Coding for the Web -- Core

Course Description

Coding for the web is an introductory course focusing on the foundational programming concepts in web development, such as: functions, loops, conditional statements, async functions, lambdas, as well as analyzing and solving problems like a programmer. Though this course is utilizing, HTML5, CSS3, JSS, and ES6, this is not a "web design" course. Students will have the skills, knowledge, and experience to create web applets by the end of the course. The main goal of this course is to develop students that have the ability to think critically about how to solve problems using computational thinking and good old fashioned troubleshooting

Course Objectives

- The goal of this course is to seed programming interest in students so they feel confident and that they have an ability and comparable skills they need in order to launch a career in technology.
- Develop reasoning skills, cognitive constructive capabilities, and computational thinking skills.
- The course has been built to provide the students with a solid foundation in the most common paradigms of computation, and then allow the students to integrate their own interests into the course.
- The course is broken down into three main categories: Programming Fundamentals, Ubiquitous Web, and Interest Based Application Development in order to provide enough practice for students

Assessing Performance

Students are assessed by obtaining weekly grades on the following: Work Ethic, Projects, Presentations, and Reflections.

Course Essentials

Equipment	Cost/Unit
Consumable material	$0- $80 per year (only for those interested in private portfolios)
Reusable material	only cost Effort
Classroom set of computers/Chromebooks	$0 if you already have some, $100-600 per computer if you need to purchase

First Semester

Unit 1: Programming Fundamentals	Guided Practice and PBL through hands on coding that are module based and are scaffold in a redundant and repetitive manner. Develop and harness troubleshooting and computational skills as the pillars that allow modules that are slightly disjointed. ES6 focused.

Second Semester

Unit 2: Ubiquitous Web	PBL and guided practice about and through data manipulation and the creation in order to feed and deliver the information to a user or another web based service. JSON && ES6 focused
Unit 3: Interest Based Application Development	Discovery and PBL through the research of a students interest in order to incorporate them into the template projects that focus on general outcome not how to achieve the outcome students will be the curators of the constitution of their own projects. full spectrum based

CODING FOR THE WEB

1. Materials

   A desktop or laptop computer, access to 1-to-1 daily, and Internet. Chromebooks are acceptable but PC's preferred.

Software (Each student needs access to a computer)	Recommended Unit	Cost per Unit
Visual Studio Code (VSCode)	1 per student	Free

2. Required software, networking access, and access to LSU servers
   - Teachers will need to be able to share documents via Google drive with LSU Instructors.
   - Each laptop must be installed with a text editor. We recommend Visual Studio Code (VSCode)
   - Principals will need to communicate with the district's information technology department to ensure that there are no technological restrictions that block access to servers in the lsu.edu or lsupathways.org domains. In addition, students must be able to access the following websites:

stackoverflow.com	codepen.io	tonejs.github.io
alpha.editor.p5js.org	w3schools.com	developer.mozilla.org
ezgif.com/sprite-cutter	youtube.com	github.com

3. Required teacher collaborations
   Teachers will communicate with LSU instructors via a Google group set up for this purpose.
4. Required administration of course content, pre/post-test, and research instruments
   All required materials and instruments will be either posted in a Google drive or their location announced via the Google group for this course.
5. Other
   As this is a project-based learning class, we strongly suggest that each section of the course be limited to a *maximum* of 20 students. If the course is overloaded with students, they will not receive adequate instruction