COMPUTER SCIENCE

REGIONAL OCCUPATIONAL PROGRAM
Tri-Cities ROP / El Rancho High School
Course Syllabus, 2022-2023

INSTRUCTOR INFORMATION:
Mr. Richard Knott, Tri-Cities ROP Computer Science and Web Design Instructor
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El Rancho High School Classroom: LD-201 | Periods: 1, 2
Class Website: https://www.class.richardknott.net
Professional Experience: Web Developer | Adult School Instructor | Retired H.R. Professional
Education: B.S. Degree in Applied Studies w/ minor in Communications from Cal State University Dominguez Hills | A.A. Degree in Administration of Justice from Cerritos College

COURSE DESCRIPTION:
This course is designed to offer an introduction to computer science using the JavaScript programming language. Students will learn the basics of both computer programming and object-oriented concepts. The material emphasizes computational thinking and helps develop the ability to solve complex problems. This course covers the basic building blocks of programming along with other central elements of computer science. It gives a foundation in the tools used in computer science and prepares students for further study in computer science while utilizing JavaScript as its primary programming language of choice.

TEACHING STRATEGIES:
Students will use the Codecademy online platform (https://codecademy.com) as their main source of learning. This course will consist of video lectures, daily programming exercises, coding assignments, regular quizzes, and projects. One major element of the content is the Code-Along exercises. During these exercises students will follow along (code along) with the instructor as they code. By coding in small chunks, the student will be able to work through new topics incrementally and work towards being a skilled user of the programming language. As the student progresses through these coding techniques, they may be asked to combine them in longer exercises that will help build a deeper understanding of computer science and programming. Online quizzes and tests give students feedback on their progress.

COURSE OBJECTIVES:
Students who successfully complete this course will be able to:

- Have the basic technical vocabulary of computer science.
- Understand basic principles of thinking and solving problems with computers and computation.
- Be able to use fundamental elements of computer programs, such as commands, conditionals, and loops.
- Implement JavaScript specific data types, built in methods, and variables.
- Use conditionals to control the flow of a computer program
- Construct functions and pass data through them
- Identify global and block-level scope in JavaScript
- Use arrays to store lists of data
- Use loops to execute blocks of code multiple times

- Understand what iterator methods are and how to use them
- Build various JavaScript projects
- Build simple front-end websites with the use of HTML and CSS markup languages.

STUDENT GRADING:
Student grades will be based on practice activities, daily assignments, quizzes, tests and overall classroom behavior. A traditional grading system will be used:

90-100% = A
80-89% = B
70-79% = C
60-69% = D
59% and below = F

CLASSROOM EXPECTATIONS:
Student grading notwithstanding, all students must show respect to other classmates, instructors, and their property, as well as the classroom and its property. Students who display disruptive behavior, willfully damage property, use foul language, act defiantly, or other inappropriate behavior will be considered to have shown disrespect. Each incident of disrespectful behavior will be documented and discussed to help determine the student's ongoing success or failure in the classroom.

Consider this: In the workplace, employers will not tolerate any type of behavior that will disrupt the successful operation of their organization. This means that disrespectful and disruptive employees, regardless of how skilled or productive they may be in their work, can be disciplined by their employer up to and including termination.

Showing respect to others and their property is a simple way to help ensure success in this classroom as well as in the workplace.

A student is considered tardy if they are not in their assigned seat by the designated bell.

Personal cell phones should not be used while in class without direct approval from the instructor. They are to be placed on silent mode during class.

Food or drinks are not allowed in the classroom.

UNIT AND LESSON OVERVIEW:
There are a total of 19 units in this course, with each unit containing one or two lessons, one or two projects, and a quiz. The instructor may assign additional coding projects throughout the school year. Below is a listing of each unit and their included lessons. Please note that unit topics and lessons are subject to change if necessary.

Unit 0: Welcome to JavaScript
Lesson 1: A brief overview of what you will learn in this course

Unit 1: Introduction
Lesson 1: Introduction to JavaScript
Lesson 2: Variables
Project 1: Kelvin Weather
Project 2: Dog Years
Quiz: Introduction to JavaScript

Unit 2: Conditionals
Lesson 1: Conditional Statement
Project 1: Magic Eight Ball
Project 2: Race Day
Quiz: Conditional Statements

Unit 3: Functions
Lesson 1: Functions
Project 1: Rock, Paper, Scissors
Project 2: Sleep Debt Calculator
Quiz: Functions

Unit 4: Scope
Lesson 1: Scope
Project 1: Training Days
Quiz: Scope

Unit 5: Arrays
Lesson 1: Arrays
Project 1: Secret Message
Quiz: Arrays

Unit 6: Loops
Lesson 1: Loops
Project 1: Whale Talk
Quiz: Loops

Unit 7: Iterators
Lesson 1: Higher-Order Functions
Lesson 2: Iterators
Project 1: Grammar Checker
Quiz: Higher-Order Functions and Iterators

Unit 8: Objects
Lesson 1: Objects
Lesson 2: Advanced Objects
Project 1: Meal Maker
Project 2: Team Stats
Quiz: Objects

Learning Hypertext Markup Language

Unit 9: Elements and Structure
Lesson 1: Introduction to HTML
Lesson 2: HTML Document Standards
Project: Fashion Blog
Quiz 1: HTML
Quiz 2: HTML Document Standards

Unit 10: Forms
Lesson 1: HTML Forms
Lesson 2: Form Validation
Project: Form a Story
Quiz: HTML Forms

Unit 11: Semantic HTML
Lesson 1: Semantic HTML
Project: New York City Blog
Quiz: Semantic HTML

Learning Cascading Style Sheets

Unit 12: Syntax and Selectors
Lesson 1: Setup and Syntax
Lesson 2: Selectors
Project: Healthy Recipes
Quiz: Setup and Selectors

Unit 13: Visual Rules
Lesson 1: Visual Rules
Project: Olivia Woodruff Portfolio
Quiz: Visual Rules

Unit 14: The Box Model
Lesson 1: The Box Model
Lesson 2: Changing the Box Model
Project: Davie's Burgers
Quiz: The Box Model

Unit 15: Display and Positioning
Lesson 1: Display and Positioning
Project: Broadway
Quiz: Display and Positioning

Unit 16: Colors
Lesson 1: Color
Project: Paint Store
Quiz: Color

Unit 17: Typography
Lesson 1: Typography
Project: Typography
Quiz: Typography

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HELP AND SUPPORT:
This class will be challenging! But my promise is to support you in your success in learning the basics of Computer Science and the JavaScript programming language. Please let me know right away if you are having any trouble with this class.

Please initial and sign below

_____ I have this entire document and fully understand what is expected of me in class.

Student Signature: _____

Parent / Guardian Signature: _____