CodeHS

Texas Web Communications Course Syllabus

Course Overview and Goals

This semester-long course for high school freshmen is an exploratory course in web communications. It explores and delves into applications encompassing: digital citizenship, information literacy, creative credit and copyright, online and in-person collaboration, designing and developing accessible websites as an avenue to personal creativity, and understanding structural aspects of computing (e.g., hardware, servers, devices, file organization).

Learning Environment: The course utilizes a blended classroom approach. The content is a mix of web-based and physical activities. Students will write and run HTML and CSS code in the browser, create websites and digital presentations, and engage in in-person collaborative exercises with classmates. Teachers utilize tools and resources provided by CodeHS to leverage time in the classroom and give focused 1-on-1 attention to students.

Programming Environment: Students write and run programs in the browser using the CodeHS online editor. Students will create web pages using HTML and CSS. These webpages will be hosted on the CodeHS website and third-party sites, as needed, so that they can keep a running portfolio of their creative projects, and easily share their programs with the world.

Quizzes: Each lesson includes at least one formative short multiple choice quiz. At the end of each unit, students take a summative multiple choice unit quiz that assesses their knowledge of the concepts covered in the unit.

Prerequisites: The Texas Web Communications course is designed for complete beginners with no previous background in computer science. The course is highly visual, dynamic, and interactive, making it engaging for those new to computer science.

More information: Browse the content of this course at https://codehs.com/course/9565

Course Breakdown

Unit 1: Digital Citizenship and Cyber Hygiene (2 -3 weeks)
Browse the full content of this unit at: https://codehs.com/library/course/9565/module/14289

Objectives / Topics Covered	- Digital Footprint and Reputation - Cyberbullying - Internet Safety

	● Privacy and Security ● Information Literacy ● Creative Credit and Copyright

Example Assignments / Labs	● Digital Footprint and Reputation
	  ○ What is a digital footprint?
	  ○ What is your digital footprint and reputation?
	  ○ What does it mean that the internet is public and permanent?
	  ○ Who looks at your digital footprint and reputation?
	  ○ What are some recommended social media guidelines?
	  ○ How can you maintain your digital footprint?
	  ○ What does your digital footprint say about you?
	  ○ Example activities:
	    ■ What is your digital footprint?
	    ■ Are you going to make any changes in what you post on social media?
	● Cyberbullying
	  ○ What is cyberbullying?
	  ○ What are the impacts of cyberbullying?
	  ○ Are there cyberbullying roles?
	  ○ What do you do if you are being bullied?
	  ○ What do you do if you see bullying?
	  ○ How can you be an upstander?
	  ○ Example activities:
	    ■ Explore cyberbullying scenarios: What would you do?
	● Internet Safety
	  ○ What are some ways to stay safe online?
	  ○ What are some online safety guidelines?
	  ○ Example activities:
	    ■ Explore Internet safety scenarios: What would you do?
	● Privacy and Security
	  ○ What are data privacy and security?
	  ○ How can you keep personal data secure and private?
	  ○ What can happen if you data is stolen and what can you do about it?
	  ○ Example activities:
	    ■ Test out various passwords on a site
	    ■ Explore Google's privacy policy: What do they know about you?
	● Information Literacy
	  ○ Example activities:
	    ■ How to do effective internet searches
	    ■ Evaluate the credibility of a course
	● Creative Credit and Copyright

	○ Example activities
	  ■ Citing correctly
	  ■ Finding usable images
	  ■ What is the value of copyright?

PBL Benchmark 1: Create a Blog Post	**Required Research Tasks:** Students are asked to explore and evaluate a variety of online resources on a communicable disease related topic of their choosing. **Graded Assignment:** Students will create an informational blog post (at least 600 words, but no more than 1200 words) with headings and appropriate citations. **Suggested Live Session Prompts:** How do you evaluate a resource for accuracy? Reliability? Currency? Authority? How do you write a blog post with appropriate headings? What topic related to communicable diseases is the most interesting to you? What are some good ways to proofread your work for grammar, spelling, and citations? What are some strategies for peer-editing other people's work?

Unit 2: The Internet (2-3 weeks)

Browse the full content of this unit at https://codehs.com/library/course/9565/module/14291

Objectives / Topics Covered	● Structure of the internet ● How network data is transmitted ● Hardware involved in the transmission of data ● How the internet has impacted everyday life
Example Assignments / Labs	● Structure of the internet 　○ Explore the differences between IPv4 and IPv6. Why are we running out of addresses? 　○ Explore the different levels of the internet. 　○ Example Activity 　　■ Trace a website request from the server, through the network, and to your computer ● How data is transmitted 　○ How are internet packets able to find their way to your computer? 　○ Explain in your own words how a request from your computer travels through the various levels of servers to reach and return the correct webpage and resources? 　○ Example Activity: 　　■ As a class, create a protocol that will allow one classmate to send another classmate a note, without the need for talking to each other. ● Hardware involved 　○ Explore the role of routers 　○ Why are protocols so important?

	○ Explore how data is able to be transmitted across the ocean by using underwater cables
PBL Benchmark 2: Crowdsource an Editorial (Persuasive) Blog Post	**Required Research Tasks:** Students are asked to research aspects of the debatable statement: A government can use any means necessary to use personal data to protect its citizens. As an example, mouth swabs at TSA checkpoints in airports could be standard protocol for minimizing the spread of communicable diseases. **Graded Assignment:** Students will use the arguments that they discover in their research to debate the statement and then crowdsource editorial blog posts (at least 600 words, but no more than 1200 words) around a point of view of their choosing with headings and appropriate citations. **Suggested Live Session Prompts:** What is the difference between an informational vs. and editorial blog post? Do editorial blog posts need to contain facts only? What makes an editorial blog post persuasive? How can crowdsourcing work effectively? What are some good strategies for crowdsourcing an artifact?

Unit 3: Web Design (5-6 weeks)
Browse the full content of this unit at https://codehs.com/library/course/9565/module/14293

Objectives / Topics Covered	● Creating webpages using HTML (Links, Images, Lists, Tables, Inline styling) ● Styling webpages with CSS (Creating CSS rules, CSS classes, CSS IDs) ● Creating multi-page sites ● How webpages are requested and delivered ● Intellectual property and how to protect it ● Optimizing Web Information

Example Assignments / Labs	● Links
	  ○ Learn how to link different pages together
	  ○ Example Exercise: Create a webpage that provides links to your favorite books
	● Images
	  ○ Learn how to add and format images
	  ○ Example Exercise: Create a collage of images
	● Tables
	  ○ Learn how to create and style tables
	  ○ Example Exercise: Create a table describing your favorite music artists and songs
	● Styling with CSS
	  ○ Use CSS to add background colors, font colors, font styles, borders, and position elements on the page
	  ○ Example Exercise: Create CSS classes and IDs to apply formatting to a BINGO board

	○ Example Exercise: Create CSS classes to style a music library web page
	○ Example Exercise: Create CSS Rules to put a Karel puzzle together
	● Viewing websites
	  ○ How are web pages served to your computer?
	  ○ Where do web pages live?
	● Intellectual property and how to protect it
	  ○ Example Exercise: Explore all 4 types (patents, trademarks, copyright, trade secrets) of IP with examples
	  ○ Protect IP with firewalls and HTTPS
	● Optimizing web information
	  ○ Example exercise:
	    ■ Practice file naming conventions
	    ■ Use Yoast analyzer to analyze web content

PBL Benchmark 3: Interview an Expert via a Podcast	**Required Research Tasks**: Students will research to find local and/or national experts (doctors, public health nonprofits, etc.) for communicable disease that they are particularly interested in. **Graded Assignment:** Students will develop questions around their topic of choice, reach out to a potential expert of their choosing for an interview and record and edit the interview into a short podcast audio clip roughly 3-5 minutes in length. **Suggested Live Session Prompts:** What makes an individual an expert? What are some strategies for locating experts? What are some guidelines for making solid interview questions?

Unit 4: What is Computing? (3-4 weeks)
Browse the full content of this unit at https://codehs.com/library/course/9565/module/14295

Objectives / Topics Covered	● History of computers ● What is a computer? ● What is software? ● What is hardware? ● Internet Hardware and Sending Information ● Clients and Servers ● Personal Servers vs, Web Server Providers ● Future of computing

Example Assignments / Labs	● History
	  ○ Find out when the first computers were created
	  ○ Research famous computer innovators
	  ○ What roles do computers play in your life?
	  ○ Example Activity:
	    ■ Summarize an era of advances in computers
	● What is a computer?

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○ What parts do modern computers have?
○ What are input devices?
○ What are output devices?
○ Example Activity:
  ■ Draw a computer and label all of its parts, including the input devices and output devices
● Software/Hardware
  ○ What's the difference?
  ○ What hardware components make up a computer?
  ○ What is software used for?
  ○ Example Activity:
    ■ Label the parts of your computer
● Clients and Servers
  ○ How cloud computing works
  ○ Client server model
● Personal Servers vs, Web Server Providers
  ○ Pros and cons of personal servers vs, using web server provider
● Future of Computing
  ○ Research uses of Artificial Intelligence in use now
  ○ Research new ways of storing data
  ○ Example Class Activity:
    ■ In what ways can we use technology that we couldn't 10 years ago. Are these technological advances helpful or harmful overall?

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PBL Benchmark 4: Present a Data-Driven Insight from a Simulation

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Required Research Tasks: Students will research communicable disease simulations and utilize one they feel best projects the data they are interested in knowing more about.
Graded Assignment: Using data projections from a simulation (e.g., about the rate of spread of a certain disease, the impact of vaccinations and antiviral medications, etc.) students will find patterns and draw conclusions on an aspect that they are curious about. They will create an informative data visualization which could be a screenshot or giphy from a running of the simulation and present their findings.
Suggested Live Session Prompts: How can I locate a reliable simulation for communicable diseases? What makes a simulation trustworthy and reliable? How can I create a data visualization from running a simulation? How do I use a simulation to find patterns, draw conclusions and possibly make predictions? Can AI detect the outbreak of diseases faster than humans? What else can AI help with as it relates to communicable diseases?

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Unit 5: Designing User Interfaces (3-4 weeks)
Browse the full content of this unit at https://codehs.com/library/course/9565/module/14297

Objectives / Topics Covered	- What makes an engaging interface? - Various User Interface (UI) Design techniques - Accessibility issues - Readability - Rapid prototyping - User testing
Example Assignments / Labs	- Example exercises: - Research existing user interfaces - Assess the user interfaces of various web sites - Research a problem, and gather empathy and insights for stakeholders who are involved in the problem - Create a problem statement based on user research - Generate potential solutions for a problem - Prototype and test several solutions - Design a website using paper prototypes, test these prototypes and get feedback from your peers, and improve your design before implementing it with code - UI Design Project - Find and present an article about a particular UI design technique - Create your own live examples using this technique
PBL Benchmark 5: Develop and Curate a Campaign Website	**Required Research Tasks:** Students are asked to explore and compare campaign-type websites with respect to their layout and design elements. **Graded Assignment:** Students will either create a website that curates their blog posts, podcasts, simulation visualizations, and any other pages that student choose to include to help make their site useful to their local Department of Health. **Suggested Live Session Prompts:** How do you use HTML and CSS to set up a suitable layout for a website? How can a website help keep people informed with accurate and useful information?