

Spaulding High School
Spring 2022 Computer Science Syllabus

Course Title: Computer Science

Department: Mathematics

Teacher's Name: Chris Moran

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Course Description:

This course introduces students to computer science history and concepts such as computer architecture, programming and problem solving. Students will use object-oriented and procedural programming as well as live coding. Students will be expected to develop programs and products that function as expected after a process that includes planning, developing, collaborating and revising. An emphasis on communication skills will help with peer review.

Projects will include, but aren't limited to:

- Live coding music performances
- Solving math problems with programming
- Interactive games
- Productivity software
- Hardware/Microcontroller Physical computing

Practice:

Class time will include plenty of hands-on programming opportunities supplemented by direct instruction on specific programming skills, methods, and language. Students will be expected to code away from class as well. The classroom should be a collaborative environment where students ask questions and share their ideas and suggestions. Projects will include solo projects, small teams and possibly large or even full group programs using each students' strengths in appropriate roles, giving opportunities for project management practice. Not everything you use or learn will come from class lectures.

Assessment/Reassessment:

Grades in this class will be related to how projects exemplify the following 5 standards. There aren't formal assessments/reassessments, but most projects will have opportunities to be modified or improved. Course standards (or variations of) will include:

1. Clear and Effective Communication
 - a. Is your code understandable?
 - b. Can you explain what is happening in others' code?
2. Informed and Integrative Thinking
 - a. Are you efficiently using your resources?
 - b. Are you researching alternative ideas to aid your design?
3. Creative and Practical Problem Solving
 - a. Are you being creative in general or are you trying unique ideas?
 - b. Can you solve novel problems or mundane problems in novel ways?
4. Self Direction and Responsibility
 - a. Do you maintain forward progress and deadlines on projects without intervention?
 - b. Do you seek appropriate help when stuck?
5. Effective Programming
 - a. Does your program work as intended?
 - b. Is your code efficient?

Course Expectations:

- Students will be expected to work in groups and complete assignments as a team.
- Students will be expected to share their ideas and work publicly and participate in classroom discussions.
- Students will maintain virtual space where their code can be shared and evaluated by me and potentially classmates.
- Students are expected to document their iterative work
- It is the student's responsibility to make a plan for learning missed concepts or standards.
- Cell phones should not be used for personal uses, but at times might be included in the classwork or possible integration in accomplishing tasks. Do not abuse the opportunities when they arise.
- Plagiarizing computer code is no different than plagiarizing an essay.

Materials/Resources:

- **BRING YOUR CHARGED CHROMEBOOKS EVERY DAY**
- Pencils and erasers: Every day.
- Students must join the google classroom for this course using the *class code*: **mnjulp2**

Grading**Some interpretations are at teacher discretion**

- **Standards:**
 - Beginning: Fewer than the majority of instances are Developing
 - Developing: Fewer than the majority of instances are Proficient or better, or some are below Developing
 - Proficient: Majority of instances are Proficient with none below Developing
 - Exemplary: Majority of instances are Exemplary, with the rest being Proficient
- **Course:**
 - Beginning: Fewer than 3 standards are Proficient or better
 - Developing: Fewer than 3 standards are Proficient or better, or some are below Developing
 - Partially Proficient: At least 3 standards are proficient and none are below developing
 - Proficient: All standards are proficient
 - Partially Exemplary: At least one standard is Exemplary and all others are Proficient
 - Exemplary: At least 3 standards are Exemplary and all others are Proficient

Progress Reports are released every 3 weeks. Students should expect to be marked below if they are missing prior projects or have a relatively scaled standing of Developing in the course at that time.

This syllabus is subject to revision