

MOBILE COMPUTER SCIENCE PRINCIPLES

Syllabus

Instructor: Mrs. Schroeder
Required: Grade 11-12
Prerequisite: None
Length of course: Year

Required Components: 7 units
Online Portfolio
Reading – “Blown to Bits”
2 practice Performance Tasks (Create and Explore)
2 official Performance Tasks (Create and Explore)
2 exams throughout the year with reviews for each exam

Course Description: This course is based on the curriculum of the Mobile Computer Science Principles Project (MobileCSP), an effort funded in part by the National Science Foundation to increase awareness of and enrollment in the field of computer science. The curriculum is based on the College Board's emerging Advanced Placement (AP) course in computer science. Students learn computer science by building socially useful mobile apps for the Android operating system. In addition to programming and computer science principles, the course is project-based and emphasizes writing, communication, collaboration, and creativity.

Text: Reference Text: App Inventor 2: Create Your Own Android Apps. David Wolber, Hal Abelson, Ellen Spertus, and Liz Looney O'Reilly Media, Inc., 2014 (~\$25 new on Amazon or view the Free Pre-publication Draft)

Blown to Bits: Your Life, Liberty, and Happiness After the Digital Explosion. Hal Abelson, Ken Ledeen, Harry Lewis. Addison-Wesley, 2010 (Available via Free PDF Download)

Programming Environment: App Inventor for Android (ai2.appinventor.mit.edu), a free online software platform, is used in this course to build mobile apps for Android devices.

Online Resources: The complete curriculum is hosted online and free of charge:
<https://ram8647.appspot.com/mobileCSP>.

SchoolWay: To subscribe to this class use WayCode – cip93r

Course Outline:

The units that follow interweave the six CS Principles *Computational Thinking Practices* of Connecting Computing, Creating Computational Artifacts, Abstracting, Analyzing Problems and Artifacts, Communicating, and Collaborating with the seven CS Principles *Big Ideas* of Creativity, Abstraction, Data, Algorithms, Programming, Internet, and Global Impact.

- ❖ Unit 1 - Getting Started: Preview & Set up
- ❖ Unit 2 - Introduction to Mobile Apps & Pair Programming
- ❖ Unit 3 - Creating Graphics & Images Bit by Bit
- ❖ Create - Programming Performance Task #1 (Practice)
- ❖ Unit 4 - Exploring Computing: Animation, Simulation, & Modeling

- ❖ Exam #1
- ❖ Explore - Impact of Computing Innovations Performance Task #1 (Practice)
- ❖ Unit 5 - Algorithms & Procedural Abstraction
- ❖ Explore - Impact of Computing Innovations Performance Task #2
- ❖ Unit 6 - Using and Analyzing Data & Information
- ❖ Unit 7 - Communication Through The Internet
- ❖ Create - Programming Performance Task #2
- ❖ Exam #2

Students will document their work on their portfolios. That is, they will post answers to reading questions, write-ups of hands-on tutorials, written responses to assigned readings, and documentation of creative programming projects on their personal portfolio page. Each student will create a portfolio using Google sites (<https://www.google.com/sites/overview.html>). The portfolios will contain a full record of what the students have done in the course. Portfolios will be graded periodically throughout the duration of the course.

There will be two (2) creative programming projects in which students will use lab time to work both individually and collaboratively (in pairs) to create a socially useful mobile app that they propose (pitch), design, and implement.

- One of these will be a practice for the College Board’s Create Performance Task.
- The second will be the official College Board Create Performance Task.

There will also be two (2) written research projects that students will work on individually. These research projects will focus on examining a computing innovation that has impacted society.

- One will be a practice for the Explore Performance Task.
- The second will be the College Board’s Explore Performance Task.

There will possibly be periodic quizzes, typically to wrap up the end of each unit.

Grading:

A	93 %	C	73
A-	90	C-	70
B+	87	D+	67
B	83	D	63
B-	80	D-	60
C+	77	F	0

Homework/Quizzes/Tests - 10%

Reflections – 20%

Projects - 25%

Performance Tasks – 25%

Midterm/Final Exam – 10%

Participation - 10%

You will receive four (4) points for each day. However, points can be deducted if student is disruptive/off task (this could occur more than once).

No plagiarism – any piece of a project that is determined to be plagiarized will receive a zero

Classroom Expectations:

- Respect yourself, faculty and your peers
- Bring all required materials for class
- Raise your hand and wait your turn
- Use active listening
- Come ready to learn
- Use appropriate language
- Be on time
- Respect personal and school property
- The bell tells the teacher to dismiss you
- No food, candy or drinks
- Complete all assignments on time
- Ask questions
- All electronic devices out of sight/hearing

Discipline Policy:

1st offense - Teacher detention/ Phone call home

2nd offense - Written referral/Detention with Mr. Wormley

3rd offense - Referred to Administration