Computer Science 30S Course Outline

Date: September 2020 – January 2021

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**Resources:**

* Course material for in-class and remote learning can be found on Mrs. Latimer’s class weebly page
* Processing programming language: [tutorial package](https://processing.org/tutorials/)
* Processing programming language: [example package](https://processing.org/examples/)
* Software to be used (free):
  + Processing V.3: [download link](https://processing.org/download/)
* Extra Online Resources:
  + CodeNow’s #CodeHow [Youtube Channel](https://www.youtube.com/channel/UCxwhlGyOIOZnu_TVe5f2MJQ/feed)
* Processing Learn to Program book [LearnToProgram.pdf](http://cs.umanitoba.ca/~young/learnToProgram/LTP/LTP-AllUnits.pdf)

The Processing Learn to Program book is available online, at no cost, as the above file LearnToProgram.pdf. This is a 412 page PDF file.

There are also some video tutorials on the processing.org website.

**Bring to class:**

* Knowledge gained from Computer Science 20S! We will do some review, but you may find that you will need to do some of your own practice and review, on your own time.

**Course Description and Objectives:**

Computer Science 30S builds upon skills learned in Computer Science 20S. Through both group and individual work, students will utilize and previously learned material to develop problem-solving computer applications. Topics will include methods with parameters, simple sorts, arrays and multi-way branching. Learning outcomes include:

* Research careers in computer science and give career background
* Review basic structures (drawing functions, variables, basic operations, loops, decisions)
* Methods, Arrays, Strings, Searches and Sorts, Multiple Branching (advanced decisions) and Object Oriented Programming
* Write and Practice code that helps students to learn these structures
* Building a program (ie. a game)
* Develop and present your own programs

**Course Content:**

|  |  |
| --- | --- |
| **Topic** | **% of Course Content\*** |
| Computer Science History and Influencers | 5 |
| Review of Computer Science 20S Concepts | 10 |
| Programming: Reusable Code and Methods | 15 |
| Control Structures 1: Arrays and Strings | 25 |
| Algorithms: Searches and Sorts | 15 |
| Control Structures 2: Multiple Branching | 10 |
| Introduction to Object Oriented Programming | 10 |
| Final Project | 10 |

\*Instruction may be adjusted depending upon student need.

**Assessment/Evaluation:**

The final mark for this course will be assessed as follows:

|  |  |
| --- | --- |
| Completion of programming assignments | 15% |
| Quizzes | 5% |
| Tests/Intro unit assessments | 20% |
| Term Programming project | 30% |
| Final Exam | 30% |
|  | **100%** |