



2023-2024

Liberty Middle School

281 Dock Murphy Drive, Madison, Alabama 35758

Mrs. Joy Hearrington

Project Lead The Way - Flight & Space (PLTW FS) Technology Student Association (TSA) Advisor

<p>Teacher Contact Information</p>	<p>Email: jhearrington@madisoncity.k12.al.us Classroom Phone: 256-430-0001 ext. 83112</p> <p>This syllabus is subject to change. Please initial each page, sign the last page, and return asap. The digital syllabus in Schoology and on my teacher webpage is for your future reference.</p>
<p>Course Digital Platforms</p>	<p>Webpage Link: https://www.madisoncity.k12.al.us/Domain/2099 Schoology Link: https://madisoncity.schoology.com/home Distribution List: PowerSchool will be used for parent contact, including class updates and announcements. Please ensure with the LMS Front Office that your preferred email address and/or phone number is in PowerSchool correctly.</p>
<p>Textbook Information</p>	<p>There is a digital textbook for this course which is accessed via a login and password assigned to us from PLTW. We use Schoology as our lessons and activities organizer and PLTW as our curriculum resource. Please ensure your student brings their MCS Chromebook charged and ready for class each day, with their earbuds/headphones.</p>
<p>Course Description</p>	<p>The exciting world of aerospace comes alive through the Flight and Space (FS) class. Students become engineers as they design, prototype, and test models to learn about the science of flight and what it takes to travel and live in space. They solve real-world aviation and space challenges and plan a mission to Mars. <i>If forced to be in a virtual environment, we will do our best to replicate these projects to achieve course learning targets/objectives.</i> All assignments will also be listed in Schoology should a student be absent for any reason.</p>
<p>Course Prerequisites</p>	<p>None</p>
<p>Course Objectives</p>	<p>LO1.1 Persistently apply an iterative process to solve a problem or create an opportunity that can be justified; LO1.2 Solve a problem using computational thinking, analytical, and critical thinking skills; LO1.3 Analyze and describe design functionality by observation of an artifact; LO2.1 Design and conduct an experiment that investigates a question; LO3.1 Collaborate effectively on a diverse and multidisciplinary team; LO4.1 Communicate effectively for specific purposes and settings; LO5.1 Demonstrate the ability to manage multiple resources throughout a project; LO6.1 Explore a variety of careers related to engineering, biomedical sciences, and computer science; LO7.1 Demonstrate personal responsibility and initiative; LO8.1 Analyze the factors affecting flight; LO8.2 Represent data, and describe relationships and processes to make predictions and solve air traffic control problems; LO9.1 Identify potential reasons why people want to travel to space; LO9.2 Propose solutions to provide safe living conditions in space.</p>
<p>Course Goals</p>	<p>Students will:</p> <ol style="list-style-type: none"> 1. Explore the variety of careers related to engineering, biomedical sciences,

	<p>and computer science.</p> <ol style="list-style-type: none"> 2. Communicate effectively for specific purposes and settings. 3. Collaborate effectively on a diverse and multidisciplinary team. 4. Demonstrate personal responsibility and initiative. 5. Persistently apply an iterative process to solve a problem or create an opportunity that can be justified. 6. Analyze the factors affecting flight. 7. Represent data, and describe relationships and processes to make predictions and solve air traffic control problems. 8. Identify potential reasons why people want to travel to space. 9. Propose solutions to provide safe living conditions in space.
<p>Instructional Delivery Plan, Course Outline & Culminating Project</p>	<p>Unit 1: Flight The Science Of Flight, Use Aerodynamic Concepts To Explain How Aircraft Fly, Introduction To the Engineering Design Process, Investigate the Effect of Different Airfoils on Flight, Use Maps for Navigation, Explore Flight Crew Scheduling Criteria End Project: Aircraft Prototype, Create a Flight Plan Based on a Challenge Scenario</p> <p>Unit 2: Space Investigate How Scientists and Engineers Play a Vital Role In Space Travel, Space Discovery, and Living In Space; Explore Launch, Orbit, Landing, Maintaining Health in Space, and Maintaining a Stable Living Environment for Astronauts End Project: Design, Build, and Test an Improved Prototype of a System of Student’s Choice</p> <p>Unit 3: Destination: Mars Work in teams to design and model different aspects required to complete a mission to Mars. Collaborate to complete problems and present findings. Plan the astronaut crew, rocket specifications, crew daily activity schedules, Mars landing site, and Mars landing vehicle.</p> <p>Culminating Project: Design and Build a Prototype of an Aircraft and Create a Flight Plan Based on an Assigned Challenge Scenario. Challenge Scenarios Relate To Crew Scheduling, Maintenance Problems, or Route Changes.</p>
<p>Credentialing</p>	<p>None</p>
<p>CTSO Integration (LMS Career & Technical Student Organization is TSA.)</p>	<p>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. <i>TSA Based Activities relevant to Flight & Space include but are not limited to: Lab Safety Posters, Career Prep, Essays on Technology, Challenging Tech Issues, CAD Foundations, Problem-Solving, Technical Design, and Flight.</i> CAREER PREP is the TSA Project that will be incorporated into this course.</p>
<p>Embedded Numeracy Anchor Assignment (Flight Planning)</p>	<p>Students will fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation (L1.5). Students will write expressions that record operations with numbers and with letters standing for numbers (L1.2). Students use measurements and scales to create “astronaut pudding” and a menu for their astronaut based on their BMI (L2.4).</p>
<p>Embedded Literacy Anchor Assignment (Lesson Conclusions)</p>	<p>Students will use precise language and domain-specific vocabulary to inform about or explain the topic (L1.1 - L2.7). Students will produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience (L1.1-1.3, L1.5-L3.1). Students will draw evidence from literary or informational texts to support analysis, reflection, and research (L1.1-L3.1).</p>

<p>Embedded Science Anchor Assignment (Lesson 1 Flight)</p>	<p>Multiple Lesson 1 projects address the Next Gen Science Standard MS-ETS 1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem (Lesson 1 Paper Airplane, Straw Jet, and prototype designs).</p>
<p>Classroom Expectations</p>	<p>1. Be Respectful. 2. Lean into Struggles & Own Your Education. 3. Be a Learner, Not a Finisher 4. Feed Your Passion 5. Cheerful Collaboration</p> <p>1. Be in your seat when the tardy bell rings starting on bell work immediately. Don't wait to be told. <i>Detention for tardies will be assigned per LMS policy.</i></p> <p>2. Come prepared for class. Bring all necessary supplies, including a positive mindset for learning.</p> <p>3. Treat others as you want to be treated. Show respect for yourself and others at all times.</p> <p>4. Cell Phones should be off & put away unless instructed by the teacher otherwise.*</p> <p>5. If it's not yours, don't touch it. Keep your hands and feet to yourself.</p> <p>6. Be responsible for ALL technology and supplies.</p> <p>7. The teacher dismisses the class, not the bell.</p> <p>8. Behave in a manner conducive to learning for all.</p> <p>9. Do not visit gaming, video, non-Flight & Space curriculum websites during class.</p> <p>10. Follow all Lab Safety rules in class and all rules listed in your LMS Handbook, District Technology Policy & MCS Code of Conduct.</p> <p>*NOTE: Student misuse of cell phones/devices during class may result in a cell phone "time out" and/or from the use of devices in our class, on an individual basis.</p>
<p>Progressive Discipline (LMS Policy)</p>	<p>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</p>
<p>Grading Policy & Scale (MCS Policy)</p>	<p>60% = Assessments (Tests, Mini-Assessment, Projects) 40% = Daily Grades (Quizzes, Progress Checks, Classwork, Daily Activities & Participation) Grade Scale: 90-100 = A; 80-89 = B; 70-79 = C; 65-69 = D; <64 = F</p>
<p>Late Work Policy</p>	<p>The Student handbook policy for late work will be followed. If students have an unexcused absence a 0 will be assigned for missed assignments. If students have an excused absence, they will have a minimum of 3 days and a maximum of 1 week to complete missed assignments. Time extensions may be determined on a case by case basis for the level of difficulty of the assignment.</p>
<p>Make-up Work/Test Policy</p>	<p>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.</p>
<p>Technology Policy</p>	<p>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.</p>

<p>Accommodations</p>	<p>Requests for accommodations for this course or any school event are welcomed from students and parents.</p>
<p>Materials & Supplies</p>	<p>Each student should have a personal set of earbuds/headphones for in class use brought with them daily in a protective case in their backpack. It is also recommended that each student have a composition book OR a single-subject notebook that will stay in the class. (He/she will be given their own file folder in a file cabinet). Colored pencils, regular pencils, erasers, scissors, and a glue stick would be helpful if they could keep those in their backpack as well (or in their classroom notebook file).</p>
<p>Homework</p>	<p><i>It is extremely rare that there is homework in Flight & Space class other than thinking about projects and designs.</i> However, if a student does not use their time wisely in Flight & Space class, work does come home.</p>
<p>CTE Lab Safety Guidelines</p>	<p>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, robotics equipment, food items (consumable and non-consumable), balloons.</p>
<p>Parent & Student Acknowledgment Form</p>	<p><i>All Student assignments will be posted in Schoology; however, all grades will be posted in PowerSchool. Thank you for your support and I encourage you to contact me with any questions or concerns . A digital copy of this syllabus is available on the teacher webpage. Please initial each page and sign below that you have received and read the syllabus and will abide by all policies. It will need to be the paper copy that is signed. Please return the entire syllabus. The digital copy is for future reference. Thank You! Mrs. Joy Herrington</i></p> <hr/> <p>STUDENT FULL NAME (Please Print) BLOCK DATE</p> <hr/> <p>PARENT SIGNATURE PARENT PHONE NUMBER(S)</p> <p>PARENT EMAIL(S):</p> <p><i>Please include any concerns or notes to Mrs. Herrington below:</i></p>