Computer Science II-Special Topics

Special Topics is an extended experience designed to address the advancement and specialization of computer science careers allowing schools to provide a specialized course for a specific computer science workforce need in the school's region. It prepares students with the knowledge, skills and attitudes essential for working in the field of computer science. Course standards and curriculum must be tailored to the specific computer science specialization.

This course must prepare students for advancement in this career field and should provide students with opportunities for certification or dual credit.

- Recommended Grade Level: 11, 12
- Required Prerequisite: Computer Science I
- Credits: 2 semester course, 2 semesters required, 1-3 credits per semester, 6 credits maximum
- Curriculum: iDew.org.
- Language: HTML, CSS, JavaScript.

Requirement: Chromebook or laptop, windows 10, Internet connection.

Projects:

Semester 1: Trivia App project

Semester 2: Video games project

Computer Science II: Jumpstart Python

Students will learn to write in one of the world's premier programming languages, using an innovative hardware microcomputer and challenging, relevant projects. This course will establish a robust foundation in computer programming and teach good coding habits from the start.

- Recommended Grade: 11, 12
- Prerequisites: AP Computer Science Principle or Computer Science I, Algebra II
- Credits: 1 semester course
- Curriculum: CodeSpace
- Language: Python
- Requirement: Chromebook or laptop, windows 10, Internet connection.

Content

Unit 1: Getting Started (6 hours)

Students will learn the basic of coding in Python

Unit 2: Putting it All Together (12 hours)

Students will synthesize skills to create more complex programs

Unit 3: Using Inputs and Outputs (12 hours)

Students will use micro:bit sensors to create programs with real-world applications

Unit 4: Interactive Physical Computing (15 hours)

Students will creat interactive projects that involve interactions between users and sensors as well as wireless "Internet of Thing" networking

Computer Science II: Codebot Python

This curriculum module covers the fundamentals of Python programming as students apply each new coding skill and concept to engaging projects with CodeBot. This 'bot puts the focus on coding, with built-in sensors and programmable controls for endless projects and learning opportunities.

- Recommended Grade: 11, 12
- Prerequisites: AP Computer Science Principle or Computer Science I, Algebra II
- Credits: 1 semester course
- Curriculum: CodeSpace
- Language: Python
- Requirement: Chromebook or laptop, windows 10, Internet connection.

Content
Unit 1: Getting Started (7 days)

Students will learn the basics of coding in Python

Unit 2: Inputs and Outputs (10 days)

Students will learn how to use Codebot sensors

Unit 3: Get Moving (15 days)

Students will learn how to optimize the Codebot sensors and motors

Unit 4: Synthesize (10 days)

Students will learn how to use sensor data and botservices to synthesize all they've learned