1. **Course Title: Web Development 1** **If Title Change, Previous Title:_Computer Science Introduction**	7. **Action** ▢New Course X Course Revision ▢ Title Change Only
2. Date Submitted: **10/27/20**	8. **Grade Level**(s) ▢ 6 X9 X11 ▢ 7 X10 X12 ▢ 8
3. Transcript Title/Abbreviation(s)	**9. Prerequisites** (Please list.) ▢ Required XRecommended Algebra I, Algebra II
4. Transcript Course Code/Course Number :	**10. Seeking Program Distinction?** ▢ YES (Check one below.) XNO ▢Honors ▢ AP ▢Other
5. Subject Area Computer Science	11. **Is this a CTE course?** X YES ▢ NO **If YES, complete Section C**
6. **Department** Career Technical Education	12. **Previously approved by UC?** X YES ▢ NO ▢ NA for 6th-8th
13. UC ELIGIBILITY **Already eligible?** ▢ NA for 6th-8th **XYES** ▢**NO** **a** ▢ **b**▢ **c**▢ **d**X **e**▢ **f**▢ **g**X **Proposing eligibility?**▢ NA for 6th-8th ▢**YES** ▢**NO** **a** ▢ **b**▢ **c**▢ **d**▢ **e**▢ **f**▢ **g**▢ Please mark one for approved eligibility or proposed eligibility.	14. **Unit Value/Course Credit/Length of Course** ▢ 0.5 (semester or half-year X 1.0 (one year equivalent) ▢ 2.0 (two-year equivalent) ▢ Other
15. School Contact and Course Developer Name: Andrew Doolittle Phone: 510-618-4600 ext 2236 Email: adoolittle@slusd.us Position: Teacher	
16. Approval Signatures: Department Chair: Andy Shyers F4FC5C7329E7433... Approval Date: 10/27/2020 Principal: DocuSigned by: Reginald Richardson 9B51AFF0757B49D... 11/6/2020	**DISTRICT OFFICE USE ONLY** **Date approved by Board Curriculum Committee** 1/25/21 **Date approved by Board**

DocuSign Envelope ID: 4450F1C7-5F36-4C55-A423-CC8838B7A42B

SECTION B. COURSE CONTENT

17. Course Description

The Web Development course is a project-based course that teaches students how to build their own webpages and websites using industry standard languages including HTML, CSS and JavaScript. Students will create their own web pages and small sites to use as portfolios of their work.

This course is designed to introduce students with little or no prior knowledge of website development how to create web pages and sites using HTML, CSS and JavaScript. Throughout the course of the year, students will learn to create web content and structure through the use of HTML, to create style and consistent look and feel for those pages using CSS, and to provide a dynamic interactive web site using JavaScript. Strong analytical and mathematical skills are recommended due to the exact and logical nature of programming languages.

18. Course Goals and/or Major Student Outcomes

This course is designed to introduce students with little or no prior knowledge of website development how to create web pages and sites using HTML, CSS and JavaScript. Throughout the course of the year, students will learn to create web content and structure through the use of HTML, to create style and consistent look and feel for those pages using CSS, and to provide a dynamic interactive web site using JavaScript. Strong analytical and mathematical skills are recommended due to the exact and logical nature of programming languages.

19. Course Objectives (standards)

CTE ICT Standards Sections C and D
https://drive.google.com/a/slusd.us/file/d/0ByV56Bd34MGPTmlHbDVBcHpjNXc/view?usp=sharing

20. Course Outline

1. Getting Started with Web Design (from CodeHS WebDesign)
   - This unit introduces the course and provides background information about the internet, URLs and the basic flow of information from web server to browser.
2. HTML – Structuring Websites (from CodeHS WebDesign)
   - This unit introduces the HTML (Hyper Text Markup Language) programming language, which is the standard language for defining content and information flow on the World Wide Web (WWW).
   - Students will work through exercises learning how to add words, images, tables, lists and other elements to an HTML page, as well as the use of stylistic elements (bold, italic, etc.) and color.
3. CSS – Styling Websites (from CodeHS WebDesign)
   - This unit introduces students to the CSS (Cascading Style Sheets) language, which is used to provide visual effects (colors, page placement, borders, etc.)
   - Students will learn the basic structure of CSS, how to use CSS selectors, including tags, classes and ids, to define rules for a browser to process and display content.
4. Project – Create Your Homepage (from CodeHS WebDesign)

DocuSign Envelope ID: 4450F1C7-5F36-4C55-A423-CC8838B7A42B

- This unit is a brief summative project for students to demonstrate their mastery of HTML and CSS.
- Students will create a single web page showing something about themselves.

5. Advanced HTML and CSS (from CodeHS WebDesign)
    - This unit introduces more advanced concepts using HTML and CSS, including multi file sites, use of iframes to aid in page layout, and more.
    - Students will learn how to separate HTML and CSS in different files, how to design and implement multi file websites and use common resources in a single CSS file for multiple HTML files, CSS design and implementation concepts, and advanced topics including animation, interaction, visibility and positioning of elements on screen.
6. Advanced Project (from CodeHS WebDesign)
    - This unit is a more extensive summative project, which will incorporate the concepts learned in the previous units.
    - Students will create a multiple page web site with a common theme, such as educating the user about a theme, person or event of interest.
7. Bootstrap (from CodeHS WebDesign)
    - This unit introduces the basics of Bootstrap, which is one of the most popular frameworks supporting web design and implementation. Bootstrap provides screen layout, navigation, typography and other templates that greatly simplify HTML and CSS coding.
    - Students will learn how to incorporate the Bootstrap grid system, navigation bars, jumbotrons and other elements into their web page designs.
8. Bootstrap Project (from CodeHS WebDesign)
    - This unit provides another summative project, incorporating Bootstrap along with all other learning in the class to date.
    - Students will work in small groups to implement a multipage themed website using responsive design using Bootstrap as their implementation framework.
9. JavaScript & Graphics (from CodeHS IntroJsGolden)
    - This unit will introduce students to the JavaScript programming language. JavaScript is used in web development to provide dynamic page elements, including popup windows, real time clocks and other concepts that are unattainable through HTML and CSS alone. The first few units are not related to web programming, using JavaScript as a stand alone programming language and environment.
    - The students will learn about the use of variables, user input, arithmetic expressions and simple graphics in JavaScript.
10. JavaScript Control Structures (from CodeHS IntroJsGolden)
    - This unit will introduce programming control structures as they are used in JavaScript. These same constructs are used across all programming languages and environments – while the syntax will vary from language to language the essence of control and iteration remains constant.
    - Students will learn about Booleans and Boolean expressions, for and while loops, conditionals and nested control structures.
11. JavaScript Functions and Parameters (from CodeHS IntroJsGolden)
    - This unit will introduce the concept of functions and further examine nested control structures. Functions are a way of abstracting sets of programming operations to be reused through one or multiple programs, therefore reducing and simplifying the required code.
    - Students will learn about using, defining and creating functions with and without parameters and return values.
12. JavaScript Challenges (from CodeHS IntroJsGolden)

DocuSign Envelope ID: 4450F1C7-5F36-4C55-A423-CC8838B7A42B

- This unit provides a set of summative programming challenges, which will test the student's knowledge of JavaScript programming.
- Students will solve 4 large and complex programming problems using functions and all the other JavaScript skills learned to date.

13. JavaScript, Domain Object Model (DOM), jQuery and the Web
    - This unit ties together the pure Web (HTML and CSS) and programming (JavaScript) portions of the course. The Domain Object Model, which provides a programmatic description of the structure of a web page, and jQuery (a JavaScript library used to simplify document traversal and manipulation)
    - Students will modify one of their already created projects to add JavaScript and dynamic content, using the tools learned in this unit.
14. Final Project
    - This is the final summative project. It is the culmination and combination of all the previous units into a single multipage web site.
    - Students will work in small teams, conceptualizing, storyboarding, prototyping, developing and testing a professional quality website.

21. Instructional Materials:

Board approved required text

Meloni, J., Kyrnin, J. (2019). Sams Teach Yourself HTML, CSS, and JavaScript All in One, Third Edition, Sams Publishing

Supplementary materials

- www.w3schools.com
- www.stackoverflow.com
- www.khanacademy.com
- www.youtube.com
- www.codeacademy.com

Additionally it is recommended that computers used for the class have Visual Studio Code (Microsoft) installed, along with appropriate support extensions for HTML and JavaScript programming.

22. Instructional Methods and/or Strategies (Key Assignments)

With the course mostly online, the students are able to work at their own pace. The instructor will introduce key concepts or new instructional units, but otherwise will mostly serve as the guide on the side, looking at students work over their shoulders and asking or answering questions or reinforcing key points. If a question comes up multiple times within a class, the instructor will work out an example on the projection screen to show how to work towards a solution.

The instructor is very much a guide, steering students towards accessing prior learnings and examples to solve new problems. Only in rare cases will he actually instruct students on actual code to write.

23. Assessment Methods and/or Tools

The course is mostly project-based, and student projects will be assessed on the following:
Classwork – mostly done online using CodeHS.com
Quizzes – mostly done online using CodeHS.com
Tests – mostly done online using CodeHS.com
Projects

Students will have short Unit Quizzes at the beginning of each module and at the conclusion of each unit, to assess their knowledge of syntax, best coding practices, and code interpretation and debugging

24. Grading Policy will follow SLUSD grading policy

Projects	40%
Classwork	25%
Quizzes	15%
Tests	20%

SECTION C

25. Context for Course

REQUIRED FOR CTE COURSES

This course is primarily web based, with instruction provided by 2 courses designed and implemented by CodeHS. The first course, which makes up the bulk of this course, is their Web Design (Picasso) course, which covers HTML, CSS and Bootstrap as the major technologies. The second course is their Introduction to Computer Science in JavaScript (Golden), which covers JavaScript programming. The Web Design course is covered in its entirety, the JavaScript course is used only to establish the basics of JavaScript programming as related to web programming. There is also several days' worth of lessons about integrating JavaScript into HTML. Both of the CodeHS courses are approved as UCOP D Lab Science.

Articulation for the course is under construction, currently working with Las Positas Community College in Livermore, CA.