PROGRAMMING FOUNDATIONS

Teacher Name: Ms. Norma Malone Teacher E-mail: njmalone@madisoncity.k12.al.us

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.

Classroom Management Plan:

Classroom Management Plan

- Verbal reprimand
- Conference with student with parent contact
- Withdrawal of privilege(s) with parent contact
- Other consequences determined to be reasonable and appropriate by the school administration.

Cell Phones

Cell phones and earbuds/headphones will not be allowed to be used during classroom instruction time. Phones and earbuds/headphones will be put away in a location designated by the teacher and placed in silent mode. In secondary schools, students will have access to their phones and earbuds/headphones outside of classroom instruction time such as between classes and lunch. Failure to follow these procedures will result in a disciplinary referral to the office.

Grading Policy:

Major assessments will count 70 percent of your grade. Homework and classwork will account for 30 percent of your grade. Grades will be updated weekly in PowerSchools. Each grading period will consist of nine weeks.

Make-up Work Policy:

Make-up tests will **only** be given to a student who has an **excused absence**. **The student must make arrangements with the teacher to take a make-up test. Tests may be taken during Patriot Path with prior arrangement from each teacher.** A student only has two chances (the next two Patriot Paths after the absence) to make up a test. All make-up tests will be administered in the designated classroom on the Patriot Path session roster.

Homework/Classwork: Students who are absent for **excused reasons** will be permitted to make up missed work. **It is the student's responsibility to get their work assignments the day upon return to school and complete the assignments according to a time frame**

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determined by the teacher within two weeks of the date of the last absence. Grades of zero will be assigned for assignments missed because of unexcused absences.

Text and Other Required Reading:

C Programming by Greg Perry and Dean Miller

Career_Technical_Student Organization (CTSO)

Technology Student Association (TSA) is an integral part of our class. Membership allows for service learning, simulated workplace, field trips, and competitions.

Materials and Supplies Needed:

- Wired on ear headphones
- Space in a 3 ring Binder
- Loose Leaf Paper
- Pencils

Laptops

Concerning laptop utilization: 1.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.

Prerequisites

Algebra I or Geometry with Data Analysis

Possible Certifications

- Fiber Optics - Skills for Success
- Microsoft Azure Data Fundamentals
- Information Technology Specialist Databases

Accommodations

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

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Example: 18 – WEEK PLAN*	
Weeks 1	**Program Development Cycle, History of C, introduction to the C Language** **Essential Question:** How does the evolution of the C programming language influence modern software development practices and methodologies?
Weeks 2	**Basic Structure of a C Program, Variables, Comment lines, Data Types, Input and Output** **Essential Question:** What are the foundational elements of a C program, and how do they work together to facilitate effective programming and debugging?
Weeks 3	**Character Strings, Formatting Output** **Essential Question:** How do character strings and formatting output in C enhance the readability and usability of a program's interface?
Weeks 4-5	**Operators, Expressions and Statements** **Essential Question:** How do operators and expressions in C contribute to the development of complex algorithms and data manipulation?
Weeks 6-7	**Loops** **Essential Question:** How do different types of loops in C control the flow of execution, and when should each type be used for optimal performance?
Week 8-9	**If/Else, Switch, Input and Output** **Essential Question:** How do conditional statements and branching structures in C determine the logical flow of a program, and what are the advantages of each type?
Week 11-12	**Functions** **Essential Question:** How do functions, including void, return value, recursive, and built-in types, modularize code and improve program maintainability in C?
Week 13-14	**Arrays** **Essential Question:** How do one-dimensional arrays in C enable efficient data storage and manipulation, and what are their common applications?
Week 15-16	**Strings** **Essential Question:** How do string functions in C provide powerful tools for manipulating and analyzing character data, and what are the best practices for using them effectively?
Week 17	**Programming** **Essential Question:** How can diverse programming exercises reinforce and expand understanding of C programming concepts, and what strategies enhance problem-solving skills?
Week 18	Review/Portfolio **Essential Question:** How can a comprehensive review of C programming concepts consolidate learning and prepare for real-world application and further advanced study?

***This is a tentative plan and may change at the discretion of the teacher.**

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Please sign below to acknowledge that you have received, read, and understood the syllabus.

Student name: _____

Student signature: _____

Parent/guardian name: _____

Parent/guardian signature: _____

Parent/guardian, please provide two ways for me to contact you (email address, phone numbers):

Parent/guardian Email:

_____

Parent/Guardian Phone number:

_____