

2019-2020 Advanced CS Topic & Projects Syllabus

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Overview

Welcome to Advanced CS Topics & Projects! In this class, you'll learn more advanced CS topics based on what we learned in AP Computer Science A. We'll be using the same textbook, Building Java Programs, and cover data structures, file manipulation, graphics and advanced algorithms that enable us to write more complex programs. The topics will be similar to the University of Washington programming course CSE 143. The second half of each semester will be the "projects" portion, where teams or individuals will write a specification for a project, then implement the project.

Classroom Expectations

Student Behavior

Advanced CS Topics & Projects is a **CTE** (Career and Technical Education) course, and as such, there are certain expectations that go beyond what you might have in any other class. CTE courses have a focus on *career skills* and *professionalism*, and strive to give a *real-world* experience. Because of this, **professionalism** is a major point of emphasis. Consider this classroom to be like a workplace—you have just been hired by a software company, and this classroom is your office. Treat your coworkers (classmates) and your managers (instructors) with the respect you would expect to show in a work environment.

Congratulations, you are now an employee of the Liberty High School Software Development Company!

PURSUE EXCELLENCE	ACT WITH INTEGRITY	TAKE CARE OF EACH OTHER
<ul style="list-style-type: none">-Participate to the best of your ability-Come prepared and ready to learn-Follow through with assigned tasks-Take risks and embrace that failure is a part of success-Be willing to ask for help-Meet established deadlines	<ul style="list-style-type: none">-Be accountable for your choices-Have a growth mindset-Use technology for the purpose of learning-Present yourself honestly-Take pride in your work-Produce your own work	<ul style="list-style-type: none">-Look for strengths in all people-Practice empathy-Respect personal differences-Embrace and encourage collaboration-Advocate for each other

So long as it is not abused, students will be given the freedom to manage *their* educational experience in whatever way works best for them. Students are expected to take responsibility for their own actions and decisions and to accept the consequences, both positive and negative, of the choices they make.

Use of Technology

Students are allowed and encouraged to use technology in class, subject to the following rules:

- Classroom computers should be used for AP Computer Science-related work. In particular, you should not use the computers to check email, look at your grades, or do work for other classes **without permission from the course staff**. When given approval, students may use the computers for other academic purposes if they have completed their current assignment. Classroom computers **should never be used for playing games, accessing social media, or other non-academic activities**.
- Personal electronics (cell phones, MP3 players, iPads, etc.) - Use of personal electronics are allowed in this class with the following stipulations:
 - Personal electronics will only be used for AP Computer Science related functions. Similar to “use of computers”, engaging in social media, texting, personal email, games, etc is not allowed.
 - Music players can be used with one headphone in during lab work times only, must not disrupt others and be at a low enough volume to hear the instructor and emergency notifications.

Absence Policy

It is **YOUR RESPONSIBILITY** to find out what was covered on a day you were absent and make up the required work. If you do not do so per the timeline described in the student handbook (one day extension per day of excused absence), you may be subject to penalties for late work.

Coursework

Coursework will fall into one of two categories:

1. Projects/Assessments (80% of final grade)

There will be several large projects over the course of the semester. These will usually be assigned over one week or more and will typically have graded checkpoints along the way to ensure you are making adequate progress. Some in-class time will be provided to work on projects, but you should expect to do a significant portion of your work at home. Unless otherwise indicated, projects (including checkpoints) are due *no more than five minutes after the start of class* on the assigned due date.

Tests will be given at important points throughout the semester, including at the end of each unit. Quizzes will be given at regular intervals. Assessments may or may not be announced, and all assessments are closed-book and closed-notes unless otherwise indicated. Assessments must be completed within a single class period— **you will not be allowed to return to finish an assessment after school or at lunch**.

2. Classwork/Homework (20% of final grade)

Whereas projects are large, multi-week assignments, classwork and homework are smaller assignments expected to be completed within a week or less. Classwork exercises are due *at the end of class* the day they are assigned. Homework is due *at the start of class* on the assigned due date.

Grading

Each assignment will be accompanied by a rubric indicating what aspects of the assignment will be assessed and the relative values each will be given. These rubrics should provide complete information about how assignments will be graded, and as such, grades should never be too surprising. Read the rubrics carefully and ask questions when they are published to ensure you fully understand the requirements of the assignment.

Quarter and semester grades will be computed using a process to be determined. This process will be announced as soon as it is finalized, and well in advance of the midpoint of the first grading period.

Materials

Students will be expected to bring to class each day:

- Dedicated notebook for this class.
- Writing implements.
- Red ink pen.

Textbooks

We will be using the book **Building Java Programs: A Back to Basics Approach, Third Edition**, by Stuart Reges and Marty Stepp.

Approximate Course Scope and Sequence (subject to change)

Unit #	Unit Title	Textbook Sections	Weeks
Semester 1			
1	Introduction to Graphics	Chapter 3G	1
2	File Processing	Chapter 6	1
3	Java Collections Framework	Chapter 11	2
4	Stacks and Queues	Chapter 14	2
5	Defining Classes	Chapter 15	2
6	Student-Selected Project	N/A	8

