Computer Programming

2020-2021

Grades 11-12

Prerequisite(s): Intro to IT

& Computer Hardware & System Support

Welcome to Computer Programming, the class that every adult now wishes their high school had offered! Computer Programming or CP is all about the basics of programming and programming languages and take you from a complete newbie to someone who feels comfortable whipping up a small program as needed. CP is a requirement for any East scholar who is in their 3rd or 4th year in a Information Technology Pathway at East. Why? Because this is the class that for the first time is NOT a focus on computers or hardware, but instead focuses on how hardware uses software to do the tasks or solve the problems that humans want it to. Software developers, engineers and programmers sit at the top of the US pay scale above Doctors, Lawyers and even some CEO's and the flexibility of this career cannot be beat, as many people in this industry work from home or remotely quite a bit. The best part of going into software development for you is the unlimited opportunities you have to make a difference in this world.

Instructor: Ms. Susan Gross

Contact Information:

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Course Description

Computer Programming uses the Python programming language as well as Java and HTML to introduce students to basic programming skills and the programming languages. Students learn the principles of programming. The course begins with the foundation of all programs: algorithms; then it lays a foundation for programming syntax, variables, operators, and control structures. Students use models and mini programs as a way to quickly learn the basics. After this foundation is established, students will design programs and write functions from scratch. In addition to learning the foundational skills for computer programming, students learn program design, documentation, formal debugging, and testing.

Course Units/Objectives

This course is broken into 3 units:

1. **Programming Basics (Python):**
   In this unit the focus is on programming fundamentals using the most syntax friendly Python language. Basics include: syntax, errors, input/output statements, variables, data types and comments. Scholars will create simple lines of code that demonstrate

2. **Setting Structure In a Program (Python):**
In this unit, we are still in Python but move from basic syntax and coding to how programs are structured to get the results needed also known as *structure*. In this unit students will begin to identify different decision structures that control program flow, i.e. control structures. Manipulate and output data using strings, conditionals, looping, and operators

3. **Basics of the Java Platforms - (Java/Java Script Languages)**
In this unit students learn the basics of the Java and Javascript programming languages. These modules introduce printing, variables, types, as well as how to use the basic control structures in the Java languages. The Javascript module has an additional video game component which is the final project for the course.

Grading Policy

Assessments
Curriculum Embedded Perform Tasks (CEPTS) 50%
Projects 30%
Other Work
Classwork 10%
Class Participation 10%

Classroom Materials

Online:	**In Class:**
Chromebook/MiFi	Writing materials: Pen/Pencil/Paper

Classroom (Workplace) Expectations

#1 **Be Accountable & Reliable**: Be at work(class) for every shift and on time. If you cannot make it, let your supervisor (teacher) know ahead of time. Come to work (class) prepared to do the work you are asked to do, in the time you are given. **BE A TEAM PLAYER** when working with other employees (classmates) do not expect them to do all the work when it is a team effort so that you are seen as a reliable employee (scholar)

#2 **Be Action Oriented-Tenacious & Proactive:** Participate in the work. When you do not understand the work as a co-worker (classmate) or your boss (teacher) as soon as possible. Stay awake and focused on the job (learning). If there is a chance to show what you are capable of to yourself, your teammates or your boss (teacher) do not hesitate to show off your abilities (actively participate in the class) being proactive is how a part of your promotions & raises are determined (grades).

#3 **Be Attitude Positive & Ethical:** Do your work without complaining; even when it is not what you

may like to do. Be honest even when you make a mistake (mistakes happen), accept the consequences of your mistakes with grace. If a coworker (classmate) makes a mistake, be helpful not hurtful. Follow the electronics policy - no personal phones or other electronics while on the clock (in class) - it is unethical

to be getting paid for work you are not doing, and eventually can cause serious harm to your advancement at work (grades). Do NOT take credit for someone else's work; either a co-worker (classmate) or information you got off of the Internet. In the world of work doing the right thing never is the wrong thing and can save you from getting let go.

4 **Be Appropriate & Respectful:** If what you are about to say/write or do to another employee (classmate) or your supervisor (teacher) would get you fired the DON"T do/say or write it. Think before you speak

Communication Policy

When you have questions for me, please use the following guidelines so that class time is maximized:

- ➔ **Office Hours are from 1:45 to 3:30 on ZOOM** please feel free to come during that time for any concerns , questions or help you may need (*link is in the Google Classroom*)

- ➢ **Questions about assignments** that come up **outside the class time or Office Hours** should be posted in the Q & A for that week' s assignment and I will get back with a reply as soon as possible. Scholars should also check the Q & A first, as another scholar may have already asked and an answer was given.

- ➢ *If you missed the class, it is your responsibility to read the Week at a Glance, go through the Google Class Slides to get caught up on the work you missed - BEFORE - contacting* the teacher

- ➔ **Questions about technology** needs or problems will be handled through the process setup for the whole school
- ➔ **Personal matters** should be discussed with the teacher through email or if it is something you do not want to write about, then email that and request a time will be set up for us to speak over the phone.

Parent/Guardians

Parents/Guardians are an integral part of each and every scholar's success. I work for you and your son/daughter so please do not hesitate to reach out to:

- Check on your scholar's progress/attendance
- Ask questions about assigned work
- Let me know if your scholar will be missing from class do to illness or other family issues
- Or if you need help on something related to their future: college, training, work papers, etc.

Please reach out to me as well if there are additional ways you can be reached - the more ways we

have to stay in touch with each other the more successful we will be in helping your son/daughter in their learning.