CPSC 332
Web Development
Syllabus

Last Updated 29 August 2022

(Note: syllabus subject to change, your instructor will make an announcement if changes occur – all times are in PST/PDT)

Basic Facts

Instructor: Daniel Olivares, PhD
olivares@gonzaga.edu
Phone: 509-313-5753
Office: BCISE 011
Office Hours:
Monday, Wednesday, Friday
8:50AM-9:20AM, 10:50AM-12:00PM and ***by appointment***

Meetings: MWF 8:00AM-8:50AM
Location: BCISE 003

Online: Course website hosted on Canvas: https://canvas.instructure.com/
Important Note: Use this URL, not the first URL when you Google "Canvas" as it may be incorrect!

Required Hardware/ Software:
- A laptop adhering to GU SEAS requirements. Click here to learn more about the requirements.
- Recommended: VirtualBox, which is available for Windows, MacOS, and Linux. You will be provided with a SEAS VirtualBox system image that will be used for many tutorials and examples for this course and will allow you to have a development environment that matches that being used for instruction. You may use alternate software but note that I may not be able to assist you with any technical difficulties you may run into outside of my experience.

You are expected to bring your laptop to class regularly to complete and participate in in-class activities and assignments.

Textbooks: **Required**: Introduction to Web Development (a zyBooks book ISBN: 979-8-203-03945-3). This is an online interactive textbook. Access codes can be purchased at the ZagShop bookstore or follow these instructions to gain access to the book:

1. Sign in or create an account at learn.zybooks.com
2. Enter zyBook code: **GONZAGACPSC332OlivaresFall2022**
3. Subscribe

A subscription is $**58** and will last until **Jan 04, 2023**. Students will be able to subscribe until **Dec 07, 2022**.

Additional Notes:

- *You are required to register with your official @zagmail.gonzaga.edu student email.*
- *Though access to the digital book is not indefinite, you may print (or download as PDF) the zyBooks contents during subscription time to maintain an offline,* ***non-interactive****, copy of the book.*
- *If you have any difficulty with or questions about zyBooks usage, support is available at the zyBooks help desk:* https://zybooks.zendesk.com/hc/en-us/sections/360001556914-Students

Course Information

- Techniques of web page development. An introduction to web programming. Emphasis is on web programming basics using well-established web structure and style.
- Credits: 3.00
- College: School of Engineering/Applied Science (SEAS)
- Department: Computer Science
- Prerequisites: CPSC 122

Course Description

This course covers the basics of web programming and development techniques of web-based software application development. It introduces programming languages and frameworks for web programming with an emphasis on web programming basics using well-established approaches including the basics of full-stack web development. Students will be introduced to the history of the web, IP addresses, domain names, URLs and HTTP. Topics will focus on using the HTML5 standard, which uses HTML, CSS, and JavaScript to create web pages and web applications. The final third of the course will cover more advanced web programming topics and conclude with a final project and presentation.

Learning Objectives

By the end of this course, you should be able to

- Create highly-interactive web pages using HTML, CSS, and JavaScript.
- Understand how HTML, CSS, and JavaScript separate a document structure, presentation, and web page interaction with a user.
- Design and deploy functional and flexible web sites.
- Understand the overview of full stack development and web applications.
- Demonstrate a basic understanding and use of Git version control and the GitHub/GitHub Classroom platforms.
- Present a basic full-stack web project demonstrating course outcomes

Brief list of topics to be covered

- Basics of Git and GitHub
    - Examples drawn from source documentation
- IDEs and Code Editors
    - Overview of current selection of both basic and advanced IDEs/code editors
- HTML

    - Basics and advanced HTML structure, tags, containers, forms, and widgets
- CSS
    - Basics and advanced styling, selectors, properties, and layouts
- JavaScript
    - Brief overview of basic syntax and usage of objects and methods
    - Basics and advanced standalone and in-browser techniques
    - Debugging basics
- JQuery
    - JQuery-specific selectors, events, styles and animation, and DOM manipulation
- Mobile web development
    - Fluid mobile layouts using the viewport and media queries
- Node.js
    - Full-stack Node.js development
    - Use of web application frameworks (Express, PUG, EJS, etc.)
    - Creation of basic RESTful web APIs
- PHP
    - Full-stack PHP development
    - Brief overview of PHP syntax and language elements
- Databases
    - Using MySQL and MongoDB in a web application
- Data Validation and Sanitization in Node.js and PHP
- User Interface, User eXperience, and accessibility design considerations
- User Authentication in Node.js and PHP
- Deploying a web project
    - Deploying to the Heroku platform
    - Deploying to a Linux-based server

Course Activities and Structure

Class Meetings. Class meetings will typically contain a mix of lectures, interactive examples, interactive group activities, and small and large group discussions. You are expected to read the assigned material ***before* class** *(see the course calendar for participation deadlines*), and you are required to bring your laptop to every, as you will use it to engage actively in course activities and work through participation activities.

In addition, in many class meetings, you will engage in **small group activities** in which you (a) work on small design scenarios/problems with your peers for feedback and discussion; or (b) work on small design and problem-solving tasks in teams, and then present your progress to the class for feedback and discussion. These activities will provide opportunities to practice concepts and methods being explored in the class.

Canvas is the online presence for this course. You can access it at https://canvas.instructure.com/. Once you log on to our course site, you can read course announcements, participate in online discussions, send messages to course participants, access course materials, hand in course deliverables, review peers' work, and access your grades. This is where you will also find all private URLS, e.g., Zoom, and Discord invites.

Communication

We will use Canvas to communicate, submit assignments, and view grades. A URL invitation link will be sent to your official @zagmail.gonzaga.edu email to provide course access.

Note: Please use Canvas as the primary communication method for course-related messages. I will monitor email as well but using Canvas is the preferred communication method. This will increase your message visibility and reduce likelihood of emails getting flagged as spam or getting lost in transit. Further, ***any course-related emails should be sent from your official @zagmail.gonzaga.edu student email and should contain the course number "CPSC 332" in the subject line.***

Additionally, Discord (free to use) will be used to augment class communication and digital office hours– ask questions and discuss topics with other students in the class, Graders/TAs, and the instructor. Discord supports voice and text communication as well as screen sharing capabilities (*see Canvas for server invite URL*).

Zoom will also be used to augment course interactions as necessary. **Please log in with your Gonzaga credentials and not separate free Zoom account credentials** (use the SSO log in method with Gonzaga as the domain).

All communication methods are not to be used to share code solutions *(see academic honesty policy).* You can, however, post high level code explanations and/or snippets of pseudocode. I will also post/email important information to you through Canvas announcements. **You are expected to check announcements on Canvas and your GU email regularly.**

Office Hours

You are strongly encouraged to take advantage of office hours **and/or make an appointment** to meet with me if you have questions about the course material. I am more than happy to help you and office hours are a great way to get one-on-one help with the material. You are not "bothering" your instructor if you show up to office hours! Those hours are set aside explicitly for you to use.

As an alternative to face-to-face office hours, I will also make digital office hours via Zoom and/or the class Discord server available upon request in advance.

Course (and Digital) Classroom Etiquette

- Please respect the food and drinks policy in the classroom and use common sense (i.e., don't damage lab equipment!)
- Please be conscious of appropriate behavior and background while communicating via digital modes.

Grading

Your grade for the course will be based on the following items (weights are in parentheses):

Assignment Weights

- Participation (10%)
- ZyBook Activities (10%)
- Individual Assignments (30%)
- Exams (20%)
- Final Project (30%)

Assignment Categories

- **Participation (10%).** Because this course can depend heavily on in-class activities, you are expected to do your best to attend class meetings and to participate actively. I understand that you may need to miss class occasionally for valid reasons. For this reason, your **three lowest class participation scores will be discarded—that is, you will receive three free attendance/participation credits.** Discrepancies in participation need to be brought to my attention within a week of the posted grade.

  Participation activities are credit/no credit and will be scored based on submission effort. I understand that sometimes there are difficulties understanding/completing participation tasks. Submissions that display **minimal/no effort will not receive credit!** Make an honest effort to complete the given tasks for participation credit. For any incomplete participation you must comment on your submission with 1) a description of what you are struggling with, 2) what you tried that didn't work, and 3) which specific resources (e.g., that day's lecture slides, book chapter(s), etc.) you used to attempt to understand/solve the participation activity.

- **ZyBook Activities (10%).** This part of your grade will be for completing assigned challenge and lab activities in the zyBooks textbook. Completing **90%** or greater of the assigned challenge and lab activities for a chapter (by the due date) constitutes full credit for the chapter. Note that zyBook activities will be scored **all or nothing**. **Late completion of zyBook activities will not receive credit.**
  → **You are expected to read through each section of the course zyBook prior to the lecture the topic is covered.** Though not graded, it is highly recommended that you also complete the (optional) participation activities for each topic ***before the*** **class** we talk about it. The intent is for you to have some minimal level of familiarity to better inform question asking and discussion activity during lectures and help you to actively engage in course activities.
  → Please note that some of the zyBook activities can be unexpectedly difficult so do not put off their completion until the last minute! **There will not be extensions or exceptions to the zyBook deadline policy** – 90% or greater of the challenge points for each section must be achieved by the submission deadline to receive credit.
  → There *may* be an opportunity to replace two (2) incomplete zyBook scores towards the end of the semester but do not count on this.
- **Individual Assignments (30%).** Through a series of individual assignments, you will practice the key skills being taught in the course. These will be assigned once per topic and due shortly after covering the topic.

- **Exams (20%).** Two midterm exams, worth 10% each, will cover the topics over the first two thirds of the course from the ZyBook text.

- **Final Project (30%).** Students will be responsible for choosing, completing, and presenting a final project demonstrating the cumulative skills learned throughout the course. The final project grade is split into 3 intermediate web project deliverables (WPD), a final 4th WPD of the completed project and a final presentation video and demonstration.

Grading Scale

The following scale will be used to convert your course percentage into a grade.

A	100-94	C+	77-79.99
A-	90-93.99	C	73-76.99
B+	87-89.99	C-	70-72.99
B	83-86.99	D+	67-69.99
B-	80-82.99	D	60-66.99
		F	<60

Suggestions for Getting the Most out of This Course

- **Attend class.** You can only benefit from this course if you show up! This is especially true of the group activities. I expect you to participate actively in class by asking questions, answering questions, and engaging in the collaborative design and problem-solving activities. Remember, part of your grade is based on attendance and participation (see above).

- **Put in enough time.** My rule of thumb is that students need to put in 3-4 hours of work outside of class for every hour they spend in class. This translates to roughly **6-8 hours per week.** You may need to put in only a fraction of 6 hours during some weeks, while you will find yourself putting in more than 6 hours during other weeks—especially during weeks in which pieces of your final design project are due.

- **Take initiative to get help**. You are strongly urged to make use of the many resources available to you! You can do this in two ways. First, I recommend that you find students in the course with whom to meet and discuss course material. Second, take the initiative to contact the instructor or other students if you begin to struggle. Do so sooner rather than later to minimize unproductive time spent working on assignments.

- **Have reasonable expectations**. Learning does not come "for free"; it is not simply a matter of "being taught." You'll get the most out of this course if you take an active role in your own learning and try to have fun doing so.

Schedule

See the detailed schedule posted on Canvas.

Policies

Please familiarize yourself with the following course policies. By following them, you will get the most out of this course, and you will not encounter any unwelcome surprises down the road.

- **Add a profile picture to Canvas**. Uploading a recent picture of yourself to Canvas will help me, the TA, and other students in the class to associate your name with your face. I would greatly appreciate it if you would do this, as it will help me to learn your name more quickly.

- **Corresponding with the instructor via e-mail**. Please e-mail me only through Canvas; do not e-mail me directly, except in an emergency. If you think your question is of general interest to the class, consider posting it to the course activity feed in Canvas. In general, you can expect an e-mail response from me quickly, and certainly within **24 hours** of sending it.

- **Accessing course materials**. Canvas is the online presence for this course. **Log in regularly (every day)** to view course announcements, view the course calendar and schedule, participate in the course feed, access course materials, access your grades, and submit assignments.

- **Checking your grades**. To view your current grades, click on the Grades tab in Canvas. My goal is to have work graded within one week of the final deadline, but this may not always be possible. Please check your grades regularly to ensure that your grades have been entered properly, and please let your instructor or the TA know as soon as possible if you detect an error.

- **Challenging a grade**. If you believe that I have made a mistake in grading an assignment, you have ***one week*** **(from the time your grade is first posted to the gradebook)** to discuss the matter. Such discussions should take place through Canvas—never in class (see point above). Please discuss grading issues as soon as possible. Students have often attempted to bargain for points well after their grades have been posted—often near the end of the semester when they have realized that they needed more points to obtain a certain grade. Please do not attempt to do this!

- **Late policy for assignments**. **Deadline reminders are a courtesy, not a requirement. You are responsible to follow the course calendar and be aware of provided due dates!** Course assignments are due by the stated due dates and times. Please see each assignment prompt for that assignment's late submission policy. **Note that some assignments may be time sensitive and will <u>not</u> allow for late submissions.** In cases of illness and extenuating personal circumstances, you may request via email that an exception be granted to this policy, but your request must be issued in a timely manner (preferably in advance of the due date), and there is no guarantee that it will be granted.

Resources and Success for Well-being.

Please take care of yourself and your fellow zags! Be aware of the student support resources that the University provides for you. Additional resources for student support are available at https://www.gonzaga.edu/academics/Diversity/CampusClimate/campus-and-local-resources.asp

- **Center for Cura Personalis.** The Center for Cura Personalis serves students in many ways including through proactive outreach and educational programs about healthy choices and interventions for students who may be struggling.
- **Health and Counseling Services.** Health & Counseling Services functions as your private physician's office and counseling center. Health & Counseling Services is a confidential resource. To schedule an appointment, please call 509-313-4052.
- **University Ministry.** University Ministry's mission is to support members of the Gonzaga community in their spiritual growth and development, empowering them to live out God's love in the world. Contact: University Ministry, Hemmingson Center 104, x4242 or umin@gonzaga.edu
- **Campus Security and Public Safety.** At Gonzaga we believe that the security of our campus is a responsibility shared by all members of the community. For more information, visit the Campus Security and Public Safety site.

Gonzaga University-Wide Policies

University and Academic Policy Statements	Associated Links
Diversity, Equity and Inclusion	Visit Equity, Diversity & Inclusion at Gonzaga Page Bias Incident Assessment and Support (BIAS) Team
Harassment and Discrimination Policy	Harassment & Discrimination Policy Title IX I myGU (my.gonzaga.edu)
Academic Integrity Policy	Visit Academic Integrity Policy Resources Page
Students With Disabilities/Medical Conditions and Accessible Documents (EITA)	Disability Access Office EITA Office
Religious Accommodations for Students	Visit Academic Policies and Procedures Page
FERPA and Privacy	FERPA
Class Attendance Policy	Visit Academic Policies and Procedures Page
Class Recording Policy (audio, video, and photos)	Visit Academic Policies and Procedures Page GU Student Code of Conduct
Course Evaluations	Accessing and Timing of Course Evaluations