Republic of the Philippines
Department of Science and Technology
PHILIPPINE SCIENCE HIGH SCHOOL MAIN CAMPUS
Agham Road, Diliman, Quezon City
(02) 8929-1606

CS3 - Web Development

Computer Science 3

Web Development

The course is designed to employ output-based learning and focuses on the process of web development using HTML, CSS, and Scripting languages. The programming component of this course exposes the students to writing code done in languages that can be executed by both the browser and the web server, such as JavaScript and Node.js. The course also aims to motivate the students to collaborate and participate in various social issues, and learn the value of teamwork to accomplish various projects.

A. Topic Outline (not necessarily discussed in the order below)

Part I: JavaScript

- Events and Functions
- Loop Structures for Arrays and Objects
- Arrays and Objects Methods
- HTML DOM and Finding HTML Elements
- String, Math, and Date Objects (discussed when needed)

Part II: HTML

- HTML basic structure and basic tags
- HTML tags: div, span, img, a, p and br, figure, et al
- HTML Table
- Multimedia tags (video, audio)

Part III: Introduction to CSS

- Introduction to CSS and its Basic Syntax
- Basic CSS Selectors
- Types of CSS
- CSS fonts, text and background properties CSS
- **Text Links, Events in CSS, and image sprites**
- **CSS Float**
- Box Model
- Additional CSS Properties
- **Debugging Techniques and Wireframing (reading materials)**

B. Grading System

Formative Assessment (Quizzes, Graded Exercises)	30%
Alternative Assessments Proj Proposal - 10% LT - 20% PT - 20% Final Project - 20%	70%
Total	100%

Email Address: ocd.mc@pshs.edu.ph

Republic of the Philippines
Department of Science and Technology
PHILIPPINE SCIENCE HIGH SCHOOL MAIN CAMPUS
Agham Road, Diliman, Quezon City
(02) 8929-1606

CS3 - Web Development

	2nd Qtr Weekly View of the Course		
Topic	**Learning Outcomes**	**Sub-Topics**	**Submissions / Exams (through KHub)**
Week 1 (Oct. 2 and 3)			**Q1 Wrap up and Orientation for Q2**
Week 2 Introduction to HTML HTML 5 Media Tags and Embedding Youtube video	Use basic HTML tags to create your first web page Create a simple webpage content with hyperlinks. Present data in tabular format Compare the differences of HTML and HTML5 Demonstrate the use of various HTML5 tag Demonstrate the use of various HTML5 tags and <iframe> in embedding youtube videos	HTML basic structure and basic tags HTML tags: img, a, p, br, etc. HTML Table tags with caption tr, th, td, thead, tbody, tfoot Semantic and media tags (header, footer, nav, aside)	**FA:** 1st Graded Exercise - Group of 3 members and Develop 3 webpages (one homepage and 2 content pages of any topic of your choice) containing most of the HTML tags and link each others work (group and individual grade) No layout nor CSS yet for the 1st Graded. Creation of 2nd Qtr Portfolio Repository
Week 3 Introduction to CSS CSS Box Model	Apply basic CSS on a web page Apply basic format and layout technique Implement CSS Box Model and its properties	Introduction to CSS and its Basic Syntax Basic CSS Selectors Types of CSS CSS fonts, text and background properties CSS Including style for basic CSS. Box Model CSS Properties (border, margin, padding, width,	**XCredit** 1st Non- Graded Exercise on CSS **FA:** 1st Quiz (Topic: CSS on KHub) 2nd Graded Exercise on the use of CSS (group and individual grade related to the 1st Graded)

CS3 - Web Development

Link Styles CSS Float, (and display properties - extra topics)	Enhance web pages by incorporating links styles and events using CSS Apply basic layout technique using Float	height, unit of measurement) Text Links and Events in CSS image sprite CSS Float to wrap text around image and for basic layouting including style for basic CSS.	

Week 4 Event and functions (continuation/ review) HTML DOM (optional topic) Best Practices for web page layout.	Enable the students to integrate basic Javascript with HTML and CSS Elements Apply functions and event handlers Apply methods to access HTML Elements (no learning guides on this - optional topic) Implement Best Practices for web page design layout Wireframing tools and the use of colors to convey messages.	event-handlers and calling functions HTML DOM Structure and methods to access HTML Elements and its properties **Supplementary Reading on Best Practices for Web Page Design - Focus on the use of colors and wireframes**	**XCredit** 2nd Non-Graded Exercise (integrating JS and DOM) **AA1: Submission of Project Proposal inside a separate Github Repository**

Republic of the Philippines
Department of Science and Technology
PHILIPPINE SCIENCE HIGH SCHOOL MAIN CAMPUS
Agham Road, Diliman, Quezon City
(02) 8929-1606

CS3 - Web Development

Week 5 (Monday and Tuesday only Oct 27 and 28)			**AA2: Long Test only on HTML, CSS and JS events and functions on the second period** **Start of Halloween All Saints/Soul days break**
Week 6 Arrays and Objects (use of checkbox, radioas sources of data)	Represent group of similar data using arrays Create arrays and define its element Manipulate data in arrays by sorting and searching algorithms	Declaring and Using Arrays Use of for..in and for..each loop structure Sort and Searching through Arrays (properties and methods of arrays) Pre-defined Array Methods (put, push, sort, splice, shift and unshift) String to array and vice versa conversion methods	**FA:** 3rd Non-Graded Exercise on Array (The Greatest) Quiz#2 on Arrays and Objects (on paper) **Project Making**
Week 7 JS Objects Debugging Concepts String and Date Objects	Manipulate JS data Objects Use appropriate techniques in correcting errors (debugging) Identify and practice the latest updates in CSS Use methods within the Math and String objects to manipulate data	JS Objects (defining, placing content, and deleting) Debugging Techniques **(always being discussed while showing codes since 1st Qtr)** Common JS Objects (used when needed only within each exercises in the	**FA:** 3rd Graded Exercise on Objects **Project Making**

CS3 - Web Development

	Use methods within the Date and Number objects to manipulate data	previous weeks)	
Week 8 (Nov. 17-21) Humanities Week			**Project Making**
Week 9 Continuation of topics			**AA3: Practical Test on arrays and objects (Single period)** **AA4: Project Submission**
Week 10 (Dec. 1-3)			**Periodic Exam (none for CS3)**

Republic of the Philippines
Department of Science and Technology
PHILIPPINE SCIENCE HIGH SCHOOL MAIN CAMPUS
Agham Road, Diliman, Quezon City
(02) 8929-1606

CS3 - Web Development

Project Requirements

One of the assessments that will be used in the course is to ask students to do a project that will apply the topics learned in the course and develop a web site with an application. The project will be implemented from 2nd to the 4th Qtr with changes/addition based on the topics discussed per quarter.

The project will be developed by a 2-person team and will design and develop an initial 5-web page website implementing most of the topics discussed in this quarter. A project proposal should be submitted that contains the following. Included in the proposal is a description of a JS implementation in the website.

A. Project Proposal 1: 30pts.

The project proposal shall contain the following:

1. A working website **Title**. The title should be short, catchy and would encapsulate what the website is about. ***This title will be used on the website browser tab.***
2. A second title could be used to emphasize the importance of the website.
3. A logo for your website should also be designed. To be used in every page of the website and on the web browser tab (the favicon/icon)
4. A short but comprehensive **description** of the website using only one or two paragraphs. **This will be used as part of the homepage content of your website.**
5. **An outline** of the website of at least 5 web pages. Each outline should have a subtitle (Example: Home, Players, About Us, etc) The website should have a clear home page. The outline should be descriptive and refrain from using Page 1, Page 2 or Link 1, Link 2. **The outline will be translated as the webpages of your website.**

6. **A description on how JS will be incorporated in your website or on one of the webpages. I must clearly state where it will be used or found on the website.**

7. An initial **wireframe** for all the proposed webpages, ***showing clearly the layout, position of contents (text, images and media files), and the navigation between web pages.*** The wireframe should also clearly show ***actual*** web pages' titles and the section headers.

   On Navigation it should allow users to switch between pages with ease from any of the pages.

CS3 - Web Development

Lastly, include a footer in your wireframe for copyright notices, source citations and Social Media Links using well known image sprites

8. The project proposal containing above information should be saved as a **readme.md** inside a Github project repository maintained by members of the pair. **The project team name should be WDProjSectionLastNames.**

9. **The Github project repository link should be submitted in KHub to give your teacher access to your files**

Rubrics for grading (Total points: 30):

Criteria	5	4	3	1-2	0
Title	Has the characteristic of a good title together with a finalized logo	Has most of the characteristics of a good title and a draft logo	Has some of the characteristics of a good title or no logo	Has a title	No title nor a logo
Description	A short but comprehensive description of the website	The description is comprehensive but has more than two paragraphs	The description is clear.	The description is not clear or it is confusing	No description
Outline of Content	The outline contains 5 web pages including that of the homepage with short description for each.	Contains an outline of four web pages only with short description for each	Contains an outline of three web pages only with short description for each	Contains an outline of 1-2 web pages only with short description for each	No outline
Wireframe	There are five wireframes for all webpages The components and layout of the webpage are clearly shown	There are four wireframes, but missing one component.	There are three complete wireframes	There 1-2 wireframe/s Or there are two wireframes but are lacking too many components or are very confusing.	No wireframe

CS3 - Web Development

JS Description in one of the webpage	Has a clear description of the implementation of JS in the webpage that is appropriate to its content.		Has a clear description of the implementation of JS in the webpage but may not be necessarily appropriate to the page.		No JS description
Using Github with readme.md	The proposal is inside a github repository readme.md using the prescribed name of the repo.		The proposal is in github but not in readme.md		The proposal is not inside github.

B. Final Project Submission (55pts)

- All files should be inside your Github project repository following the directory below.

  public\ (for html files, images, css and client side .js files)
  index.html

- All pertinent meta tags and titles should be included in each of the web pages.
- Your website should carry a favicon/site icon displayed every time on the browser tab AND on each page of the website.
- Pertinent Comments should also be incorporated in all files, especially your JS file
- Source Citations using APA format should be incorporated as well and client/user facing on the footer section per page.
- A simple JS that is appropriate to the website or to the webpage that carries it.
- Use of images and media files are required.
- Most of the CSS and JS should be inside external files.
- **Each web page should have at least two paragraphs, while images/media components should have at a very least captions attached to them.**
- For more details and how to grade your project, please refer to the Rubrics below or on the following pages.

Rubrics for grading (Total points: 55pts):

Criteria	5	4	3	1-2	0

Republic of the Philippines
Department of Science and Technology
PHILIPPINE SCIENCE HIGH SCHOOL MAIN CAMPUS
Agham Road, Diliman, Quezon City
(02) 8929-1606

CS3 - Web Development

# of pages	There is a homepage and 4 content pages with all of them contains draft contents and with clear components (header, navigation, body, footer with reference lists	There is a homepage and 4 content pages but lacking some components	There is a homepage and 3 page but with some components present	There is only one or 2 webpages Or there are two web pages but most components are not shown.	No webpages
Navigation	All pages have working links, and all pages are accessible from anywhere on the website.	All pages have working links, but content pages are only accessible from the home page, or a bit of a challenge to move around the website.	Only one link is not working.	More than one link is not working.	Links are not working.
HTML Structure	All webpages have Complete HTML structure (DOCTYPE, head and body. There are also meta tags and favicon and well commented) Correct embedding of HTML tags. Presence of most of the tags discussed in the previous weeks. Sources are clearly included and are shown on the web page.	There are few components in the HTML structure are missing	There are several components in the HTML structure are missing	Most of the components in the HTML structure are missing	Not in HTML form
Mechanics of writing x 2	There is more than 2 paragraphs per webpage with No grammatical nor typographical errors	There are two webpages in all web pages but with minimal but negligible grammatical and/or typographical errors	There are several grammatical and/or typographical errors	The webpages are peppered with grammatical and/or typographical errors.	No content to grade

Email Address: ocd.mc@pshs.edu.ph

Republic of the Philippines
Department of Science and Technology
PHILIPPINE SCIENCE HIGH SCHOOL MAIN CAMPUS
Agham Road, Diliman, Quezon City
(02) 8929-1606

CS3 - Web Development

Graphics x 2	Presence of images and other multimedia with captions that are relevant to the web page Balanced use of graphics/media and text.	Presence of images and other multimedia components but some have no captions, or some are not relevant to the web page	There are images or other multimedia components in the web page but mostly not relevant to the webpage.	There are only one or two images and/or multimedia components. The images and/or multimedia components are completely not relevant to the web page.	No image nor any multimedia components
CSS components x 2	Most of the CSS properties and selectors were judiciously used and artistically incorporated in all web pages and are inside an external file	Most of the CSS properties and selectors were judiciously used and artistically incorporated but are incorporated as an internal stylesheet.	CSS properties and selectors were judiciously used but lacking in artistic appeal	The CSS properties were not used correctly and contributed to the overall lack of artistic appeal.	No formatting CSS properties were used in the web pages
Useful implementation of JS x 2	The JS implemented is very useful or appropriate to the webpage and is working well.	The JS implemented is useful or appropriate to the webpage but has minimal issues.	The JS implemented is somewhat appropriate to the webpage but has some issues.	The JS implemented is not appropriate to the webpage OR the JS has a lot of issues.	No JS Implemented or has one but not working at all.
				Total	55pts

Note:

Selected projects will be displayed during YMSAT 2026 in the ASTB Hall for public voting. Winners will be announced at the closing ceremony. A certificate will be given to all selected projects. A separate certificate and/or medal will be awarded to the project voted to be the best.

Email Address: ocd.mc@pshs.edu.ph