**CS50C: Web Development 3: JavaScript**
Section 5371, Spring 2018 Course Syllabus

**Instructor:**Ethan Wilde, ewilde@santarosa.edu

Course Description

JavaScript is a cross-platform, object-based scripting language. This course provides a solid foundation in JavaScript and shows students how to create scripts and incorporate them into web pages. Projects include writing Javascript and jQuery programs that manage dynamic content and web page elements such as image slideshows; menus, tabs and panels; form controls and dialogues. Students will also create data-driven web elements using AJAX and API interfaces to web services such as maps and social media.

**Recommended Preparation:**Course Completion of CS 50.11B OR Course Completion of CS 50A

**Prerequisites:** Course Completion of CS 50.11B OR Course Completion of CS 50A

*Whether you want to become a professional member of a web development team, a game programmer, or a software developer, mastery of the JavaScript programming language is essential to those goals. We will engage in advanced JavaScript language explorations, including use of open source JavaScript libraries such as the jQuery library, the data visualization library D3, and browser-based game programming using the Phaser library. You will become proficient in the creation of interactive experiences using JavaScript and the many freely available open source libraries written in the language.*

Student Learning Outcomes

**Students will be able to:**

1. Code and deploy basic and intermediate JavaScript, jQuery, and AJAX programs.
2. Demonstrate and apply the Document Object Model (DOM) and other fundamental Internet technologies accessible through Javascript.

**Upon completion of the course, students will be able to:**

1. Analyze and customize Javascript code.
2. Write JavaScript code that selects and manages document elements, validates form data, creates interactive elements, accesses server data.
3. Apply appropriate user experience and interactive design concepts to custom websites.
4. Demonstrate JavaScript scripting skills in a variety of student-designed projects.

**Topics and Scope:**

1. Introduction to JavaScript
2. JavaScript Fundamentals
3. Putting JavaScript to Work
4. The Document and Window Objects
5. Arrays
6. Working with Numbers and Dates
7. Working with Strings
8. Working with Forms
9. Working with Dynamic Data
10. Introduction to jQuery
11. jQuery: Styling Elements
12. jQuery: Animating Elements
13. jQuery: Images and Slideshows
14. jQuery: Navigation
15. D3: Data Visualization
16. Phaser: Game Development

**Assignments:**

1. Read approximately 25 pages per week
2. Create 6-8 original JavaScripts and incorporate them into a web-based experience
3. Download, customize and integrate existing JavaScript libraries into a web-based experience
4. Download and deploy the jQuery library in a web-based experience
5. Create a unified website incorporating all class projects and materials
6. Quizzes, midterm and final exam
7. Project critiques
8. Participation in electronic message board discussions (online only classes)

Class Meetings

**Spring 2018 Schedule**

|  |  |  |
| --- | --- | --- |
| Online | Weeks start on Thursdays | Canvas shell |

*All class materials for each module will be released online in Canvas on Thursdays throughout the entire semester.*

Instructor Contact

**Ethan Wilde**

Email: ewilde@santarosa.edu

Phone: [707-527-4855](http://tel:1-707-527-4855/)

**Spring 2018 Office Hours**
***January 23 – May 15, 2018***

|  |  |  |
| --- | --- | --- |
| Mondays | 1:20pm - 3:00pm | Maggini 2937 |
| Tuesdays (Online) | 8:00am - 11:00am | Online: Email ewilde@santarosa.edu or Skype ethanwilde |
| Wednesdays (Online) | 8:00am - 9:00am | Online: Email ewilde@santarosa.edu or Skype ethanwilde |

You can reserve future appointments for my office hours online by visiting <http://srjc.ethan.com/reserve/>.

I respond to emails within 48 hours. I never respond on Sundays.

Course Web Site

Students will use the Canvas course web site for assignment instructions, submitting assignments, viewing classmates' work, sharing resources, and viewing grades. *The Google Chrome browser is recommended for viewing the Canvas-powered course site. Internet Explorer is not recommended.*

Textbooks

***Learning JavaScript: JavaScript Essentials for Modern Application Development*** (3rd)
Ethan Brown
1491914912 (ISBN 10)
978-1491914915 (ISBN 13)
[SRJC Libraries eBook available](http://library.santarosa.edu.santarosa.idm.oclc.org/vwebv/holdingsInfo?bibId=264248)

Consider getting a copy of this recommended reference.

***JavaScript: The Definitive Guide*** (6th)
David Flanagan
0596805527 (ISBN 10)
978-0596805524 (ISBN 13)
SRJC Libraries call number: [QA76.73.J39 F53 2011](http://library.santarosa.edu/vwebv/holdingsInfo?searchId=55&recCount=25&recPointer=0&bibId=216729)
[SRJC Libraries physical book available](http://library.santarosa.edu.santarosa.idm.oclc.org/vwebv/holdingsInfo?bibId=216729)

*Consider buying a used copy.*You can locate and order textbooks online via the [SRJC Bookstore](http://bookstore.santarosa.edu/santarosa/home.aspx).

Equipment

* **A personal computer**, either at home, work or on the Santa Rosa or Petaluma campuses.

Required Software + Services

* **Internet access**
* **Web browser**
	+ [Google Chrome](https://www.google.com/chrome/browser/desktop/) strongly recommended
* **Text editor,** for Week 1 only, such as:
	+ [TextWrangler](http://www.barebones.com/products/textwrangler/) (Mac OS only)
	+ [Brackets](http://brackets.io/) (Windows, Mac OS)
	+ [Sublime Text](https://www.sublimetext.com/) (Windows, Mac OS, Linux)
* **Cloud hosting + development service**
	+ [Cloud9](https://c9.io/)IDE (Integrated Development Environment) required for all students, starting Week 2, for hosting class assignments. This service provides a complete set of browser-based tools in place of the optional software listed below. *Complete the hosting survey to get your free account.*
* **Graphics software** such as:
	+ Adobe Photoshop, part of a [Creative Cloud](http://www.adobe.com/creativecloud/buy/students.html) subscription
	+ [Gimp](https://www.gimp.org/) open source application
	+ [Pixlr](https://pixlr.com/) browser-based image editor
* **PDF display software** such as:
	+ [**Adobe Reader**](http://get.adobe.com/reader/)

Optional Software

The additional software listed below is often used for Web development. Our cloud-based IDE – Cloud9 – will provide a text editor and file transfer support without any additional software needed.

* **Additional Web browsers** including:
	+ [Mozilla Firefox](https://www.mozilla.org/en-US/firefox/new/)
	+ Apple Safari (Mac OS only)
	+ Microsoft Edge (Windows 10 only)
* **File Transfer Protocol (FTP) software** such as:
	+ [FireFTP](https://addons.mozilla.org/en-US/firefox/addon/fireftp/) add-on for Firefox browser (free)
	+ [Fetch](http://fetchsoftworks.com/) (Max OS only)
	+ [WinSCP](https://winscp.net/eng/index.php) (Windows only)

Important Dates

**Day Class Begins: Thursday, January 18, 2018**

Day Class Ends: Friday, May 25, 2018

Last Day to Add without instructor's approval: Sunday, January 21, 2018

Last Day to Drop with refund: Sunday, January 28, 2018

Last Day to Add with instructor's approval: Sunday, February 4, 2018

**Last Day to Drop without a 'W' symbol: Sunday, February 4, 2018**

Last Day to Opt for Pass/No Pass: Sunday, February 25, 2018

**Last Day to Drop with a 'W' symbol: Sunday, April 22, 2018**

Dropping the Class

If you decide to discontinue this course, it is your responsibility to officially drop it. A student may be dropped from any class when that student's absences exceed ten percent (10%) of the total hours of class time. It is strongly advised that if you need to miss more than one class/homework deadline in a row that you contact the instructor to avoid being dropped from the class.

Attendance

For online courses, students who fail to complete the requirements of the first and second class modules will be dropped by the instructor.

Pass‐NoPass (P/NP)

You may take this class P/NP. You must decide before the deadline, and add the option online with TLC or file the P/NP form with Admissions and Records. With a grade of C or better, you will get P.

**You must file for the P/NP option by Febraury 25, 2018.** Once you decide to go for P/NP, you cannot change back to a letter grade. If you are taking this course as part of a certificate program, you can probably still take the class P/NP. Check with a counselor to be sure.

Instructor Announcements and Q&A Forum

The instructor will post announcements on the “Instructor Announcements” page in Canvas throughout the semester. Canvas notifies students according to their preferred Notification Preferences.

Late Policy

All assignments are due at 11:59pm PST on the Wednesday corresponding to the due date. A late submission will receive a 10% penalty for each week it is late. Submissions more than two weeks late are not accepted without prior written arrangement.

Exams

There will be online midterm and final exams. The material comes from the textbook, class lectures and supplemental materials. If any exam is missed, a zero will be recorded as the score, unless you have made prior written arrangements with me. It is your responsibility to take the exams by the due date.

Grading Policy

Click the “Grades” link in Canvas to keep track of your grades. I grade once a week and post grades and comments in the Canvas gradebook.

Grades will be assigned as follows:

|  |  |  |
| --- | --- | --- |
| **A** | 90% - 100% | 900 points or more |
| **B** | 80% - 89% | 800 to 899 points |
| **C** | 70% - 79% | 700 to 799 points |
| **D** | 60% - 69% | 600 to 699 points |
| **F** | 59% or lower | 599 points or less |

Grading Breakdown

|  |  |  |
| --- | --- | --- |
| **62%** | 620 points | **Projects + Assignments** |
| **12%** | 120 points | **Discussions + Attendance** |
| **6%** | 60 points | **Quizzes** |
| **10%** | 100 points | **Midterm** |
| **10%** | 100 points | **Final Exam** |
| **100%** | 1000 points | **1000 points possible** |

Standards of Conduct

Students who register in SRJC classes are required to abide by the SRJC Student Conduct Standards. Violation of the Standards is basis for referral to the Vice President of Student Services or dismissal from class or from the College. See the [Student Code of Conduct page](https://student-conduct.santarosa.edu/).

Collaborating on or copying of tests or homework in whole or in part will be considered an act of academic dishonesty and result in a grade of 0 for that test or assignment. Students are encouraged to share information and ideas, but not their work. See these links on Plagiarism:
[SRJC Writing Center Lessons on avoiding plagiarism](http://srjcwritingcenter.com/research/plagiarism/plagiarism.html)
[SRJC's statement on Academic Integrity](https://studentlife.santarosa.edu/academic-integrity)

Special Needs

Every effort is made to conform to accessibility standards for all instructor-created materials. Students should contact their instructor as soon as possible if they find that they cannot access any course materials. Students with disabilities who believe they need accommodations in this class are encouraged to contact Disability Resources by calling (707) 527-4278 or visit online at [drd.santarosa.edu](https://drd.santarosa.edu/).

Student Health Services

Santa Rosa Junior College offers extensive health services to students. Visit Student Health Services online at [shs.santarosa.edu](https://shs.santarosa.edu/) or call them at (707) 527-4445.

Course Outline

|  |  |  |  |
| --- | --- | --- | --- |
| **StartDate** | **Canvas****Module** | **Topics** | **Assignments** |
| 1/18 | Week 1 | Introduction to JavaScript, Part 1 | Hosting Signup SurveyAssignment 1: Syllabus QuizDiscussion 1: Check-in DiscussionReading: *Learning JS*, Ch. 1 |
| 1/25 | Week 2 | Introduction to JavaScript, Part 2 | Assignment 2: Card SortingReading: *Learning JS,* Chs. 3 + 5 |
| 2/1 | Week 3 | Introduction to JavaScript, Part 3 | Assignment 3: EventsDiscussion 2: Events + ObjectsReading: *Learning JS,* Chs. 4 + 6 |
| 2/8 | Week 4 | Exploring the jQuery Library | Assignment 4: Quiz AppReading: *Learning JS,* Chs. 18 + 19 |
| 2/15 | Week 5 | Exploring the jQuery UI Library | Assignment 5: Enhanced User InterfacesDiscussion 3: jQuery + JavaScript LibrariesReading: *Learning JS,* Ch. 9 |
| 2/22 | Week 6 | Exploring jQuery Plug-ins | Assignment 6: Plug-in Promotional SiteQuiz 1Reading: online |
| 3/1 | Week 7 | Exploring the Google Maps API | Assignment 7: Class MapDiscussion 4: Concepts of GeolocationReading: *Learning JS*, Ch. 7 |
| 3/8 | Week 8 | AJAX: Working with JSON Data | Midterm Project: Map-Based Mobile AppReading: *Learning JS,*Ch. 14 |
| 3/15 | Week 9 | Midterm Review | Midterm ExamDiscussion: Midterm Project Presentations |
| 3/29 | Week 10 | Data Visualization, Part 1 | Assignment 8: Basic Data VisualizationDiscussion 5: Concepts of Data VisualizationReading: *Learning JS,* Ch. 10 |
| 4/5 | Week 11 | Data Visualization, Part 2 | Assignment 9: Advanced VisualizationReading: online |
| 4/12 | Week 12 | Browser-based Game Development, Part 1 | Assignment 10: Basic GameDiscussion 6: Concepts of Game DevelopmentReading: online |
| 4/19 | Week 13 | Browser-based Game Development, Part 2 | Assignment 11: Advanced GameQuiz 2Reading: online |
| 4/26 | Week 14 | Building Mobile Apps with Angular.js, Part 1 | Assignment 12: Draft Mobile AppDiscussion 7: Concepts of Mobile ApplicationsReading: *Learning JS,* Ch. 15 |
| 5/3 | Week 15 | Building Mobile Apps with Angular.js, Part 2 | Assignment 13: Enhanced Mobile AppReading: online |
| 5/10 | Week 16 | Server-side JavaScript with Node.js, Part 1 (Optional) | Assignment 14: JSON-Powered Mobile AppDiscussion 8: Node.js JavaScript RuntimeReading: *Learning JS,*Chs. 2 + 20 |
| 5/17 | Week 17 | Server-side JavaScript with Node.js, Part 2Final Review (Optional) | Final Project: Angular.js Mobile Portfolio AppReading: *Learning JS,*Ch. 13 |
| 5/21Mon | Week 18 | No Regular Class | Final ExamDiscussion: Final Project Presentations |

**Note to students:** the assignments listed above will become available as modules are released in sequence each week. To view course content, go to **Modules**.