

CSC 337 Web Programming

Summer 2023

Description of Course

Introduction to the techniques and technologies for developing dynamic web sites. Topics include a web server, PHP as the server-side scripting language, the MySQL database, JavaScript and AJAX for enriching web services, and page layout with HTML and CSS. Security concerns will be considered with details for prevention of such vulnerabilities in web applications. This course includes a team project to deploy a dynamic website.

Course Prerequisites

A college level programming course that teaches programming in a high-level programming language that includes data types, strings, selection, loops, methods (functions), argument/parameter association, lists (arrays), and lists of lists (2-D arrays). CSC 337 are CSC 110 or CSC 127A or CSC 227 or ISTA 130 or ECE 175. Experience has shown students do better in CSC 337 after taking two or three courses such as CSC 110 and 120 for CS majors, or ECE 175 and 275 for Engineering majors, or ISTA 130 and 131 for ISTA majors. You will be learning and using seven languages: HTML, CSS, JavaScript, PHP, REGEX, JSON, and SQL.

Instructor and Contact Information

Instructor: Shreya Nupur Shakya (she/her)
Home page: <https://www.cs.arizona.edu/person/shreya-nupur-shakya>
Email address: snshakya@arizona.edu
Office hours: Mondays and Tuesdays, 11:00 am to 12:00 pm

Teaching assistant: Honor Lee Jang (she/ her)
Email address: honorljang@arizona.edu
Office hours: TBD

Course Format and Teaching Methods

This course will be taught asynchronously in online modality. However, you are required to watch a week's lecture within the scheduled week to be able to work on the assignments. The midterms and final exam will also be online but will be on scheduled dates.

Obtaining Help

- **Academic advising:** If you have questions about your academic progress this semester, or your chosen degree program, consider contacting your department's academic advisor(s). Your academic advisor and the [Advising Resource Center](https://www.cs.arizona.edu/undergraduate/advising) can guide you toward university resources to help you succeed. **Computer Science major students** are encouraged to visit <https://www.cs.arizona.edu/undergraduate/advising> for advisor contact information.
- **CS Help Desk:** The Computer Science IT team can help students with department technology issues including logging into/resetting your Lectura account, printing in the 930 lab, etc. You can submit a ticket for help by visiting the [Computer Science Lab Helpdesk](#) (note, requires UA login).
- **Life challenges:** If you are experiencing unexpected barriers to your success in your courses, please note the Dean of Students Office is a central support resource for all students

and may be helpful. The [Dean of Students Office](#) can be reached at 520-621-2057 or DOS-deanofstudents@email.arizona.edu.

- **Physical and mental-health challenges:** If you are facing physical or mental health challenges this semester, please note that Campus Health provides quality medical and mental health care. For medical appointments, call (520-621-9202. For After Hours care, call (520) 570-7898. For the Counseling & Psych Services (CAPS) 24/7 hotline, call (520) 621-3334.
- **UA Ombuds:** The [UA Ombuds Office](https://ombuds.arizona.edu/) (<https://ombuds.arizona.edu/>) helps with a wide variety of issues, concerns, questions, conflicts, and challenges. The primary mission of the Ombuds Program is to assist individuals in resolving conflict, facilitating communication, and assisting the University by surfacing issues and providing feedback on emerging or systemic concerns. Communications with the Ombuds Committee are informal and off-the-record. The Ombuds Committee is governed by the following standards: (1) Confidentiality; (2) Impartiality; (3) Informality; and (4) Independence.

Class Recordings

For lecture recordings, which are used at the discretion of the instructor, students must access content in D2L only. Students may not modify content or re-use content for any purpose other than personal educational reasons. All recordings are subject to government and university regulations. Therefore, students accessing unauthorized recordings or using them in a manner inconsistent with [UArizona values](#) and educational policies ([Code of Academic Integrity](#) and the [Student Code of Conduct](#)) are also subject to civil action.

Course Objectives

CSC 337 presents the concepts and programming languages needed to build dynamic websites with you as a full-stack web developer. This includes the client side: the browser using HTML, CSS, forms, client-side validation with REGEX, along with JavaScript for event-driven programming with high order functions, changing the DOM tree, and making asynchronous calls using high order functions (AJAX). Topics also include experience with the server-side using PHP, file processing on the server, a Database management system (a fork of MySQL named MariaDB), JSON, and PHP data objects (PDO) as an API that allows you to create, read, update, and destroy (CRUD) databases.

Expected Learning Outcomes

- Use HTML5 and CSS to style and layout web pages
- Use the JavaScript programming language on the client side (the browser) to manipulate the Document Object Model (DOM) tree, the tree data structure that models all web pages, to present the modern way to show web pages.
- Use the PHP programming language to perform server-side programming to access data in files and databases on the server to be sent back to the browser for display.
- Use event-driven programming to allow users of your web site to do things like select options, enter data in a form, and get desired information.
- Employ client-side validation to prevent incorrect input from users using your website.
- Use AJAX to provide asynchronous calls to the server that result in smoother web page updates and a better user experience in the browser.

- Design a database to represent real world entities and a structured query language (SQL) to create, read, and update databases.
- Understand some of the vulnerabilities that Web programming allows, how they actually work, and know how to prevent some dangerous security risks that can leak sensitive data to hackers.
- Build a full stack dynamic website like what you use all the time that includes client-side processing to present the view to the user and ways to do what the user desires, server-side processing with a database, and a controller to coordinate the data exchange between the client and server

Absence and Class Participation Policy

The UA's policy concerning Class Attendance, Participation, and Administrative Drops is available at <https://catalog.arizona.edu/policy/class-attendance-and-participation>

The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable: <http://policy.arizona.edu/human-resources/religious-accommodation-policy>.

Absences pre-approved by the UA Dean of Students (or dean's designee) will be honored. See <https://deanofstudents.arizona.edu/policies/attendance-policies-and-practices>

Participating in the course and attending lectures and other course events are vital to the learning process. As such, attendance is required at all lectures. Absences may affect a student's final course grade. If you anticipate being absent, are unexpectedly absent, or are unable to participate in class online activities, please contact me as soon as possible. To request a disability-related accommodation to this attendance policy, please contact the Disability Resource Center at (520) 621-3268 or drc-info@email.arizona.edu. If you are experiencing unexpected barriers to your success in your courses, the Dean of Students Office is a central support resource for all students and may be helpful. The Dean of Students Office is located in the Robert L. Nugent Building, room 100, or call 520-621-7057.

Illnesses and Emergencies

- If you feel sick, or may have been in contact with someone who is infectious, stay home. Except for seeking medical care, avoid contact with others and do not travel.
- Notify your instructor(s) if you will be missing up to one week of course meetings and/or assignment deadlines.
- If you must miss the equivalent of more than one week of class and have an emergency, the Dean of Students is the proper office to contact (DOS-deanofstudents@email.arizona.edu). The Dean of Students considers the following as qualified emergencies: the birth of a child, mental health hospitalization, domestic violence matter, house fire, hospitalization for physical health (concussion/emergency surgery/coma/COVID-19 complications/ICU), death of immediate family, Title IX matters, etc.
- Please understand that there is no guarantee of an extension when you are absent from class and/or miss a deadline.

Statement on compliance with COVID-19 mitigation guidelines:

As we enter the semester, our health and safety remain the university's highest priority. To protect the health of everyone in this class, students are required to follow the university guidelines on

COVID-19 mitigation. Please visit www.covid19.arizona.edu.

Makeup Policy for Students Who Register Late

If you register after the first class meeting, you may not make up missed assignments. This means you may receive zeros for any assignment not submitted before the posted deadline.

Course Communications

Official online communications will be conducted through D2L, our course web page, Piazza, email, and Panopto recordings of the lecture on D2L. You are required to read all email from us, and read all Piazza posts. You will be using D2L to turn in Assignments.

Required Texts or Readings

There is no required textbook to buy. You will be required to read from online sources such as W3Schools.

Required or Special Materials

You must have a laptop or desktop computer to take this course. iPads and Chromebooks are not sufficient. All required software will be free to install on Mac or Windows. If you don't have a computer, contact advising@cs.arizona.edu

Assignments and Examinations: Schedule/Due Dates

There will be two 75-minute tests during the semester (dates given below). Students with DRC accommodations will receive extra time. Both tests will be given as a D2L quiz that must be completed on the scheduled dates.

There will be at least one and at most two assignment deadlines at 11:59 pm every week that range from 10 to 80 points.

Final Examination

The final exam will be on Wednesday, August 9, 2023.

Link to the Final Exam Regulations and Final Exam Schedule: <https://registrar.arizona.edu/faculty-staff-resources/room-class-scheduling/schedule-classes/final-exams>

Grading Scale and Policies

University policy regarding grades and grading systems is available at <http://catalog.arizona.edu/policy/grades-and-grading-system>

A $\geq 90\%$

B 80.0 to 89.9

C 70.0 to 79.9

D 60.0 to 69.9

E < 60.0

50% Assignments

20% Test 1 (June 28, 2023, Wednesday)

20% Test 2 (July 19, 2023, Wednesday)

05% Final Exam (August 09, 2023, Wednesday)

05% Weekly questions (To be submitted at the end every week; 1-3 sentences maximum about what you learnt, what you liked, any recommendations, any questions)

Department of Computer Science Grading Policy:

1. Assignments will be graded within 3 working days of the deadline.
2. Both tests will be taken as a 75-minute D2L Quiz. They will be graded within one week. The final exam will be a two-hour D2L Quiz and will be graded within two working days.
3. Grading delays beyond promised return-by dates will be announced as soon as possible with an explanation for the delay.

Incomplete (I) or Withdrawal (W):

Requests for incomplete (I) or withdrawal (W) must be made in accordance with University policies, which are available at <http://catalog.arizona.edu/policy/grades-and-grading-system#incomplete> and <http://catalog.arizona.edu/policy/grades-and-grading-system#Withdrawal> respectively.

Scheduled Topics/Activities

The following weeks are estimated for the following topics and may change according to the pace of the class. The Pdfs will be available under the "Content" section on D2L.

WEEK	TOPIC	PDFs	Assignments
1	Syllabus Course introduction Introduction to HTML, CSS	-Installing Xampp (MacOS/Windows) -Programming Paradigms -HTML -CSS	-HTML and CSS -Rancid Tomatoes (06/11/2023)
2	JavaScript DOM	-JavaScript -DOM	JS Functions (06/18/2023)
3	Event-Driven Programming	- Event-Driven Programming	JS Events (06/25/2023)
4	HTML Forms Form validation MIDTERM 1	-HTML Forms -Form validation	Purchase Receipt Validation (07/02/2023)
5	Regular Expressions (REGEX) PHP	-PHP	PHP functions Rancid Server Start (07/09/2023)
6	Server side processing with PHP AJAX JSON	-AJAX -JSON	Purchase Receipt Server

	MVC	-MVC	Best Reads (07/16/2023)
7	Relational Databases SQL PHP Data Objects (PDO) MIDTERM 2	-SQL -PDO	-Database Adapter -Actors or Movies 07/23/2023)
8	Higher order functions Database Design and Joins Cookies and sessions	-Higher Order Functions -DB Designs and Joins -Persistence Cookies and Sessions	Quotes 1 Quotes 2 (07/30/2023)
9	Web Security Vulnerabilities		Quotes 3 (08/06/2023)
10	Salt/hash, htmlspecialchars PDO's bound parameters FINAL EXAM	Web Security	---

Department of Computer Science Code of Conduct

The Department of Computer Science is committed to providing and maintaining a supportive educational environment for all. We strive to be welcoming and inclusive, respect privacy and confidentiality, behave respectfully and courteously, and practice intellectual honesty. Disruptive behaviors (such as physical or emotional harassment, dismissive attitudes, and abuse of department resources) will not be tolerated. The complete Code of Conduct is available on our department web site. We expect that you will adhere to this code, as well as the UA Student Code of Conduct, while you are a member of this class.

Classroom Behavior Policy

To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (e.g., texting, chatting, reading a newspaper, making phone calls, web surfing, etc.).

Threatening Behavior Policy

The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to oneself. See <http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students>.

Notification of Objectionable Materials

This course will contain material of a mature nature, which may include explicit language, depictions of nudity, sexual situations, and/or violence. The instructor will provide advance notice when such materials will be used. Students are not automatically excused from interacting with such materials, but they are encouraged to speak with the instructor to voice concerns and to provide feedback.

Accessibility and Accommodations

At the University of Arizona, we strive to make learning experiences as accessible as possible. If you anticipate or experience barriers based on disability or pregnancy, please contact the

Disability Resource Center (520-621-3268, <https://drc.arizona.edu/>) to establish reasonable accommodations.

Code of Academic Integrity

Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See

<https://deanofstudents.arizona.edu/student-rights-responsibilities/academic-integrity>.

Uploading material from this course to a website other than D2L (or the class piazza) is strictly prohibited and will be considered a violation of the course policy and a violation of the code of academic integrity. Obtaining material associated with this course (or previous offerings of this course) on a site other than D2L (or the class piazza), such as Chegg, Course Hero, etc. or accessing these sites during a quiz or exam is a violation of the code of academic integrity. Any student determined to have uploaded or accessed material in an unauthorized manner will be reported to the Dean of Students for a Code of Academic Integrity violation, with a recommended sanction of a failing grade in the course.

The University Libraries have some excellent tips for avoiding plagiarism, available at <http://new.library.arizona.edu/research/citing/plagiarism>.

Selling class notes and/or other course materials to other students or to a third party for resale is not permitted without the instructor's express written consent. Violations to this and other course rules are subject to the Code of Academic Integrity and may result in course sanctions.

Additionally, students who use D2L or UA e-mail to sell or buy these copyrighted materials are subject to Code of Conduct Violations for misuse of student e-mail addresses. This conduct may also constitute copyright infringement.

Nondiscrimination and Anti-harassment Policy

The University of Arizona is committed to creating and maintaining an environment free of discrimination. In support of this commitment, the University prohibits discrimination, including harassment and retaliation, based on a protected classification, including race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, or genetic information. For more information, including how to report a concern, please see

<http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

Our classroom is a place where everyone is encouraged to express well-formed opinions and their reasons for those opinions. We also want to create a tolerant and open environment where such opinions can be expressed without resorting to bullying or discrimination of others.

Additional Resources for Students

UA Academic policies and procedures are available at <http://catalog.arizona.edu/policies>

Visit the [UArizona COVID-19](#) page for regular updates.

Campus Health

<http://www.health.arizona.edu/>

Campus Health provides quality medical and mental health care services through virtual and in-person care. Voluntary, free, and convenient [COVID-19 testing](#) is available for students on Main Campus. COVID-19 vaccine is available for all students at [Campus Health](#).

Phone: 520-621-9202

Counseling and Psych Services (CAPS)

<https://health.arizona.edu/counseling-psych-services>

CAPS provides mental health care, including short-term counseling services.

Phone: 520-621-3334

The Dean of Students Office's Student Assistance Program

<https://deanofstudents.arizona.edu/support/student-assistance>

Student Assistance helps students manage crises, life traumas, and other barriers that impede success. The staff addresses the needs of students who experience issues related to social adjustment, academic challenges, psychological health, physical health, victimization, and relationship issues, through a variety of interventions, referrals, and follow up services.

Email: DOS-deanofstudents@email.arizona.edu

Phone: 520-621-7057

Survivor Advocacy Program

<https://survivoradvocacy.arizona.edu/>

The Survivor Advocacy Program provides confidential support and advocacy services to student survivors of sexual and gender-based violence. The Program can also advise students about relevant non-UA resources available within the local community for support.

Email: survivoradvocacy@email.arizona.edu

Phone: 520-621-5767

Campus Pantry

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live and believes this may affect their performance in the course, is urged to contact the Dean of Students for support. In addition, the University of Arizona Campus Pantry is open for students to receive supplemental groceries at no cost. Please see their website at: campuspantry.arizona.edu for open times.

Furthermore, please notify me if you are comfortable in doing so. This will enable me to provide any resources that I may possess.

Pronouns and Preferred Names

This course affirms people of all gender expressions and gender identities. If you prefer to be called a different name than what is on the class roster, please let me know. Feel free to correct instructors on your pronoun. If you have any questions or concerns, please do not hesitate to contact me directly in class or via email (instructor email). If you wish to change your preferred name or pronoun in the UAccess system, please use the following guidelines:

Preferred name: University of Arizona students may choose to identify themselves within the University community using a preferred first name that differs from their official/legal name. A student's preferred name will appear instead of the person's official/legal first name in select University-related systems and documents, provided that the name is not being used for the purpose of misrepresentation. Students are able to update their preferred names in UAccess.

Pronouns: Students may designate pronouns they use to identify themselves. Instructors and staff are encouraged to use pronouns for people that they use for themselves as a sign of respect and inclusion. Students are able to update and edit their pronouns in UAccess.

More information on updating your preferred name and pronouns is available on the Office of the Registrar site at <https://www.registrar.arizona.edu/>.

Safety on Campus and in the Classroom

This is a fully online course. If you are in-person on campus at all this summer, you may want to familiarize yourself with the building evacuation plans and consider watching the "[Active Shooter](https://ua-saem-aiss.narrasys.com/#/story/university-of-arizona-cert/active-shooter)" video (<https://ua-saem-aiss.narrasys.com/#/story/university-of-arizona-cert/active-shooter>)

Confidentiality of Student Records

<http://www.registrar.arizona.edu/personal-information/family-educational-rights-and-privacy-act-1974-ferpa?topic=ferpa>

Land Acknowledgement Statement

We respectfully acknowledge the University of Arizona is on the land and territories of Indigenous peoples. Today, Arizona is home to 22 federally recognized tribes, with Tucson being home to the O'odham and the Yaqui. Committed to diversity and inclusion, the University strives to build sustainable relationships with sovereign Native Nations and Indigenous communities through education offerings, partnerships, and community service.

Subject to Change Statement

Information contained in the course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor.