

2022-2023 AP Computer Science A Syllabus

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Course Information

AP Computer Science A is an introductory college-level computer science course. It is both a course for potential computer science majors and a foundation course for students planning to study in any STEM field. Students cultivate their understanding of coding through analyzing, designing, writing, and testing code as they explore concepts like modularity, variables, and control structures.

Textbooks:

- *CSAwesome e-book*: <https://csawesome.runestone.academy/runestone/books/published/csawesome/index.html>. This e-book is available for free and will be our primary resource.
- *Java Concepts Early Objects (Cay Horstman) – 8th edition – ISBN-13: 978-1119194453*. This book is provided by the school and must be returned at the end of the year.
- *Barron's AP Computer Science A (10th edition) – ISBN-13: 978-1506264158 (available on Amazon)*. It is highly recommended that you purchase this test prep book by the end of September.

Curriculum:

CSAwesome is a College Board endorsed curriculum for AP Computer Science A, an introductory college-level computer programming course in Java.

Course Description:

Fundamental topics in this course include the design of solutions to problems, the use of data structures to organize large sets of data, the development and implementation of algorithms to process data and discover new information, the analysis of potential solutions, and the ethical and social implications of computing systems. The course emphasizes object-oriented programming and design using the Java programming language.

Course Objectives:

- Understand and apply the main principles of object-oriented software design and programming: classes and objects, constructors, methods, instance and static variables, inheritance, class hierarchies, and polymorphism.
- Learn to code fluently in Java in a well-structured fashion and in good style; learn to pay attention to code clarity and documentation.
- Learn to use Java library packages and classes within the scope of the AP Java subset.
- Understand the concept of an algorithm; implement algorithms in Java using conditional and iterative control structures and recursion.
- Learn to select appropriate algorithms and data structures to solve a given problem.
- Learn common searching and sorting algorithms: Sequential Search and Binary Search; Selection Sort, Insertion Sort, and Merge Sort.
- Understand 1- and 2-dimensional arrays and the ArrayList class, and use them appropriately in programming projects.
- Acquire skills in designing object-oriented software solutions to problems from various application areas.
- Discuss ethical and social issues related to the use of computers.
- Prepare for the AP exam in computer science.

Suggested materials:

The following materials are always needed: A 1-inch thick 3-ring binder to organize your work, ruled paper, sharpened 2B pencils or mechanical pencils, erasers. If you need help acquiring these materials, please speak with me, your counselor, or an administrator. The school's computer lab will be available to you for all your lab work. However, if you wish to do your lab projects on a personal laptop or computer, on which you can continue working at home, you will need to install Eclipse Version: 2021-06 (4.20.0) (Build id: 20210612-2011). See

<https://projects.eclipse.org/projects/eclipse/releases/4.20.0>

CSAwesome, AP Classroom, Google Classroom, and Infinite Campus:

We will be using CSAwesome, AP Classroom, Google Classroom (GC), and Infinite Campus (IC) to communicate about assignments.

Grading Standards:

Your academic grade is determined by the weighted categories and factors listed below. Grades and assignments will be posted online on IC and GC. Note that your grade on IC may not include the most recent work and may not show the final Semester grade until submitted to the Registrar. There will be NO ROUNDING.

Assignments – Classwork, Homework, Notes, Practice, Participation, and some Labs	25%		
Assessments – Quizzes, Tests, Lab Quizzes/Tests, Semester Final	75%		
A+ = 97.00% – 100%	A = 93.00% – 96.99%	A- = 90.00% – 92.99%	
B+ = 87.00% – 89.99%	B = 83.00% – 86.99%	B- = 80.00% – 82.99%	
C+ = 77.00% – 79.99%	C = 73.00% – 76.99%	C- = 70.00% – 72.99%	
D+ = 67.00% – 69.99%	D = 63.00% – 66.99%	D- = 60.00% – 62.99%	F = < 60.00%

A means “Above and beyond.” Students who do their best on all regular assignments and complete them on time are “Basically good.” To earn an A, a student must be basically good (receiving a B) and willing to go above and beyond by completing an advanced project. These projects must show outstanding effort. An okay project may take you from a B to a B+ but won’t be counted toward an A. Students getting less than a B must bring their grade up by redoing assignments or turning in missing assignments, before any points will be awarded for an advanced project.

General Information Regarding Assignments - Classwork & Homework:

- Assignments will first be posted on CSAwesome, AP Classroom, and GC; & later on IC to record grades.
- Any handouts that are required for an assignment will be distributed on paper or posted on GC.
- We will be following the homework policy listed on the [AHS Policies and Procedures](#) page.

Notes:

- I highly recommend that you to take notes on ruled binder paper or in a notebook.
- Although you will not be submitting your notes, you will find them useful to review before tests.

Assignments, Projects, Laboratory work:

- Most of the online assignments will be done on the CSAwesome online platform and in AP Classroom.
- There will also be some hand-written assignments, especially for practice with Free Response Questions.
- The course has a substantial lab component and will go *well beyond* the APCSA minimum requirement of “20 hours of hands-on, structured lab experiences to engage students in individual or group problem solving”.
- Lab projects will be done on the Eclipse Java Integrated Development Environment and some other online resources.
- Students will design solutions to problems, express their solutions precisely using Java, test their solutions, identify and correct errors that may occur, and compare possible solutions.
- The assignments and projects will increase in complexity as students gain more experience and confidence in their designs and implementations.
- All assignments, projects, and lab work (paper and online) will be graded for completion and correctness.

Guidelines for Assignments on Binder Paper:

- All your work should be done in pencil (not pen) on wide-ruled (preferred) or college-ruled binder paper.
- Organize your work so that it is neat, clean, and legible (dark enough and big enough to read).
- Write the assignment title, matching the title posted on IC – at the **top center** of the first page.
- Your first & last names, period, & submission date – on the **top right-hand side** of the first page.
- Leave a ¾ inch margin at the top, left, right, and bottom of each binder paper page that you use.
- Write the problem/question number in the left margin, & leave a blank line after the problem/question.
- Box and highlight each **answer**.

Online Submissions:

- Guidelines for online submissions will be provided as needed.

How to submit paper assignments, IF we go into distance learning mode:

- Please make a single PDF file of the whole assignment, containing all the pages of your work, and submit this online via GC. You may create the PDF file using an app such as Tiny Scanner, CamScanner, or DocScanner. Alternatively, create a private Google doc with your images, save the doc as a PDF, and submit the PDF via GC. (Do not submit Google doc files. Only PDFs will be accepted.)

Late Assignment Policy & Assignment Passes

- If your assignment is submitted after the due date or extended due date, you may lose
 - Up to 10% of your earned score if submitted by the date of the test for this unit.
 - Up to 15% of your earned score if submitted by the date of the test for the next unit.
 - Up to 20% of your earned score if submitted beyond the date of the test for the next unit.

Assessments – Quizzes, Tests, and Finals (which counts towards most of your grade)

- Assessments may be given on paper and/or online.
- Each unit will be assessed with one unit test and possibly a quiz.
- The Semester 1 final exam will cover Units 1-6, and the Semester 2 final exam will cover the whole curriculum.
- All assessments must be done in one sitting. You may not leave halfway through and return later to finish it.
- If you know you are going to be absent on a day when an assessment is planned, please plan to do it early.
- Completed paper assessments will stay in the classroom and be made available for review as needed.

Absent Work Policy

- If you are absent, you are responsible for a) catching up with missed assignments by checking on GC and IC; and b) making a plan with me to make up missed quizzes and tests
- Excused absences: due dates for missed assignments will be extended by the # of classes that you missed. Mention both the original due date and extended due date on your paper assignment when you submit.
- Unexcused absences: due dates will not be extended.

Flex Period

You may use Flex periods to

- Make up missed quizzes & tests
- Work with a peer to get/offer help on concepts and problem solving.
- Book time with me 1:1 or in small groups to get help on concepts and problem solving.

Extra Credit Policy

- I do not offer extra credit on an individual basis for the purpose of improving your grade.
- The best way to get a good grade is through steady effort. Review Strategies for Success further below.

Academic Honesty

- Academic honesty must be upheld.
- *Cheating may result in zero credit on the given work, a conversation with the parent, and referral to an administrator.*
- Refer to the [American High School Academic Honesty Policy](#).

Keeping Your Binder Organized

- Your binder must include the following 6 sections with tabs that make each section easy to find.
- Details are provided in the attached Supplies and Binder Organization post in GC.
- Bring your binder to school every day, making sure to keep everything in it until the unit test is done.
- After each unit, transfer all the returned assignments and notes to a binder that you can keep at home until the end of the year, as you may find a need to refer to them during both Semester 1 and 2 Final exams.

Classroom/Learning Expectations

- Be respectful. Respect your teacher, your classmates, and the classroom/learning area. No bullying.
- Be responsible for your supplies. Bring required supplies to class (or physical learning space) every day.
- Be responsible for your learning. Come to class prepared, with an attitude to learn, ready to work independently or collaboratively.
- Ask/answer questions, seek help, participate, contribute to discussions, take notes, and review notes.
- Be helpful. Explain your work to your partner / small group / whole class. We all win if we help each other.
- Be polite and kind. Use appropriate language. If you have any disagreements, express them politely.

Classroom Procedures and School Policies and Procedures

- [AHS Policies and Procedures](#) will apply during school hours.
- Please also go through the [FUSD Parent/Guardian Student Handbook](#).
- The use of electronic listening or recording device is not allowed (see California Education Code 51512).

In-person Classroom Procedures:

- Be on time. Be in your assigned seats before the tardy bell rings, to avoid a tardy on your attendance record.
- Stay in your seats until the end-of-period bell. Do not leave/change your assigned seat without permission.
- Place all electronic devices in backpacks, with cell phones on silent (no vibrate) mode. Calculators are to be used only when instructed. Cell phones may not be used in place of calculators.
- Keep your space clear of food, beverages (except water), and gum.
- Retrieve necessary supplies from your locker and visit restrooms before coming to class. Only if truly necessary, you will be allowed to step out (e.g., a bio-break). You must ask, sign out, sign back in upon returning, and notify me of your return. You may not leave the classroom during the first ten minutes and last ten minutes of class. If there is a *medical need that requires an exception*, please update the syllabus acknowledgement form accordingly.

Online Meeting Norms and Expectations (Relevant only if we go into Distance Learning)

- Please read my [Online Meeting Norms and Expectations](#).

Consequences

- Disruptive behavior and violation of school policies will result in consequences, the nature of which will depend on the type & frequency of the disruptive behavior or violation.
- Consequences could include verbal warnings, confiscation of electronic devices until the end of the day, a call/email to the parent, referral to the Student Resource Center, etc.
- Refer to the [Discipline Guidelines](#) under the AHS Policies and Procedures.

Strategies for Success

- **Well-being:** Take care of your physical, emotional, and mental well-being; this is most important. Sleep / eat / exercise well. Relax. Let me know if you're feeling stressed. Believe in yourself. Focus on and develop your strengths. Strengthen your weaknesses. Do the right thing; when you act with integrity, you have nothing to fear. Focus on the present moment (learn, do your work), rather than the future (grades, etc.)
- **Classroom Habits:** Ask questions; rephrase problems; explain what you know to a peer; use logic; justify your methods; connect ideas; seek help promptly when you need it; offer help to others when they need it; take notes every day.
- **At-home Habits:** Organize your time; stay on top of your work; preview the next lesson.
- **Classroom Resources:** Seek help early from your teacher / peers / peer-tutors – in class or during Flex.
- **At-home Resources:** Use available books & online resources; seek help from peers / tutors; send email.

Note to Parent(s)/Guardian(s) – Ways to Help Your Student Do Well in This Class

AP classes tend to be challenging and this class is not an exception. To help your student do well in this class:

- Help your student create/maintain good, healthy routines at home to ensure physical, emotional, & mental well-being.
- Work with your student to create a welcoming study area at home and support them in keeping it organized.
- Help your student develop time management skills. Encourage them to prepare and plan for multiple projects and/or tests in the same week across all their classes.
- Monitor your student's work via Infinite Campus & Google Classroom to check that they are keeping up with it.
- Celebrate your student's accomplishments regularly. Praise them for their efforts and the skills they've gained through their hard work.
- Set high, yet reasonable, expectations. If your student struggles at any point, believe in them and support them while they extend themselves to push through the struggle. This process builds resilience and stamina.
- Encourage your student to participate in class by asking/answering questions and engaging in discussions with peers.
- Encourage your student to attend Flex sessions to get 1:1 support from a teacher or peer.
- Pay attention to your student's overall course load and extra-curricular activities to ensure that they are not overextended, and guide them towards making good decisions about their overall load.
- When you take care of the present moment (well-being, good routines and habits, etc.), the future (grades, etc.) will manifest naturally. So, be aware of your student's grades without worrying about the grades.
- Please contact me via email with any questions you may have.

This syllabus will be available via Google Classroom. I reserve the right to alter the syllabus for this class if necessary. Any changes will be fully explained to students.

Acknowledgment of Receipt of Mr. Holcomb's AP Computer Science A Syllabus

Student Name: _____

Period: _____

Dear student,

Please review the syllabus with your parent(s)/guardian(s), fill out this form with them, and bring it back to class.

Dear parent(s)/guardian(s),

Please review the syllabus with your student, fill out this form, and send it back to me through your student.

Parent #1 | Guardian #1:

Parent #2 | Guardian #2:

Name: _____

Name: _____

Relationship: _____

Relationship: _____

Email address: _____

Email address: _____

Cell phone: _____

Cell phone: _____

Home phone: _____

Home phone: _____

Work phone: _____

Work phone: _____

Please circle the preferred modes of contact mentioned above.

Does your student have access to a computer (desktop or laptop) at home? YES | NO

What type of internet connection does your student have access to at home? FAST | SLOW | NONE

If your student has one of these, please circle it: Section 504 Plan | IEP (Individualized Education Plan)

Does your student have a special circumstance or medical issue that you would like me to be aware of? Is there any other information that you'd like me to know?

I acknowledge that I have reviewed the syllabus and understand the policies that are outlined in it.

Student signature

I/we acknowledge that I/we have received a copy of the syllabus for the class with Ms. Sangam that my student is enrolled in, have reviewed it, and understand the policies that are outlined in it.

Parent/Guardian #1 signature

Parent/Guardian #2 signature