

PACIFIC AMERICAN SCHOOL
G7 Design Thinking in Technology 2018-2019
Wed & Fri: 1:25~3:05. Room C212
Ms. Liu

Course Description

Welcome to G7 Design Thinking! In this project-oriented course, students will be introduced to technology with a focus on web programming. In the first semester, students will learn about web technologies such as HTML, CSS, Javascript, PHP, and MySQL databases, as well as graphics and mockups. The process of developing a user-friendly website directly uses design thinking ideas: empathize, define, ideate, prototype, test. In Quarter 3, students will apply what they've learned to create websites for someone else, tailored for their specific user and purpose, thus culminating in a final project for the March Design Thinking Showcase. In Quarter 4, students will be introduced to miscellaneous topics which may include: Linux, Github, Desmos, graphing calculator usage with the TI, machine learning concepts, and digital signal processing.

Required Materials

1. Laptop. Students must bring their laptop to every class.
2. Pen/pencil/eraser, paper notebook.

Standards

The learning objectives for this course are based on the level 3 Standards of the [Computer Science Teachers Association](#) (CSTA)

- Use algorithmic problem solving to design solutions
- Learn about integrated development environments, software project collaboration, and version control.
- Implement the design thinking process by creating a friendly user experience.

Classroom Behavior Expectations

Failure to comply with the policies may result in parent conferences and/or Administrative referral. Please refer to the Student Handbook for existing guidelines.

1. Be prepared at the bell.
2. Remain in your assigned seat and stay on task.
3. No cell phones or another course's material during class.
4. Computers are to be used for class-related material only.
5. Raise your hand before speaking. Speak English. Respectfully listen while others are speaking. Be courteous to classmates, faculty and staff at all times.
6. Restrooms are to be used before and after class. If a student needs to leave class, he/she must sign out and then sign in. Stay in the classroom during breaks.
7. Keep your work area neat and tidy. Pack up your books and stationery, remove eraser crumbs from the tabletops, and push your chair in before leaving your desk. Do not write on the tables.
8. Walk, do not run. Follow directions and ask permission before using classroom equipment.

Course Requirements

1. Students are expected to take notes during class, participate fully in class exercises, and study the reference material.
2. Keep an agenda book recording assignment due dates, listed on the board and class website.

3. In case of absence, students are responsible for checking the class website for announcements and new assignments, as well as reviewing a classmate's lecture notes. Missing work must be turned in within one week of the student's return.
4. Homework should be turned in on time, at the start of class. Late assignments will be deducted 10% for each day late. An assignment that is more than three days late will be given an automatic zero.
5. Academic honesty is expected of all students. Homework must be completed independently.
6. I am happy to help answer questions outside of class, but please gather your questions in a list beforehand and make an appointment.

Grading (Category percents are subject to change.)

Projects 60%

- As new topics are introduced, students will apply what they learned by creating their own websites.
- Individual blog documenting design thinking and learning progress.
- DT showcase group website tailored for their specific user.

Design Thinking Progress 25%

- Progress reports are assigned for stages of the design thinking process: brainstorming for user needs, user contact list, topic proposal with problem statement of user needs, interview questions, interview responses, user feedback, reflections on improvement.

Class Participation 10%

- This score will be affected by noncompliance with classroom behavior expectations, such as arriving to class late or unprepared, sleeping during or disrupting the lesson.

Speaking English 5%

- 5 points will be deducted for each occurrence of non-English casual conversation inside or outside the classroom.

Course Outline

QUARTER 1

Installation

Simple website and elements in a web page -- website 1

HTML and CSS -- website 2

Bootstrap -- website 3: make your blog responsive

website 4: mockup for group DT website

QUARTER 2

Javascript operators, variables, loops, functions

website 5: make your blog interactive

PHP -- website 6

database and MySQL -- website 7

QUARTER 3

front-end versus back-end

Apply concepts to create a website tailored for your user.

DT project roles: 1) interviewer, documenter, art and graphics, 2) front-end 3) back-end

Test the product, incorporate feedback, iterate

QUARTER 4

Possible topics include:

Linux

Github

Desmos

TI Graphing Calculator

Ideas of machine learning

Signal processing: sending pictures by sound