- Live Office: to be determined

Module 5 Study Guide and Deliverables (November 24 – November 30)

Readings:

Module 5 Online Lecture

Eloquent JavaScript, Haverbeke

- This optional text covers supplementary and more advanced materials related to this week's topics.

Discussions:

- Discussion 5 postings end Tuesday, December 1 at 6:00 AM ET

Assignments:

- Assignment 5 due Tuesday, December 1 at 6:00 AM ET

Self-Assessments:

- Practice Quiz 5

Live Classrooms:

- Wednesday, November 25 from 7:00 PM to 9:00 PM ET
- Live Office: to be determined

Module 6 Study Guide and Deliverables (December 1 – December 7)

Readings:

Module 6 Online Lecture

Eloquent JavaScript, Haverbeke

- This optional text covers supplementary and more advanced materials related to this week's topics.

Discussions:

- Discussion 6 postings end Tuesday, December 8 at 6:00 AM ET

Assignments

- Assignment 6 due Tuesday, December 8 at 6:00 AM ET
- Term Project due Tuesday, December 8 at 6:00 AM ET

Assessments:

- Practice Quiz 6

Live Classrooms:

- Wednesday, December 2 from 7:00 PM to 9:00 PM ET
- Live Office: to be determined

Course Evaluation:

Please complete the course evaluation once you receive an email or Blackboard notification indicating the evaluation is open. Your feedback is important to MET, as it helps us make improvements to the program and the course for future students.

Final Exam

The Final Exam is a proctored exam available from **Wednesday, December 9, 2026, at 6:00 AM ET to Saturday, December 12, 2026, at 11:59 PM ET**.

The Computer Science department requires that all final exams be administered using an online proctoring service, which you will access via your course in Blackboard. In order to take the exam, you are required to have a working computer, webcam, speakers, and microphone that meet the proctoring service's system requirements. A detailed list of those requirements can be found in the Proctored Exam Information module located on the course home page. Additional information regarding your proctored exam will be forthcoming from the Assessment Administrator.

Please note that student activity during the final exam is monitored and recorded by the proctoring vendor. Accessing any unauthorized material during the final exam is a major violation of the course policy and can result in serious academic disciplinary actions.

Course Grading Information

The course grade will be based on active class participation and discussions, weekly assignments, a proctored final exam, and a term project. Assignments are expected to be submitted by their respective due dates. Late submissions may carry a penalty.

Grading Policy

All students will be expected to demonstrate competency of the languages and concepts covered in this course.

Grade Structure and Distribution

The final grade for this course will be based on the following:

Deliverable	Weight
Discussions	10%
Assignments	30%
Term Project	30%
Final Exam	30%

Final Course Grade

The final letter grade in the course will correspond approximately with the following numeric grade range:

Grade	Score
A	96-100
A–	91–95.99
B+	86–90.99
B	81–85.99
B–	76–80.99
C+	71–75.99
C	66–70.99
C–	61–65.99
D	56–60.99
F	0–55.99

The percentage ranges above are approximate. Your letter grade is determined by your professor as the best overall measure of how well you have demonstrated that you understand the material, taking into separate consideration your performance with the assignments, term project, discussions and final exam. The final grade *may* be curved at the discretion of the Instructor.

Course Policies

Delays
If, for any reason, you are unable to meet any assignment deadline, contact your Course Facilitator. All times mentioned in the course (unless otherwise specified) are in Eastern Time. All assignments must be completed and must be turned in by their due dates and due times. Extensions may be granted, though only under mitigating circumstances.

Late Work Policy
Each assignment has a strict deadline. However, you are still allowed to submit your assignment within 2 days after the deadline with a penalty; 15% of the credit will be deducted unless you

made previous arrangements with your facilitator and professor. Assignments submitted more than 2 days after the deadline will not be graded.

Discussion Grading Rubric

The discussion grading rubric below will be used to evaluate your discussion contributions.

Criteria	51–60	61–70	71–80	81–90	91–100
Participation	Very limited participation	Participation generally lacks frequency or relevance	Reasonably useful relevant participation during the discussion period	Frequently relevant and consistent participation throughout the discussion period	Continually relevant and consistent participation throughout the discussion period
Community	Mostly indifferent to discussion	Little effort to keep discussions going or provide help	Reasonable effort to respond thoughtfully, provide help, and/or keep discussions going	Often responds thoughtfully in a way that frequently keeps discussions going and provides help	Continually responds thoughtfully in a way that consistently keeps discussions going and provides help
Content	No useful, on-topic, or interesting information, ideas, or analysis	Hardly any useful, on-topic, or interesting information, ideas, or analysis	Reasonably useful, on-topic, and interesting information, ideas, and/or analysis	Frequently useful, on-topic, and interesting information, ideas, and analysis	Exceptionally useful, on-topic, and interesting information, ideas, and analysis
Reflection and Synthesis	No significant effort to clarify, summarize, or synthesize topics raised in discussions	No significant effort to clarify, summarize, or synthesize topics raised in discussions	No significant effort to clarify, summarize, or synthesize topics raised in discussions	Contributes to group's effort to clarify, summarize, or synthesize topics raised in discussions	Leads group's effort to clarify, summarize, or synthesize topics raised in discussions

In addition to the rubric above, please read the Discussion Grading Guidelines below, which will be used in conjunction with the grading rubric above. The following guidelines are a bit more objective and quantifiable to understanding how your discussion efforts will be scored. The intention of sharing these guidelines is to provide some additional transparency to the grading process and to allow you to understand what some of our minimum expectations are regarding weekly discussions.

Discussion Grading Guidelines

1. Initial discussion posts by students should be *at least* one paragraph in length (four to five sentences). Posts smaller than this will not be counted towards your grade. Replies and responses to other students are not subject to this minimum length requirement, but should be *meaningful*, see below.
2. All posts should be *meaningful*, which means:
    a. What you post should be worthwhile, don't just post something to try to meet the requirements.
    b. Posts should be well developed. The content of your post must demonstrate an understanding of the subject.
    c. You should be providing information that is helpful in facilitating discussion. Simple statements such as "Good job!" or "I agree with you" does not contribute to the discussion in a meaningful way.
    d. Give reasons for any opinions that you share.
    e. Posts should be to the point and clearly stated with correct spelling and grammar.
    f. Be sure to include outside resources if applicable.
3. **Answer, respond, and reply**. Students should post at a minimum:
    a. An original, *meaningful* **answer** to the discussion prompt
    b. A *meaningful* **response** to another student's original response
    c. A *meaningful* **reply** to another student's response to their discussion
    d. Doing only this, all on one day: 70%. Score can be lower if there are quality concerns for any of the parts a-f above.
    e. Doing only this, over two or more days: 80%. Score can be lower if quality is low for any of the parts a-f above.
    f. The original answer should be provided before midnight on Friday (EST) of each week, if not, subtract 5% from their score for late participation involvement.
4. To score higher than an 80%, students must exceed the minimum requirements outlined in parts 1-3 above. Factors that can raise a student's discussion score include:
    a. Quality of posts
    b. Number of posts
    c. Frequency of posts
    d. Posts that have resulted in a significant number of responses
    e. Above average effort (size, significant research, etc.)

Academic Conduct Code

Academic Integrity: Plagiarism is the passing off of another's words or ideas as your own, and it is a serious academic offense. Plagiarism and cheating also defeat the purpose of getting an education. Plagiarism and cheating cases will be handled in accordance with the disciplinary procedures described in the College of Arts and Sciences Academic Conduct Code. You are expected to know and abide by the code, which can be read online: Academic Conduct Code.

Penalties range from failing an assignment or course (first offense) to suspension or expulsion from BU. If in doubt, cite your source. If you have any questions about academic integrity, please ask your instructor.

Incidents of academic misconduct will be reported to the Academic Conduct Committee (ACC). The ACC may suspend/expel students found guilty of misconduct.

Important Message on Final Exams

Dear Boston University Computer Science Online Student,

As part of our ongoing efforts to maintain the high academic standard of all Boston University programs, including our online MSCIS degree program, the Computer Science Department at Boston University's Metropolitan College requires that each of the online courses includes a proctored final examination.

By requiring proctored finals, we are ensuring the excellence and fairness of our program. The final exam is administered online.

Specific information regarding final-exam scheduling will be provided approximately two weeks into the course. This early notification is being given so that you will have enough time to plan for where you will take the final exam.

I know that you recognize the value of your Boston University degree and that you will support the efforts of the University to maintain the highest standards in our online degree program.

Thank you very much for your support with this important issue.

Regards,

Professor Lou Chitkushev, Ph.D.

Associate Dean for Academic Affairs

Boston University Metropolitan College

Who's Who: Roles and Responsibilities

You will meet many BU people in this course and program. Some of these people you will meet online, and some you will communicate with by email and telephone. There are many people behind the scenes, too, including instructional designers, faculty who assist with course preparation, and video and animation specialists.

People in Your Online Course in Addition to Your Fellow Students

Your Facilitator. Our classes are divided into small groups, and each group has its own facilitator. We carefully select and train our facilitators for their expertise in the subject matter and their excellence in teaching. Your facilitator is responsible for stimulating discussions in pedagogically useful areas, for answering your questions, and for grading homework assignments, discussions, term projects, and any manually graded quiz or final-exam questions. If you ask your facilitator a question by email, you should get a response within 24 hours, and usually faster. If you need a question answered urgently, post your question to one of the urgent help topics, where everyone can see it and answer it.

Your Professor. The professor for your course has primary responsibility for the course. If you have any questions that your facilitator doesn't answer quickly and to your satisfaction, then send your professor an email in the course, with a cc to your facilitator so that your facilitator is aware of your question and your professor's response.

Your Faculty and Student Support Administrator, Rachel Regis. Rachel is here to ensure you have a positive online experience. You will receive emails and announcements from Rachel throughout the semester. Rachel represents Boston University's university services and works for BU Virtual. She prepares students for milestones such as course launch, final exams, and course evaluations. She is a resource to both students and faculty. For example, Rachel can direct your university questions and concerns to the appropriate party. She also handles general questions regarding Online Campus functionality for students, faculty, and facilitators, but she does not provide tech support. She is enrolled in all classes and can be contacted within the course through Online Campus email as it is running. You can also contact her by external email at bleug@bu.edu.

People Not in Your Online Course

Although you will not normally encounter the following people in your online course, they are central to the program. You may receive emails or phone calls from them, and you should feel free to contact them.

Your Computer Science Department Online Program Coordinator. The online program coordinator administers the academic aspects of the program, including admissions and registration. You can ask questions about the program, registration, course offerings, graduation, or any other program-related topic. The online program coordinator can be reached at metcsol@bu.edu or (617) 353-2566.

Andrew Gorlin, Academic Advisor. Reviews requests for transfer credits and waivers. Advises students on which courses to take to meet their career goals. You can reach Andrew at asgorlin@bu.edu, or (617)-353-2566.

Professor Guanglan Zhang, Computer Science Department Chairman. You can reach Professor Zhang at guanglan@bu.edu or at 617-358-2566.

Professor Lou T. Chitkushev, Associate Dean for Academic Affairs, Metropolitan College. Dr. Chitkushev is responsible for the academic programs of Metropolitan College. Contact Professor Chitkushev with any issues that you feel have not been addressed adequately. The customary issue-escalation sequence after your course facilitator and course faculty is Professor Temkin, and then Professor Chitkushev.

Professor Tanya Zlateva, Metropolitan College Dean. Dr. Zlateva is responsible for the quality of all the academic programs at Boston University Metropolitan College.

Disability and Access Services

In accordance with university policy, every effort will be made to accommodate students with respect to speech, hearing, vision, or other disabilities. Any student who may need an accommodation for a documented disability should contact Disability and Access Services at 617-353-3658 or at access@bu.edu for review and approval of accommodation requests.

Once a student receives their accommodation letter, they must send it to their instructor and/or facilitator each semester. They must also send a copy to their Faculty & Student Support Administrator, who may need to update the course settings to ensure accommodation is in place. Accommodation cannot be implemented if the students do not send their letters.

Policy for the Use of Generative AI

Students should learn how to use AI text generators and other AI-based assistive resources (collectively, AI tools) to enhance rather than damage their developing abilities as writers, coders, communicators, and thinkers.

When using Generative AI in coursework, students shall:

1. Give credit to AI tools whenever used, even if only to generate ideas rather than usable text or illustrations.

2. When using AI tools on assignments, add an appendix showing (a) the entire exchange, highlighting the most relevant sections; (b) a description of precisely which AI tools were

used (e.g. ChatGPT private subscription version or DALL-E free version), (c) an explanation of how the AI tools were used (e.g. to generate ideas, turns of phrase, elements of text, long stretches of text, lines of argument, pieces of evidence, maps

of conceptual territory, illustrations of key concepts, etc.); (d) an account of why AI tools were used (e.g. to save time, to surmount writer's block, to stimulate thinking, to handle mounting stress, to clarify prose, to translate text, to experiment for fun, etc.).

3. Not use AI tools during in-class examinations, or assignments, unless explicitly permitted and instructed.

4. Employ AI detection tools and originality checks prior to submission, ensuring that their submitted work is not mistakenly flagged.

5. Use AI tools wisely and intelligently, aiming to deepen understanding of subject matter and to support learning. For more details, please see the Generative AI Assistance (GAIA) policy.