

Software Development: Object Oriented Programming

STA is an innovative and advanced experience that prepares high school juniors and seniors for college and career success.

Christine Falk

2021-2022 Course Syllabus

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Office Hours: 10:00 – 11:40 a.m.
2:00 – 2:50 p.m.

COURSE DESCRIPTION

This course emphasizes programming methodology and problem solving. Algorithm design and development, data abstraction, good programming style, testing and debugging will be presented. An appropriate block structured high-level programming language will be studied and used to implement algorithms.

INSTRUCTIONAL PHILOSOPHY

In this course, students will be completing a series of progressively more challenging activities and projects typical of the software engineering programming field, working in small groups, in pairs and individually. As a part of these activities, students will be applying academic skills in mathematics, science, and language arts.

High quality work is expected of all students, so students may be asked to re-do work until it is of a level of quality that would be acceptable in a professional setting. Students will be expected to act as a young professional at all times.

ESSENTIAL STANDARDS

Upon successful completion of this course, each student should be able to:

- Solve problems using a disciplined approach to algorithm development.
- Use a block-structured high-level programming language.
- Create, test and debug programs using an integrated programming language development system.
- Describe and use well-known algorithms and data structures.
- Code and document using commonly accepted programming standards.
- Identify the major hardware and software components of a computer system, their relationship to one another, and the roles of these components within the system.
- Demonstrate an understanding of procedural programming and data abstraction.
- Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams, with a high degree of creativity and innovation.
- Implement agile development practices while working in teams.

MAJOR ASSIGNMENTS/PROJECTS

- Complete activities and small projects to demonstrate comprehension of each concept, working individually, in pairs and/or small groups
- Maintain a portfolio of completed work
- Take an active role in the class capstone project

STUDENT PERFORMANCE ASSESSMENT

- Non-programming in-class and take-home assignments
- Software development projects - both individual and pairs/small groups
- Unit quizzes
- Semester exams
- Participation in sanctioned STA/computer science program event (optional/extra credit)

DUAL CREDIT OPPORTUNITIES

Offered to eligible students according to Coordinating Board of Higher Education. Credit will be granted from Longview Community College (MCC). **Textbooks:** Fall: C++ Programming from Problem Analysis to Program Design. D.S. Malik. 2018. Spring: Java – How to Program Late Objects. Paul and Harvey Deitel. 2017.

GRADING POLICY

Grading will be figured using the Summit Technology Academy approved grading scale. Grades are cumulative throughout the semester. The grade will be based on the following total points: written work, participation, activities/projects and assessments. A comprehensive written final will comprise 10% of semester grade.

The following standardized grading scale is used for STA:

A = 95 -100 C = 73 - 76
A- = 90 - 94 C- = 70 - 72
B+ = 87 - 89 D+ = 67 - 69
B = 83 - 86 D = 63 - 66
B- = 80 - 82 D- = 60 - 62
C+ = 77 - 79 F = 59 & below (No Credit)

Colleges use a four-point system of grading (A= 4, B=3, C=2, D=1, F=0) without a minus and plus option.

TUTORING/EXTRA HELP PLAN

STA utilizes a pyramid of interventions in order to ensure students successfully meet the course requirements. Tutoring or extra help can be obtained by contacting the STA teacher through e-mail, phone or Schoology learning management system. The teacher will provide either immediate help, set up a time to meet, or utilize an online video conference method.

ACADEMIC INTEGRITY

STA instructors have a responsibility to evaluate student progress in learning and to evaluate student work for assigning course credit. Academic integrity on the part of the student requires an honest effort on all assignments, exams, presentations, products, and performances that are part of graded course elements. "Honest effort" means doing one's best, but also not doing better than one's best through unfair means. Student cooperation and honest effort on assessment activities are vital to the effectiveness of the outcomes assessment program. By giving an honest effort on surveys, exams, or other activities that are used for assessment purposes, students contribute in meaningful ways to the integrity and value of their education.

ELECTRONIC GRADEBOOK/PARENT CONNECT WEBSITE

Grades are updated at least once a week in Power School. The link is on the district website and instructions are here: <http://www.lsr7.org/parents/power-school/>.

ACADEMIC LETTERING:

Any student who has maintained a 4.0 GPA for both semesters of the STA course (through the 5th grading period) will receive an academic letter. Refer to the STA student hand book for additional requirements or stipulations.

MATERIALS NEEDED

Students are expected to bring paper, pencil or pen, and a flash drive to class.

ATTENDANCE POLICY

Regular attendance reflects dependability. The experience gained by students in the laboratory cannot be duplicated in the event of absence. **Summit Technology Academy's policy may differ from that of the sending school and will be in effect for the period of attendance at STA.**

A student shall be allowed no more than nine (9) absences, excused or unexcused, per semester in any one class. When a student reaches 9 days, the school will send an informational letter to the parents, regardless of prior contact by phone or conference. The letter serves as notification of the number and type of absences by the student in each class. On the tenth (10) absence, in any one class, the student will not earn credit for that class. Students will have the opportunity to work with their administrator or teacher to make up missed time prior to the end of the semester. If a student still has 10 or more absences at the conclusion of the semester the student will be required to complete an attendance waiver appeal. A waiver to maintain full credit must be submitted by the end of the semester. This waiver should include documentation of illness, funeral, or family emergency from a medical doctor, dentist, minister, or other official source. The waiver should be turned into the attendance office.

TARDY POLICY

Tardies will be issued according to the student handbook. Students are on time if they are seated in the classroom at 07:55 for AM session or 11:55 for PM session and have begun working on the bell work. Please take care of water-drinking and restroom needs BEFORE the class begins.

DRIVING PRIVILEGES

Driving to STA is a privilege and can be revoked at any time. Students are allowed to drive to STA as long as their sending school allows them to drive and a permit is on file. Driving permits may be revoked if a student is frequently tardy or late to school. Please refer to the STA student handbook for full driving/parking policy.

ELECTRONICS POLICY

No electronics or headphones are allowed in the classroom unless being used in the educational process as directed by the instructor. Electronics should be placed in backpacks or purses and out of sight. Students are encouraged to interact and help one another when appropriate.