Computer Science w/ Optional Dual Credit

Instructor	*Mrs. Smith*	*Phone*	*324-2247*
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Course Description

Computer Science is for students with a desire to develop programming fundamentals. Java and Python will be used to create console and window applications. A student can take up to eight semesters of computer science. Python will be taught the first semester. The next four will use Java and build upon the previous semester(s). The final three semesters are used for advance study through independent programming projects.

Dual Credit

College credit through Helena College or Carroll College is available for this class:

- 3 Helena College semester credits after 1st semester, 3 semester credits after 2nd semester and 4 more after 3rd semester; around $150 for 3 credits and $200 for 4 credits
- 4 Carroll College semester credits after 3rd semester; cost around $425; must earn 80%+ each semester

Course Objectives

By the end of this course, you should:

1. Know the fundamentals of Python and Java
2. Know the basic concepts & methods of object-oriented programming
3. Use Python & Java to implement logic involving sequence, selection & repetition
4. Create well-written and readable programs
5. Use practical problems to illustrate application-building techniques

Textbooks

Learning with Python: Interactive Edition (Using Python 3.x) - site

Java Programming, 8th Edition

Joyce Farrell **ISBN-10: 1285856910** **ISBN-13: 9781285856919**

Useful URLs

Students will be using the Internet to complete their CS work.

- My web page: (Assignments/Syllabi) http://hhs.helenaschools.org/teachers/busmith/
- Java API: https://docs.oracle.com/javase/8/docs/api/

Course Outline

Python:

Simple Python Data
Debugging
Python Turtle Graphics
Python Modules
Functions
More About Iteration
Strings
Recursion

Java:

Chapter 1 Creating Java Programs
Chapter 2 Using Data
Chapter 3 Using Methods, Classes, and Objects
Chapter 4 More Object Concepts
Chapter 5 Making Decisions
Chapter 6 Looping
Chapter 7 Characters, Strings, and the StringBuilder

Chapter 8	Arrays
Chapter 9	Advanced Array Concepts
Chapter 10	Introduction to Inheritance
Chapter 11	Advanced Inheritance Concepts
Chapter 12	Exception Handling
Chapter 13	File Input and Output
Chapter 14	Introduction to Swing Components
Chapter 15	Advanced GUI Topics
Chapter 16	Graphics
	Databases
	Servlets

Classroom Expectations

BE RESPONSIBLE

- Be seated when bell rings (5 or more minutes tardy = absent)
- No food or drinks except for those listed in handbook
- Take care of the equipment & clean up after yourself

BE INVOLVED

- Stay awake
- Work hard on Computer Science work the whole period
  - Don't use CS time to work on other classes
  - Internet is only for CS work (see HHS AUP)
- **Cellphones and headphones are not allowed** – both interfere with being able to get the most out of the class

BE RESPECTFUL

- Compliment people instead of putting them down
- Don't be disruptive (out of seat, talking when I am talking, etc.)

BE A GRADUATE

- Don't cheat – all parties involved will receive a 0 if caught

GRADE CALCULATION

- Daily Work 70%
- Quizzes/Tests 30%
- Semester Grade = Q1/Q3 40%, Q2/Q4 40% & Final 20%

GRADING Scale

- 100-92 = A 91-90 = A- 89-88 = B+ 87-82 = B 81-80 = B-
- 79-78 = C+ 77-72 = C 71-70 = C- 69-68 = D+ 67-62 = D
- 61-60 = D- 59 & below = F

LATE WORK

- 20% off on any assignment that is turned in late

ABSENCES

- Check assignments on my lesson plans
- New assignments: 2 days for 1st day missed; 1 for all others
  - Previously assigned work will be due on original due date
  - Previously scheduled tests will be taken on return to class