

Kennewick High School
Principles of Computer Science
Syllabus
Marc Long

Course Description:

This year-long course is an introduction to computer science, intended for the student looking for an exposure to computer science. The course exposes students to the secrets of computer hardware and provides students the opportunity to experience the satisfaction of writing software. Students will pursue practical tasks such as maintaining their personal computers and setting up a wireless network that will require a team effort. Students explore programming concepts using Excel, Game Maker, Sumobots, and a virtual world. This course trains students to create computer-generated graphics, develop a computer game, program a sumobot, and other projects.

At Course Completion

After completing this course, students will be able to:

- Create and maintain a blog
- Use the Logo programming language to create:
 - simple shapes using the basic commands
 - procedures making more complex scenes
 - procedures where variables are passed
 - code with control structures (if and loops)
 - code with recursion to make fractals
- Create programs that are modular
- Use the GameMaker programming environment to:
 - Create resources for a game
 - Create games with objects and events
 - Make game modifications
 - Create and design a game from scratch
 - Use debugging skills to fix program problems
 - Analyze program descriptions and plan the development of a game
- Build a sumobot with a partner
- Code the sumobot with a partner
- Compete for prizes in the annual sumobot competition
- Write a basic VBA program in Excel
- Identify the basic hardware that makes up a computer
- Use Web 2.0 applications (Skype, VoiceThread, Dropbox, etc.)
- Learn the basics of how information moves across a network
- Set up a wireless router for home use

Grading and Assessment

Students will be graded upon daily work, labs and tests. Students may view the website below for the weighting and grade scale.

Prerequisites

This is a first experience for students hoping to explore the many facets of computer science. Most students enter this course without any prior experience.

Credits

Students completing the course will earn 1.0 credit of Occupational Ed or 0.5 credits Math and 0.5 credits Occupational Ed.

Student Leadership

Students are encouraged to participate in Robotics Technology And Computers. Students in the classroom will also be expected to work with others in a cooperative setting.

Employability

This class will prepare the student to pursue higher level classes at KHS. Eventually, a student could receive a degree in the field of computer science or get a job as a computer technician.

Classroom Expectations

<http://kehs.ksd.org/Classes/CompSci/vb/Publish/index.htm>

Principles of Computer Science Classroom Website

<http://kehs.ksd.org/Classes/CompSci/principlesofcs.htm>

Intellectual Property Statement

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