Software Development: Programming in Java

2022-2023 Course Syllabus

Instructor: Greg Bustamante
STA Main Number: 816-986-3410
Office: 816-986-3421
Fax: 816-986-3435
E-mail: greg.bustamante@lsr7.net
Office Hours: 10:00 – 11:40 am
2:00 – 2:50 pm

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. This course prepares students with a highly sought after skill set in the market and lays the foundation for additional study in the field of Computer Science.

> **High School Credits:** 3 units (2 semesters)
> **LSR7 Weighted Credit:** .666
> **NON Lee's Summit Schools Weighted Credit:** Varies by School
> **College Dual Credit:** UCM CS 1100/1110

Prerequisites

- Grade 11 or 12
- Proficient in Keyboarding, min. 30 wpm
- Reading/Writing at 10th grade level or higher
- Algebra II with a B- or better OR previous programming knowledge
- 2.5 GPA (Unweighted)
- 90% Attendance
- Outside class Internet access is required

Recommended: CHAOS I or PLTW Computer Science Essentials or PLTW Computer Science Principles

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)

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 email, 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.

Classroom Expectations

1. When an instructor, guest or student is speaking to the class, laptops will be turned off and they will be given your full undivided attention.
2. Students are expected to follow all of the guidelines listed in the LSR7 student handbook.
3. Playing games during class is prohibited.
4. There is to be no food or drink in class, with the exception of water. There may be certain times of the year when this is excused. Those times will be clearly noted.
5. You may not use any unauthorized programs or equipment. If you have not been instructed by me to use it, then it is unauthorized.
6. Do not make unauthorized changes to the equipment. This includes downloads or installing anything. The use of the internet in this classroom is a privilege, not a right.
7. Cell phone use is prohibited. They will be confiscated if seen, used or heard. Exceptions can be made if I direct you to use them in a project or if you are expecting an important call. Notify me before the class starts if you need to use your cell phone.
8. No sleeping in class. You can not learn if you are asleep and you may miss important information.

The first violation of these rules will result in a warning and written documentation. If the rule is violated a second time the student will receive a personal improvement plan where the instructor identifies the problem and the student will create an action plan to resolve the issue. This action plan should include specific and measurable objectives that are accurate, relevant and time-bound. If the rule is violated a third or subsequent times the student may be referred to the office. Any violence or damage to property will not be tolerated and students will be sent to the office immediately. The instructor has discretion to, due to the severity of the issue, deal with any violation as they deem appropriate in accordance with district policies.

Electronic Gradebook/Parent Connect Website

Grades are updated at least once a week in PowerSchool. The link is on the district website and instructions are here: https://powerschool.lsr7.org/public/.

Academic Lettering

Students who have earned a 94.50% or higher in a STA program for the first semester AND a 94.50% or higher grade at the time of the fifth grading period will receive the academic letter, also known as a Chenille letter.

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.

Dual Credit Opportunities

Offered to eligible students according to the Coordinating Board of Higher Education. Credit will be granted from University of Central Missouri.

MIC Accelerated Early Bachelor Degree Program

Students who take Software Development at Summit Technology Academy their junior year AND have a 3.0 unweighted GPA/95% attendance may also choose to participate in a university partnership program called Missouri Innovation Campus (MIC), in which students begin to earn a bachelor's degree while still in high school. The bachelor's degree is offered through the University of Central Missouri - Lee's Summit. This program helps to significantly reduce the overall cost of a bachelor's degree. Students will participate in extensive internship opportunities with companies such as Cerner, VML, NIC, and many more. **Students who qualify and have interest, must mark that they are interested on their STA Online Application.**

Cerner Scholars Internship Option

After at least one semester of the Software Development course, students can apply for Intern in STEM and intern at Cerner during the fall and/or spring semester. Click here to learn more about Cerner Scholars.

I have read and understand the information detailed above. If I have any questions, I know I can contact the instructor at the times listed in this letter. I understand that all supplies requested for class (both required and optional) are strictly my (student's) responsibility, and the school/instructor is not responsible for lost or stolen items. I am also aware that this syllabus can change at any time and I will be provided with a new copy to review and sign in such a case.

Student Signature: _____   **Date:** _____

Parent's Signature: _____   **Date:** _____

Parent's Email: _____

Parent's Phone: _____