Computer Science I

Computer Science I introduces the structured techniques necessary for the efficient solution of business related computer programming logic problems and coding solutions into a high-level language. The fundamental concepts of programming are provided through explanations and effects of commands and hands-on utilization of lab equipment to produce accurate outputs. Topics include program flow-charting, pseudo coding, and hierarchy charts as a means of solving problems.
The course covers creating file layouts, print charts, program narratives, user documentation, and system flowcharts for business problems; algorithm development and review, flowcharting, input/output techniques, looping, modules, selection structures, file handling, control breaks, and offers students an opportunity to apply skills in a laboratory environment.

- Recommended Grade: 10, 11, 12
- Prerequisites: Introduction to Computer Science
- Credits: 2 semester course, 2 semesters required, 1-3 credits per semester, 6 credits maximum
- Curriculum: CodeHS.org.
- Language: HTML, CSS, JavaScript.
- Requirement: Chromebook or laptop, windows 10, Internet connection.

Content

Unit 1: Intro to Programming in JavaScript with Karel the Dog (3 weeks/15 hours)
Unit 2: Karel Challenges (1.5 weeks, 7 hours)
Unit 3: Cybersecurity (7 weeks, 35 hours)
Unit 4: Javascript & Graphics (1.5 weeks/7 hours)
Unit 5: Graphics Challenges (1 week, 5 hours)
Unit 6: JavaScript Control Structures (3 weeks/15 hours)
Unit 7: Control Structures Challenges (1 week, 5 hours)
Unit 8: Functions and Parameters (2 weeks, 10 hours)
Unit 9: Functions Challenges (1 week, 5 hours)
Unit 10: Animation and Games (3 weeks, 15 hours)
Unit 11: Animations Challenges (1 week, 5 hours)
Unit 12: Project: Breakout (2 weeks, 10 hours)
Unit 13: Final Project (2-4 weeks, 10-20 hours)