Course Title: Computer Science Tools and Web Integration

Course #: 1470-1471

Course Description:
Semester 1 - This course is designed to introduce the student to the principles of computer programming, with a focus on object-oriented design and implementation. Students will learn how to approach everyday problems and tasks from a programmer's perspective. The class will focus on program design, implementation in JavaScript, algorithm analysis, standard data structures, and object-oriented programming design. Software development principles such as documentation, coding styles and testing principles are covered in this course.

Semester 2 - This course will focus on building functional websites using the WordPress platform. Students will take a hands-on, problem-solving approach to the basics of web design, self-hosting vs cloud hosting, graphics creation using Photoshop and online software, the purpose and use of specific pages in a menu, and basic digital marketing ideas.

UC/CSU Approval: “g” approved

Grade Level: 10-12

Estimated Homework Per Week: 1 hour per week
This is a general guideline for planning and scheduling purposes. A student’s ability level may affect actual preparation time needed.

Prerequisite: None

Recommended Prerequisite Skills: Problem solving skills, creativity, organization

Course Grade Scale:
Tests/Quizzes: 35%  
Homework & Classwork: 50%  
Final Assessment: 15%

Major Assessments/Units/Topics:
Assessments per unit: 1-2 Quizzes, 1 Unit Test, In class Activities, Programming Projects

Unit 1: Computers and The Internet
- **The Internet**
  - The Internet Protocol Suite
  - Domain Name System
- **Encryption and Security**
  - Simple Encryption
  - Encryption with Keys
  - Asymmetric Encryption
- **Introduction to Computing**
  - Computing Tasks
  - Selecting Hardware
  - Interfaces
  - Specialized Hardware

**Unit 2: Spreadsheets & Data Processing**
- **Excel**
  - Excel User Interface
  - Formatting Cells
  - Basic Math
  - Creating Charts and Graphs

**Unit 3: JavaScript Programming**
- **The Basics of Programming**
  - Definition of a Scripting Language
  - Syntax and Key Words
  - Data Types
- **JavaScript**
  - Variables and Constants
  - Functions
  - Arrays
  - Loops
  - Conditional Statements
  - Objects
- **Web Games**
  - JavaScript and Web Graphics
  - Developing with AppLab

**Unit 4: HTML & CSS**

**Unit 5: Building Your Website**