

Concurrent Enrollment Course Outline

High School Name: South Seneca High School

TC3 Course # and Title: CSC1160 Computer Science 1

Credit Hours: 3

Instructor: Mr. Hermanet

Class Website: <http://hermanet.weebly.com>

Instructor e-mail: rhermanet@southseneca.org

Office Hours Appointment Sign-Ups: <http://calendly.com/hermanet>

Student Audience – Grade Level(s): 9-12

Semester(s) Offered: *Spring (January-June)*

Course Description:

With the increased use of computers, smartphones, and other electronic devices, interest in program and application development has grown. In addition, the computer and robotic automation of many traditional manufacturing jobs today frequently requires some knowledge of programming. This is a course for students who wish to learn the basics of computer programming either for their own curiosity or as part of a career plan; no prior programming experience is required. The course will introduce basic programming terminology, concepts, and best practices. Students will learn to write programs in the JAVA language using such constructs as variables, statements, functions, loops, arrays, and classes. Good programming habits and problem solving strategies will be covered, as well as program design, flow charting and architecture, and debugging techniques. Exploration of using programming concepts to manipulate real-world hardware will be explored as time allows.

Course Prerequisites: None

Minimal Basic Skills Needed to Complete Course Successfully: Students should be comfortable navigating the computer environment and have a basic curiosity about technology.

Course Goals and Objectives:

- Know how to read, write, compile, modify, execute, and debug Java programs using good programming style.
- Use different data types in a computer program.
- Design programs involving decision structures, loops and functions
- Become familiar with, and use, an appropriate problem solving approach.
- Approach new learning experiences with curiosity and persistence.

Texts and Materials: Textbook: *Java Software Solutions for AP Computer Science (3rd Ed)*

Class Modalities/Alternative Learning Strategies: The course will be delivered via lecture, whole-class discussion, and lab experiences, in both group and individual arrangements.

Calendar of Course Topics:

| Course Topic | Week |
|---|-------------|
| <u>Computer Systems:</u> <ol style="list-style-type: none">1. Describe the relationship between hardware and software2. Define various types of software and how they are used3. Identify basic computer hardware and explain what it does4. Explain how the hardware components execute programs and manage data5. Describe the steps involved in program compilation and execution6. Understand the binary number system7. Describe the steps in problem solving8. Distinguish between compile-time, run-time and logical errors9. Understand and modify existing code10. Create a simple program using drag and drop software11. Solve a variety of programming problems12. Become comfortable exploring Java programming language examples | 1-2 |
| <u>Objects & Primitive Data:</u> <ol style="list-style-type: none">1. Define the difference between primitive data and objects2. Declare and use variables3. Perform mathematical computations4. Create objects and use them5. Understand and modify existing code6. Diagram the logic of a simple program using logic flow chart symbols | 3-10 |
| <u>Program Statements:</u> <ol style="list-style-type: none">1. Discuss basic program development steps.2. Define the flow of control through a program.3. Learn to use if and if/else statements.4. Define expressions that make complex decisions.5. Learn to use while and for statements. | 11-15 |
| <u>Writing Classes:</u> <ol style="list-style-type: none">1. Define classes that act like blueprints for new objects, made of variables and methods.2. Explain encapsulation and Java modifiers.3. Explore the details of method declarations.4. Review method invocation and parameter passing.5. Explain and use method overloading.6. Learn to divide complicated methods into simpler, supporting methods.7. Describe relationships between objects. | 16-20 |

Required Readings, Presentations, Written Assignments, etc.:

Most work will be hands on implementation of the concepts explored in the course. Some textbook reading and referencing will be required to facilitate success with program design. Quizzes/tests will occur after each major learning unit. Some group work will be included.

Evaluation/Grading System:

| | | |
|--------------------|-----|---|
| Participation | 15% | <ul style="list-style-type: none">• Professionalism• Teamwork/collaboration• Skill application• Discussion contributions |
| Exercises/Projects | 65% | <ul style="list-style-type: none">• Completeness• Technical quality• Creativity• Timeliness |
| Tests | 20% | |

Letter Grading Conversion:

| | | | | | | | |
|----|--------|--|----|-------|--|----|-------|
| A | 93-100 | | B- | 80-82 | | D+ | 67-69 |
| A- | 90-92 | | C+ | 77-79 | | D | 63-66 |
| B+ | 87-89 | | C | 73-76 | | D- | 60-62 |
| B | 83-86 | | C- | 70-72 | | F | 0-59 |

Statement of Academic Integrity:

Definition of plagiarism: According to the Modern Language Association, an organization whose mission “promotes the study and teaching of languages and literatures” plagiarism is “presenting another person’s ideas, information, expressions, or entire work as one’s own.”

What does it look like? Any of the following instances constitute a violation of the South Seneca Academic Integrity Policy and will result in consequences based on frequency of offense.

- Copying (and pasting) from an internet or otherwise published source without utilizing quotations and giving proper credit
- Anything from one sentence or idea to paragraph or an entire paper
- Paraphrasing ideas without giving credit
- Handing in the same work for two classes without teacher permission
- Creating or copying an assignment in conjunction with other students without expressed permission of the teacher

Make-Up Policy/Late Work:

Students may rework assignments with teacher permission up until the end of each mark reporting period. Tests cannot be made up or retaken.

Attendance Policy:

Achievement at the high school or college level is clearly related to attendance. Students are expected to be in attendance each day that school is in session unless they are excused by their parent or guardian in accordance to school board policy.

Students are required to be in attendance 85% of the scheduled class of a course of study to be eligible for course credit. This will be calculated by dividing the classes attended by the scheduled class meetings.

Students will be considered absent from a class if they are absent for more than 15 minutes of a scheduled double class period or 8 minutes for a scheduled single class period.

Student Responsibilities:

In a college-level course, students are expected to take increased ownership of their learning, be proactive in seeking out assistance/clarification of both expectations and requirements, and commit to a high level of academic intensity.

Additional Assistance:

Students may contact their instructor in class, before or after school, and/or via email at rhermanet@southseneca.org.

Concurrent Enrollment Student Handbook:

Students should review the guidelines provided on CollegeNow's website for information on college expectations, College library services, and transferring credits. Student Resource links appear on the right side of the CollegeNow homepage at www.tompkinscortland.edu/collegenow