James Clemens High School
11306 County Line Road
Madison, AL 35756

Phone: 256-216-5313
Extension: 95222
Email: kgbrown@madisoncity.k12.al.us

Course Syllabus

Programming Foundations Fall 2025
Instructor: Kayla Brown

Dear Parent/Guardian,

Welcome to Programming Foundations!

My name is Kayla Brown and I will be your student's teacher this semester. I am looking forward to having a great year! I feel fortunate to have your son/daughter in my class this semester and hope that you will contact me should you have any concerns about the progress of your son/daughter or any aspect of the instruction. With your son/daughter, please read the attached policies, then sign and date this signature page and have them return this form. Please provide a current email address and phone number at which I can contact you should the need arise. Please turn in this page of the syllabus by Friday, August 8th.

Thank you,
Kayla Grantham Brown

My child and I have read and discussed the classroom syllabus.

Student Name (Print) _____ Date _____

Student Signature _____ Date _____

Parent/Guardian Name (Print) _____ Date _____

Parent/Guardian Signature _____ Date _____

Email Address(es) _____

Phone number(s) _____ (Cell) _____ (Home) _____ (Work)

Please provide any important information below:

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Course Description: Programming Foundations focuses on the fundamentals of computer programming with an emphasis on computational thinking and problem solving. Students will create authentic artifacts and engage with programming as a medium for creativity, communication, problem-solving, and fun. Students will be expected to develop logical thinking skills that pertain to programming. This course extends the standards of the *Alabama Course of Study: Digital Literacy and Computer Science*. After being introduced to basic computer terminology, students will learn to program C and will acquire a thorough understanding of variables, loop techniques, functions, and procedures. Good programming techniques will also be stressed.

Pre-Requisites:
Accelerated Math 7 & 8 or Algebra I with Probability

Credentialing (Subject to Change):
Certiport Information Technology Specialist (ITS) Python

Grading and Assessment: Test grades will account for 70% of the 9-weeks grade, with the remaining 30% being determined by quiz/daily grades. The grading scale is as follows: A (90-100%), B (80-89), C (70-79), D (65-69), and F (below 65). Grades will be a reflection of mastery of the standards. Make sure all absences are excused as class work can be made up and graded for excused absences only. The final exam counts for 20% of the final grade.
Not all assignments will be graded, but students must complete all work. Students will take notes via guided notes, graphic organizers, and other methods in this course. If a student is absent, their missed printed materials will be located in their class folder. Students are responsible for checking this folder. My office hours will be every Tuesday and Thursday during the first half of refuel.

Late Work: Per JCHS Policy, all late work is to be made up within 3 days of excused absence(s). It is the student's responsibility to see what they have missed and to turn in by the third day. If they do not turn in the work within 3 days then it will become a zero. If you missed a test or quiz, you must communicate this with me ahead of time. Typically, all make-up tests/quizzes will be held during refuel on Wednesday or Friday. If there is a conflict, it is the student's responsibility to schedule another time together to make-up the test or quiz.

TSA (Technology Student Association) CTS Integration: Technology Student Association is a National Career Technical organization where students can use knowledge gained from computer science courses. JCHS's TSA team competes at Alabama TSA convention every year and students from this course can choose to register and attend.

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Embedded Numeracy and Literacy Assignments: Opportunities for numeracy and literacy in the CTE class are critical and help support the goals of CTE in preparing students for college and/or career. Example anchor activities for mathematics include performing various engineering-related calculations; analyzing data collected from surveys when conducting research. Some examples but not limited to include interviewing an engineer or other professional, investigating various STEM/Computer Engineering-related fields and describing their responsibilities and the requirements to be successful in the field, writing a design brief or other technical report.

Accommodations: Requests for accommodations for this course or any school event are welcomed from students and parents.

Turnitin Notice: The majority of writing assignments in this course will be submitted to Turnitin via the Schoology learning platform. The primary focus of this software is to help students become better writers and scholars. Turnitin generates a report on the originality of student writing by comparing it with a database of periodicals, books, online content, student papers, and other published work. This program will help students discern when they are using sources fairly, citing properly, and paraphrasing effectively - skills essential to all academic work.

Students will have the opportunity to review their Turnitin originality report and will have the opportunity to make revisions before submitting their work for grading. Once their work is submitted, teachers have the opportunity to view the student's originality report and grade accordingly.

Supplies:

3 Ring Binder	Pencils
Loose Leaf Paper	Calculator (Optional)

Procedures & Rules:
Rules and Procedures will be discussed on the first day of class, but the main rules are as follows.

1. BE RESPONSIBLE FOR YOUR OWN LEARNING.
2. BE ON TIME and BE PREPARED.
3. ALWAYS TREAT OTHERS WITH RESPECT. WE DO NOT MAKE OFFENSIVE JOKES IN CLASS.
4. DO NOT THROW THINGS ACROSS THE ROOM.
5. DO NOT SPEAK OVER ME WHEN I AM TEACHING.
6. DO NOT LEAVE MATERIALS OR YOUR THINGS ON MY TABLES WHEN YOU LEAVE.
7. CHECK BACK OF THE ROOM BOARD FOR WEEKLY ASSIGNMENTS/QUIZZES/TESTS.
8. ONE PERSON OUT OF THE CLASSROOM FOR BATHROOM AT A TIME.

Technology in the Classroom:

- WE WILL USE ASSIGNED LAPTOP EVERY DAY. THESE LAPTOPS MUST STAY IN MRS. BROWN'S ROOM

Under the FOCUS Act, effective July 1, 2025, the use, operation or possession of Wireless Communications Devices (including but not limited to cellular telephones, tablet computers, laptop computers, pagers, gaming devices, smart watches, and earphones or headphones) in school buildings during the Instructional Day is prohibited. Please refer to the Madison City Schools Code of Student Conduct and Madison City Schools policy manual concerning wireless communication devices.

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Computer/Internet Appropriate Use Policies: Student laptops should not be hard-wired to the network or have print capabilities. 2. Use of discs, flash drives, jump drives, or other USB devices will not be allowed on Madison City computers. 3. Neither the teacher, nor the school is responsible for broken, stolen, or lost laptops. 4. Laptops and other electronic devices will be used at the individual discretion of the teacher.

Instructional Delivery Plan

18 - WEEK PLAN*	
WEEK 1	**Program Development Cycle, History & Introduction to the Python Language**
WEEK 2	**Basic Structure of a Python Program, Variables, Comment Lines, Data Types, Reserved Words, Input and Output Statements**
WEEK 3	**Character Strings, Formatting Output**
WEEK 4	**Operators, Expressions, and Statements**
WEEK 5	**Operators, Expressions, and Statements**
WEEK 6	**Introduction to Looping (While, Do-While, and For Loops)**
WEEK 7	**Loops Continued**
WEEK 8	**If and If/Else Statements, Switch Statements**
WEEK 9	**Character Input/Output**
WEEK 10	**File Processing**
WEEK 11	**Introduction to Functions (Void, Return Value, Recursive, Built-in)**
WEEK 12	**Functions Continued.. Pass-by-Value and Pass-by-Reference, Local and Global Variables**
WEEK 13	**Introduction to One-Dimensional Arrays**
WEEK 14	**Arrays Continued...Two-Dimensional Arrays**
WEEK 15	**Character Strings and String Functions**
WEEK 16	**Character Strings and String Functions Continued..**
WEEK 17	**Programming Exercises**
WEEK 18	**Overall Review**

*** This syllabus serves as a guide for both the teacher and student; however, during the term it may become necessary to make additions, deletions or substitutions. Also, please note that we are changing this course language to Python starting Fall 2025. Some topics may be taught in a different order.**

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Course Goals/ Objectives

Foundational Standards
• Foundations in programming
• Introduction to safety procedures in handling, operating, and maintaining tools and machinery; handling materials; utilizing personal protective equipment; maintaining a safe work area; and handling hazardous materials and forces.
• Demonstrate effective workplace and employability skills, including communication, awareness of diversity, positive work ethic, problem-solving, time management, and teamwork.
• Explore the range of careers available in the field and investigate educational requirements, and demonstrate job-seeking skills including resume-writing and interviewing.
•Advocate and practice safe, legal, responsible, and ethical use of information and technology tools pacific to the industry pathway
• Increase knowledge and skills to enhance leadership and teamwork (CTSO)
• Use technology to collaborate with peers and/or experts to create digital artifacts that can be published online for a target audience
• Formulate new ideas, solve problems, or create products through the design and engineering process by utilizing testing, prototypes, and user feedback.

Computer Numbering Systems
• Explain how strings of 0s and 1s are used in programming.
• Summarize how numerical values are represented using different bases, including decimal and binary.
• Demonstrate how numbers with decimals can have fixed-point or floating-point representations in binary.
• Compare and contrast quantum and classical computing notation systems.

Professional Skills
• Team collaboration
• Project management
• Problem-solving
• Communication skills
• Presentation skills
• Technical writing

Digital Literacy
• Describe ethical and legal practices for safeguarding the confidentiality of business-related information
• Describe possible threats to a laptop, tablet, computer, and/or network and methods for avoiding attacks related to programming.
• Explain consequences of social engineering, illegal, and unethical uses of technology.
• Describe computing innovations which have the potential to advance programming or other aspects of computer science.
• Describe the flow of data and instructions through computer systems.
• Explain how data is represented, manipulated, and stored in a computer.
• Describe the components of the programming development environment (the hardware and software used by programmers)

Software Design and Programming
• Compare and contrast current programming languages utilized by business and industry and determine features, functions, and benefits of each.
• Identify and explain various kinds of cryptographic algorithms.
• Explain why any input-processing algorithm must correctly handle all problem variants
• Write an algorithm to solve mathematical problems using formulas, equations, and functions.
• Represent the logical flow of a program graphically
• Utilize and explain techniques for code commenting and documentation.
• Design a program that uses mathematical operations, data, functions, looping and iteration, sequencing, abstractions, lists, and selection
• Design a program that passes arguments and parameters (variables).
• Evaluate algorithms based on given designs to discuss their efficiency, correctness, and clarity
• Construct programs that utilize logical algorithms from specifications and requirement statements
• Create a model software program which involves coding, testing, and documenting according to industry coding standards and guidelines