

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



**Phone: 256-216-5313**  
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**Course Syllabus**  
**Principles of Engineering Fall 2024**  
**Instructor: Allison Turner**

**Dear Parent/Guardian,**

**Welcome to Principles of Engineering!**

**My name is Mrs. Allison Turner and I will be your student's Principles of Engineering teacher this semester. It is my fourth year at JC, and I am so happy to be teaching PoE again! This engineering class is full of math, science, and creativity. If you have any questions or concerns at any point during the semester, please feel free to reach out to me. Please submit this page of the syllabus on Schoology by Monday, August 5th.**

**Thank you,**  
**Allison Turner**

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**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 \_\_\_\_\_



**Course Description:** Designed for 10th or 11th grade students, this survey course exposes students to major concepts they'll encounter in a post-secondary engineering course of study. Topics include mechanisms, energy, statics, materials, and kinematics. They develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges, document their work and communicate effectively.

**Curriculum:** PLTW Engineering Principles of Engineering Curriculum is used in this course. Windows 10 Fundamentals are taught via the People's Resource Center Online Curriculum. These resources are available upon request. Standards Connections, Course Outline, and Course Resume can be found at: <https://www.pltw.org/curriculum/pltw-engineering>.

**Pre-Requisites:** Introduction to Engineering Design

**Co-Requisites:** Algebra II with Statistics or Algebra II with Trigonometry

**Credentialing:** Students become familiar with VEX V5 software and Vernier Graphical Analysis in this course. Student progress is tested with the PLTW EOC Exam. There are no CRIs associated with this specific class in the engineering academy. Starting in 2024, students will work with Python Coding software and have the opportunity to take a test gaining them a certification in 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.

**Late/ Make-Up Work:** Per JCHS Policy. All late work is to be submitted within 7 days of absence. Students must submit their late work online to the proper Schoology Assignment AND submit a "Late Work Form" Submission to receive credit. The late work form is checked every 2 weeks and student grades are updated then. If a student is absent, their missed printed materials will be kept with Mrs. Turner. Students are responsible for checking Schoology when absent.

**Integrated Assignments and Standards:**

**TSA (Technology Student Association) CTSO Integration:** Technology Student Association is a National Career Technical organization where students can use knowledge gained from Engineering courses. JCHS's team competes at Alabama TSA convention every year in the **Engineering Design Competition**.

**Embedded Numeracy Anchor Assignment:** Students will calculate moment of inertia and research values for modulus of elasticity, then use those values to calculate beam deflection. Students will use their knowledge of proportions in mathematics to describe how modulus of elasticity and moment of inertia affect beam deflection. To view all mathematics standards connections, please visit <https://www.pltw.org/curriculum/pltw-engineering> and view the "Standards Connections" under Principles of Engineering.

**Embedded Literacy Anchor Assignment:** In this class, students participate in a debate regarding energy solutions. Students are assigned a stance on various energy-related issues, then they research, make a presentation, and debate the best solution for the future of the US. To view all literacy standards

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connections, please visit <https://www.pltw.org/curriculum/pltw-engineering> and view the "Standards Connections" under Principles of Engineering.

**Embedded Science Anchor Assignment:** Every assignment we complete in this class is directly related to science. To view all standards, please visit <https://www.pltw.org/curriculum/pltw-engineering> and view the "Standards Connections" under Principles of Engineering.

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

**Supplies:** In Principles of Engineering, Binders and Engineering paper is provided and are used as the Engineering Notebook. **Students are responsible for bringing: Pencils and School Chromebook.**

### **Procedures**

#### **My Mrs. Turner Specific Rules:**

1. Always treat others with respect. We do not make jokes at the expense of others in this classroom.
2. Do not throw things across the room.
3. Do not waste classroom materials.
4. Do not speak over me while I am teaching.
5. Clean up all materials when you leave the classroom and leave it better than you found it.

#### **Technology Rules in the Classroom:**

- 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.
- If technology is needed in the classroom, then school issued Chromebooks must be used. Personal electronic devices may only be used at the teachers' discretion. Personal electronics are to be placed in the designated location when students arrive to class. Devices will be returned at the end of class (i.e. leave in the location even when they go to the restroom). Electronic devices may be out before school, during class change, lunch and after school. Parents, guardians, and other family members should call the front office in case of emergency.
- The use of Artificial Intelligence (AI) tools to complete assignments without prior disclosure and approval is strictly prohibited. Any undisclosed use of AI tools will be considered academic dishonesty and will result in an automatic grade of zero for the assignment in question. All assignments are subject to verbal review.

#### **Computer/Internet Appropriate Use Policies:**

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.



**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.

**Discipline**

- Any discipline in my classroom will be a product of the approved Madison City Schools Classroom Management Plan per the MCS Code of Conduct.
- A teacher may exclude from his or her classroom any student who does any of the following:
  - .Engages in disorderly conduct (has a specific definition)
  - Behaves in a manner that obstructs the teaching or learning process of others in the classroom
  - Threatens, abuses, intimidates, or attempts to intimidate an education employee or another student
  - Willfully disobeys an education employee
  - Uses abusive or profane language directed at an education employee

**Instructional Delivery Plan**

<b>18 Week Plan**</b>	
<b>Week 1</b>	Introduction, Safety, Portfolios
<b>Week 2</b>	Engineering Design Process Review
<b>Week 3</b>	Windows 10 Fundamentals
<b>Week 4</b>	Simple and Compound Machines
<b>Week 5</b>	Simple and Compound Machines
<b>Week 6</b>	Robotics
<b>Week 7</b>	Robotics
<b>Week 8</b>	Transportation
<b>Week 9</b>	Chemical and Electrical Engineering
<b>Week 10</b>	Chemical and Electrical Engineering
<b>Week 11</b>	Statics
<b>Week 12</b>	Statics
<b>Week 13</b>	Statics
<b>Week 14</b>	Artificial Intelligence
<b>Week 15</b>	Kinematics
<b>Week 16</b>	Final Design Problem
<b>Week 17</b>	Review/ EOC Exam
<b>Week 18</b>	Review/Final Exam

\*\*These dates are subject to change at any point in the semester.