2023-2024
Liberty Middle School
281 Dock Murphy Drive, Madison, Alabama 35758
Mrs. Jodi Jones
CodeSpace - An Introduction to Python

Teacher Contact Information	**Email:** jodijones@madisoncity.k12.al.us **Classroom Phone:** 256-430-0001 ext. 83129
Course Digital Platforms	**Webpage Link: https://www.madisoncity.k12.al.us/Domain/1079** **Schoology: https://madisoncity.schoology.com/home** **Curriculum:** https://firialabs.com/pages/the-codespace-platform **Parent Communication:** *Power Schools will be used for parent contact. Please make sure all contact information is up to date in powerschool.*
Textbook Information	*No textbook. Online CodeSpace curriculum* *https://make.firialabs.com/* *(login usernames provided in class)*
Course Description	CodeSpace: Introduction to Python is a course centered around project-based learning utilizing Python, a text-based coding language. In this course, students will learn to write Python code and utilize micro:bit, an arm-based embedded system, to create projects relevant to real-world situations. Students will be challenged to be creative and innovative as they collaboratively design and develop solutions to authentic problems.
Course Prerequisites	PLTW Computer Science Innovators & Makers
Course Objectives	*Apply computational thinking to solve problems. Recognize that computational thinking can be applied in multiple disciplines. Choose appropriate computational practices when solving a problem. Analyze and create algorithms. Analyze the structure and functionality of a program. Create programs by developing and testing code in a modular, incremental approach. Adapt or improve existing code. Describe the hardware components of an electronic device and how they interact with software and the environment. Analyze the implications of computing in society. Consider accessibility and equity when designing products, creating solutions,and collaborating with others. Describe the role, connections between disciplines, and impact of engineering and computer science on society.*
Course Goals	**Students Will:** 1. **Be able to follow the engineering design process** 2. **Learn and use standard safety practices.** 3. **Create algorithms and document the planning process for code** 4. **Demonstrate proper Troubleshooting and Code Tracing techniques** 5. **Design projects that meet consumer needs in today's world** 6. **Use sensors and actuators and inputs and outputs in projects** 7. **Create code using Python and download programs to the micro:bit microcontroller**
Instructional Delivery Plan, Course Outline & Culminating Project	**Unit 0: Coding Unplugged** *Students learn basic terms, such as algorithm, program, and debug. We will discuss cybersafety, cybersecurity, digital citizenship, and best programming practices.* **Unit 1: Getting Started** *Students will learn the basics of coding in Python (Project 1: First Steps; Project 2: Display Games; Project 3: Micro Musician; Project 4: HeartBeat)* **Unit 2: Putting it All Together** *Students will synthesize skills to create more complex programs. (Project 5: Personal Billboard; Project 6: Answer Bot; Project 7: Game Spinner)*
Instructional Delivery Plan, Course Outline	**Unit 3: Using Inputs and Outputs** *Students will use the micro:bit sensors to create programs with real-world applications. (Project 8: Reaction Tester; Project 9: Spirit Level; Project 10: Night Light; Project 11: Get Graphical)*

& **Culminating Project**	**Unit 4: Interactive Physical Computing** *Students will create interactive projects that involve interactions between users and sensors as well as wireless "Internet of Things" networking. (Project 12: Radio Messenger; Project 13: Cyber Bit; Project 14: Temperature Sensor; Project 15: Alarm System; Project 16: Sounds Fun)*
Credentialing	None
CTSO Integration *(LMS Career Technical Student Organization is TSA)* https://www.madisoncity.k12.al.us/Domain/505	Technology Student Association, TSA, is a **career technical student organization** and a fundamental part of this course. It is a national career and technical student organization of students engaged in science, technology, engineering, and mathematics (STEM). TSA is integrated into the program which includes competitions and leadership opportunities. TSA provides students with activities during their class time and after school with our local TSA Chapter. *TSA Based Activities relevant to CodeSpace include but are not limited to: Lab Safety Posters, Coding Challenges, Career Prep, Cyber Security, Essays on Technology, Challenging Tech Issues*
Embedded Numeracy Anchor Assignment *(Unit 3, Lesson 11: Get Graphical Mystery Plot 10 points)*	- The Number System - Integer Operations CS: Unplugged Lesson 2, [7-NS1] - The Number System - Fraction Operations CS: Unplugged Lesson 4, 5 [7-NS2, 7-NS3] - Expressions and Equations - Expressions Jumpstart 1.2 Display Games [7-EE1, 7-EE2, 7-EE3] - Expressions and Equations - Equations Jumpstart 1.3 Micro Musician, 1.4 Heartbeat [7-EE4] - Expressions and Equations - Inequalities Jumpstart 2.5 Billboard, 2.6 Answer Bot [7-EE4] - Statistics & Probability - Probability Jumpstart 2.7 Game Spinner, 3.8 Reaction Tester [7-SP5, 7-SP6, 7-SP7, 7-SP8] - Ratios and Proportional Relationships - Unit Rates Jumpstart 3.9 Spirit Level [7-RP1] - Ratios and Proportional Relationships - Proportional Relationships Jumpstart 3.10 Night Light [7-RP2] - Ratios and Proportional Relationships - Percents & Problem Solving Jumpstart 4.12 Radio Messenger, 4.13 Cyberbit [7-RP3] - Geometry- Constructing Figures Jumpstart 3.11 Get Graphical [7-G1, 7-G2, 7-G3] - Geometry- Circles Jumpstart 4.14 Temperature Sensor [7-G4] Jumpstart 4.16 Sounds Fun, Jumpstart 4.15 Alarm System - Geometry- Angles [7-G5] - Geometry- Real-World Problems [7-G6] - Statistics & Probability - Statistics [7-SP1, 7-SP2, 7-SP3, 7-SP4]
Embedded Literacy Anchor Assignment *(Flowchart and Reflection Assignments to accompany all remix projects in the course 10 points each)*	- R1. Utilize active listening skills during discussion and conversation in pairs, small groups, or whole-class settings, following agreed-upon rules for participation. - R3. Use digital and electronic tools appropriately, safely, and ethically when researching and writing, both individually and collaboratively. - Expression: 7. Produce clear, coherent narrative, argument, and informative/explanatory writing in which the development, organization, style, and tone are relevant to task, purpose, and audience, using an appropriate command of language. b. Write informative or explanatory texts with an organized structure and a formal style, incorporating a focused point of view, a clear purpose, credible evidence, and technical word meanings. 29. Use academic vocabulary in writing to communicate effectively. 2-CS-01 Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. 2-NI-05 Explain how physical and digital security measures protect electronic information.
Embedded Science Anchor Assignment *(Unit 3, Project 9: Spirit Level Project 10 points) includes accelerometer and acceleration calculations, unit conversions, range, scaling for contraction of a picture element. Remix includes design process, oral and written communication and data collection.*	https://www.nextgenscience.org/ - NGSS.P1 Asking questions and defining problems in 6-8 builds on K-5 experiences and progresses to specifying relationships between variables, and clarifying arguments and models. - NGSS.P 2 Modeling in 6-8 builds on K-5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems. - NGSS.P2 Develop and/or use a model to generate data to test ideas about phenomena in natural or designed systems, including those representing inputs and outputs, and those at unobservable scales. - NGSS.P3 Conduct an investigation and/or evaluate and/or revise the experimental design to produce data to serve as the basis for evidence that meet the goals of the investigation. - NGSS.P3 Evaluate the accuracy of various methods for collecting data. - NGSS.P6 Constructing explanations and designing solutions in 6-8 builds on K-5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories. - NGSS.P8 Obtaining, evaluating, and communicating information in 6-8 builds on K-5 experiences and progresses to evaluating the merit and validity of ideas and methods.

CTE Lab Safety Guidelines	Each student in a CTE/PLTW course will be required to complete a lab safety exam and score a 100% correct before being allowed to use any tools on projects. We expect students to responsibly and safely use the CTE equipment. Examples of equipment used in CTE courses may include and are not limited to the following: scissors, hot glue guns, box cutters, power tools, hand tools, measuring tools, electronic equipment, computers, medical supplies, adhesives, robotics equipment, food items (consumable and non-consumable).
Classroom Expectations	1. Have a Vision 2. Lean into Struggles. 3. Be a Learner, Not a Finisher 4. Feed Your Passion 5. Own Your Education. 6. Be Respectful 7. Cheerful Collaboration 1. Be seated and ready for class when the bell rings. *Detention for tardies will be assigned per LMS policy.* 2. Come prepared for class. Bring all necessary supplies. 3. Respect your teacher, your classmates, and yourself. 4. Listen and follow directions. 5. If it's not yours, don't touch it. Keep your hands and feet to yourself. 6. Follow all school rules. 7. The teacher dismisses the class, not the bell. 8. No food or drink around the computers and equipment 9. Do not visit gaming websites during class. Remain on our curriculum websites at all times.
Progressive Discipline *(LMS Policy)*	**Step 1:** Verbal warning **Step 2:** Student/teacher conference **Step 3:** Parent contact/conference **Step 4:** Detention and a parent contact **Step 5:** Office referral
Grading Policy & Scale *(MCS Policy)*	**60%** = Assessments **(Test, Mini-Assessment, Projects, Portfolio, Summative Coding Challenges, Quizzes)** **40%** = Daily Grades **(Basic Coding Challenges, vocabulary, Homework, Classwork, and Participation)** **Grade Scale:** 90-100 = A; 80-89 = B; 70-79 = C; 65-69 = D; <64 = F
Late Work Policy	Late work will be considered on a case-by-case basis.
Make-up Work/Test Policy	Students with excused absences will be allowed to make-up all work within three days of returning to school. It is the student's responsibility to ask for make-up work. Students can get with a classmate or

	ask the teacher for help. Work that is not made up will become a zero (including quizzes/tests). Many times, missed quizzes and tests can be made up during school.
Technology Policy	Student laptops should not be hard-wired to the network or have print capabilities. Use of discs, flash drives, jump drives, or other USB devices will not be allowed on Madison City computers. Neither the teacher, nor the school is responsible for broken, stolen, or lost laptops. Laptops and other electronic devices will be used at the individual discretion of the teacher.
Accommodations	Requests for accommodations for this course or any school event are welcomed from students and parents.
Materials & Supplies	Paper & Pencil, headphones with audio jack(not wireless) Wish List: clorox wipes, duck tape, colored copy paper, sharpies
Homework	All assignments and projects will be completed during class time.
Parent & Student Acknowledgment Form	***Student assignments will be posted in Schoology and on the codespace curriculum site; however, all grades will be posted in Powerschools. Thank you for your support and I encourage you to contact me with any questions or concerns. Students will return this signed copy and a digital version of this syllabus is available on schoology & my LMS website for reference. Please sign below that you have received and read the syllabus, will follow all lab safety guidelines and will abide by all policies. Thank You! Jodi Jones*** _____ **STUDENT FULL NAME (Please Print)** **BLOCK** **DATE** _____ **PARENT SIGNATURE** **PARENT PHONE NUMBER(S)** *Please include any concerns or notes to Mrs. Jones below:*