

Introduction to Computer Programming

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Course Syllabus

General Course Philosophy/Overview: It's no secret that computer science is going to continue to grow as a large part of society. Whether or not students are directly involved in computer science as an occupation, simply being a "digital citizen" requires some knowledge of how computers work. As such, this course exposes students to the fundamental principles and concepts of computer science and programming. Students will learn to code through game design, project completion, independent projects, and pair programming. The emphasis of student's grades is placed on coding, however, small quizzes and tests will also be given to assess student learning. This course serves as a foundation course for AP Computer Science.

General Weekly Structure: In general, each week follows this progression. Time is given in class to complete exercises and projects. However, some additional time may be needed to finish projects. As of now, all necessary software is free and easily accessible to students at home. However, if a student needs additional lab time at school, please have them talk to me directly.

Monday	Tuesday	Wednesday	Thursday	Friday
Introduction of new concepts	Introduction of new concepts and pair programming	Weekly lab	Weekly lab	Lab Assessment and/or Computational Problem Solving

Grade Composition

Assignments (85% of Grade): A lab is composed of short exercises and projects. Labs will be given with the presentation of new material. The goal is that these labs will be completed in class (usually Wednesday and Thursday). Depending on the language being learned at the time, submission requirements will vary. Projects are intended to extend the concepts practiced in the shorter exercises and will be assigned after mastery of a concept. The projects try to involve game design (such as Pong). Student work will be assessed when posted on their own personal website.

Exams (15% of Grade): Small quizzes and tests will be given to help assess student understanding of material.

Independent Project: Advanced students have the opportunity to work on an independent project after they finish the regular course content. All independent projects must be approved by the instructor before they are started and only worked on in class when appropriate

Plagiarism

Unless otherwise specified, students are expected to submit programs that they developed on their own. However, students are encouraged to use all available resources (i.e. the internet, classmates, instructor). If a student uses code that they did not directly produce, they must cite the source as a comment within the code. If there is a question about if something is acceptable use, please ask.

Online Resources

We will use two online resources during the year. The first is [school loop](#). All assignments, calendars, and exams will be posted here. Grades will be updated regularly. I encourage all of you to actively monitor your grade and please don't hesitate to contact me if you have concerns or questions about your grade. Second, we have a course website, <http://llhscp.com/index.html>, which has assignments, resources, and course information.

Tentative Course Progression

As students come to the class with different levels and abilities, flexibility will always be built into exercises and projects. The first two weeks or so will be scheduled, after this the class will be self-paced for the most part.

Introduction to CS and Procedural Programming

- Overview of computer programming (procedural vs. object oriented programming)

- Intro to Web Development

 - Basic HTML

 - Basic CSS

 - Code Academy

 - Neocities Website

- Java programming

 - Printing to the console

 - Variables (int, string, double, boolean)

 - If Statements

 - While Statements

 - Do-While Statements

 - For Statements

 - Basic Graphics

 - Functions

 - Nested Loops

 - File Input/Output

 - Arrays

 - Sorting

 - And More...

Materials

Students are encouraged to keep a binder for this course. However, most of the materials will be provided electronically. Students may use their own laptops in class if they would like, however, the district technology use expectations still apply (see below). **Students should also bring headphones.** We will sometimes watch resource videos or use audio in programs.

Technology Use

The use of technology is critical to this course. The following is taken directly from the AHS Student Handbook (emphasis added):

*"The goal of the AUHSD is to prepare every student to excel and contribute in a global society. To this end, AUHSD is dedicated to the use of technology as a tool to enhance educational excellence by facilitating resource sharing, innovation, and communication. Specifically the use of the internet provides opportunities to access a wide variety of information, reference materials, and educational resources previously inaccessible. In addition, the district uses an online community system to enhance the learning environment. Signature of the student and guardian are required prior to accessing the district's information and Blackboard systems. **The use of the information system and access to the Internet is a privilege, not a right. Any intentional violation of this AUP may result in the loss of the user's network access, disciplinary and/or legal action, including suspension or expulsion from District schools, and/or criminal prosecution by government authorities.** The District intends to cooperate with the investigation of any legitimate law enforcement agency should any user action on the network lead to such an investigation. Personal Responsibility: All rules of conduct in the Board Policy and Student Handbooks apply."*

This may seem like a lot to remember, but if you keep the following in mind whenever you are working with technology at LLHS, you should be fine.

You do NOT own the technology you are using. Do not treat it as you would your own personal technology. Further, you are using the district's internet connection, bandwidth, etc. Even if you bring your own technology (i.e. laptop), if you use a district connection, all district policies still apply.

Extra Help:

Office hours will be at lunch and after school on specific days. These days will be announced very soon after school starts.

Revised 8/18/2015