AP Computer Science Principles, 2019-20

Instructor: Andy Christensen | andychristensen@lwsd.org

Sign below to confirm you have read and understand this document:

Student Name (printed):

Signed: _____

Parent Name (printed):

Signed: _____

Course Description

This course is designed to be equivalent to an introductory college computing course for non-computing majors. In this course students will develop computational thinking skills vital for success across all disciplines. The course engages students in the creative aspects of the field by allowing them to develop computational artifacts based on their interests and STEM-related topics. Students will also develop effective communication and collaboration skills by working individually and collaboratively to solve problems, and we will discuss and write about the impacts these solutions have on their community, society, and the world. Students will take the AP Computer Science Principles Exam, which will be administered on Friday 15 May 2020.

Required Materials

- **Organization:** Students should take notes in a notebook, binder, or composition book, but I will leave it to each student to select a method of organization and pursue it. Some will find this difficult, but discovering what system works best for each class is a college-level skill.
- **Textbook:** There isn't one, though I will use excerpts from different books, websites and other resources. Later in the year, I will recommend resources for those that want more materials to study in preparation for the AP Exam. Those are not required and will not be needed by most.
- **Arduino Microcontroller (Board/Kit): Purchase as required by Ms. Wrenchey no later than 30 September**. We will use these to learn programming in C.
- **PowerSchool:** Our class page is at https://lms.lwsd.org/andychristensen/stem-apcsp-christensen/. I will post projects and other opportunities there, so check it often.

Communication & Office Hours

The best way for a student to reach me is to stop by office hours or set up a separate appointment. The best way for a parent to reach me is to send me email; I will meet parents during office hours only when you have made an appointment, and I will ask your student to attend the meeting as well—most issues are resolved quickly when everyone involved is present. My office hours are held in Room 227. I will return phone calls or emails within 48 hours (usually sooner).

Office Hours (in Room 227)				
Monday	Tuesday	Wednesday	Thursday	Friday
7:00 – 7:30 2:30 – 3:30	7:00 – 7:30 2:30 – 3:30	1:00 – 2:00	7:00 – 7:30 2:30 – 3:30	7:00 – 7:30

Absence & Late Work

My policies for absences and missing assignments conforms to the policies in the Student Handbook. If a student is absent, they have the same number of days they were absent to make up any missed work and to schedule makeups for any missed quiz or test. Other late work will receive up to 80% credit if turned in within two weeks of the deadline.

Grading

Grades are based on total points earned—experience points (XP) and professionalism points. Points are aggregated and each student has ample opportunity to earn points.

The XP system allows students to gain points as they take comprehensive tests and unit quizzes, complete projects, participate in class, and perform other tasks. Each of these will allow students to demonstrate mastery of the material and to earn the grade that they want. In-class assessments will be tailored to mastery of the material learned in the course; additional projects are required to tie into this material or to the field of Computer Science. This also will build student skills in working directly with the instructor and in asking questions and choosing projects that interest the student.

During 1st semester, XP will be available (approximately) as follows:

Tests & Quizzes	Projects & In-Class Work	Other Projects
800	1000	TBD per student—*see page 4 below.*

During 2nd semester, XP will be dominated by preparation for and performance of the Explore Task (research) and the Create Task (programming) required as part of the AP Exam. I will publish the grade table for 2nd semester in January 2020.

Because this is a Career and Technical Education (CTE) class, there will be a second component of each student's grade that will be earned through professionalism—each student will start with 90 points and

- will **gain** points (not to exceed 100) for exceptional behavior (e.g., participation or helping other students that exceeds expectations), and
- will **lose** points for not staying engaged and on-task and for not using screens appropriately.

Grades will be based on exceeding thresholds, as follows:

Grade	Total XP	Minimum Professionalism
A	1800	80
B- / B / B+	1600 / 1660 / 1740	70
C- / C / C+	1400 / 1460 / 1540	60

I use Skyward to record and post grades. I work hard to keep Skyward up-to-date, but I will post grades for an assignment only after I have graded it for all class periods. If a student has a question about the points earned for an assignment, see me during office hours.

AP Exam

Students are expected to take the AP exam in May 2020. It is not required, but the course is taught to prepare students for the exam and, in 2nd semester, significant class time will be spent on projects that are required for the AP exam and will be required for the course. If you have any concerns about the content or requirements for the exam, talk to me. Similarly, if you have concerns about the cost of the exam (about $100), talk to me or to your counselor—support is available if you cannot afford it.

Academic Honesty

All students must understand what constitutes academic dishonesty and refrain from it.

We will talk about academic honesty at the beginning of each semester. Generally, it is academically dishonest for a student to present the work of another student as their own work, but there are a few "bright lines" worth calling out:

- It is academically dishonest to copy another student's code.
- It is academically dishonest to provide code to another student. It does not matter if the other student copies that code or if the "sharer" knows or suspects that the code will be copied—it is the act of sharing actual code.
- It is academically dishonest to type code into another student's computer, **except** on projects where that is specifically allowed (typically pair programming projects).
- If a student is caught in an act of academic dishonesty, it is a further act of academic dishonesty (1) to misrepresent their actions, or (2) to misrepresent or otherwise obscure the scope, number, or identity of participants in the act.
- Ignorance of these rules will not excuse violations of them.

Here is a tabular version of the above:

Can you …	Classmates	Other People	Project Partner
Discuss general concepts with …	✔	✔	✔
Expose your code/solutions to …	✗	✗	✔
View the code/solutions of …	✗	✗	✔
Copy code/solutions from …	✗	✗	✔

All that said, there are plenty of ways to collaborate. I encourage students to help each other—it's a great way to earn points—and to seek help from me and from teaching assistants.

Note to Parents

A big part of the transition to high school and college is learning to interact directly with each instructor to address questions about the academic material, grading and other issues. I prioritize student requests in my office hours. If they have questions or are uncertain about anything, they should talk to me during class or during my office hours.

Parents have access to PowerSchool and can see the course calendar, assignments and other materials. If there are any questions, do contact me, but you will get a faster response and your student will develop the critical skill of advocacy even faster if they work directly with me.

Lastly, many parents have computer science degrees and software development experience. If you do, please feel free to help your student, but (1) do not do the work for them, and (2) focus on enabling them to make the discoveries of what is being taught—create more "a-ha's", don't take them away.

AP Computer Science Principles, 2019-20

Syllabus Supplement, or, *How will I get those "Other" Points?*

The short answer is, there will be points available in class through participation and occasional challenges, as well as through the following projects and activities. Each student may do as many of these as desired, but after doing 5 of them, each additional one must be approved by the instructor.

<table>
<tr><th>Description</th><th>Type / Work Product</th><th>Points (max per)</th></tr>
<tr><td>CS in Current News: choose a regional, national or international news story, summarize the facts, outcome (if any), and significance of the facts and situation.</td><td rowspan="4">At least one slide and 2-3 minutes' presentation to the class.

Provide at least a week's notice before presenting

Provide slide(s) at least 24 hours before presenting</td><td rowspan="4">50-100</td></tr>
<tr><td>CS in History: describe a major event in the history of CS, why it was important to CS and more broadly.</td></tr>
<tr><td>CS in the University: for a top-25 university or a university in Washington State,
(1) describe the CS degree requirements, OR
(2) choose a CS professor and describe the projects that s/he is working on</td></tr>
<tr><td>That's a Spicy Algorithm!: choose an interesting problem (solved or unsolved) in the field of computer science and describe it to the class.</td></tr>
<tr><td>Programming:
(1) Complete additional programming, beyond what is required in class, in the language we are currently working on, OR
(2) Complete the HTML, then CSS, then JavaScript lessons on Codecademy, OR
(3) Complete agreed-upon Python exercises at codingbat.com, OR
(4) Do a project with a DataStructures Buddy that I assign you, OR
(5) Propose and agree on a project with me.</td><td>Outside of class; demonstrate completion to instructor</td><td>Agreed case-by-case with instructor</td></tr>
<tr><td>Extra Quizzes: practice on AP-specific topics (limited retakes OK)</td><td>Online quizzes</td><td>50-100</td></tr>
<tr><td>CS in the Cinema: view Zero Days or another non-fiction film in which CS is a major part. Write one page about it, including a summary of the film, its significance and your reaction or opinion.</td><td rowspan="3">One page written outside of class (make clear the connection to CS)

Instructor must approve films, sites or books not listed at left.</td><td rowspan="3">50-100</td></tr>
<tr><td>CS in the Community: visit
The Living Computer Museum (Seattle, WA),
The Dead Computer Museum (Mountain View, CA),
The SPARK Museum of Electrical Invention (Bellingham, WA),
The Microsoft History Museum (Redmond, WA), or
Another pre-approved, CS-related location/exhibit.
Write one page about it, including a description of what you saw, what was most interesting, and your overall opinion or recommendation.</td></tr>
<tr><td>CS in Books: read a pre-approved, CS-related book or paper (e.g., Algorithms to Live By or Blown to Bits); write one page about it, including a summary, your favorite parts and your opinion.</td></tr>
<tr><td>Other: propose a project to the instructor and, upon approval, complete it!</td><td colspan="2">Agreed case-by-case with instructor</td></tr>
</table>