*RETURN THIS SIGNED COPY TO THE TEACHER. IF YOU NEED A COPY, PLEASE REFER TO THE GOOGLE CLASSROOM OR THE SCHOOL WEBSITE.*

**COURSE DESCRIPTION:**

This course follows the Project Lead the Way engineering curriculum entitled “Principles of Engineering.” Through problems that engage and challenge, students explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and automation. Students develop skills in problem solving, research, and design while learning strategies for design process documentation, collaboration, and presentation. The issues faced in POE give a basic foundation needed for all areas of engineering and engineering technology.

**COURSE REQUIREMENTS**:

Suggested prerequisites for the course are Chemistry and Geometry.

**COURSE NOTE:**

Students completing this course can use the credit as a science course or a career tech course. Additionally, this is an advanced course. Students will receive extra quality points (0.5) on his/her GPA for this course. For example, an A in this course will count as a 4.5 on the GPA rather than a 4.0.

**COURSE FEES:**

The total fee for this course is $40 which is the sum of $20 for course materials, $5 for membership in the Technology Student Association (TSA), and $15 for an Engineering Academy t-shirt. All other required materials will be provided.

**FIELD TRIPS:**

Students will have the opportunity for two field trips during the school year, one per semester. The cost will vary depending on the destination and the level of student participation in fundraisers.

**FUNDRAISERS:**

We will conduct fundraisers during the school year so that each student has the opportunity to earn enough to pay for field trips, including the (tentatively planned) 2025-2026 field trip to Universal Studios in Orlando. Additional funds that are earned will go directly into the program to purchase lab materials for student benefit. Every student is encouraged to participate in any fundraisers.

**SOCIAL MEDIA:**

The Engineering and Computer Science Academy has two social media accounts - “Hartselle High Engineering” on Facebook and “hartsellehighengineering” on Instagram. As the teacher, Mrs. Pittman will post pictures about classroom activities throughout the year. IF YOU DO NOT WANT YOUR CHILD’S PICTURE and/or NAME TO BE POSTED ON SOCIAL MEDIA, please inform Mrs. Pittman using the contact information above. Otherwise, your signature on this form acts as consent for your child’s image to appear on social media.

**GRADING:**

* Students will receive grades based on participation, teamwork, quizzes/tests, and projects. Final project grades will depend on scientific thought and problem solving more than the success/failure of the project attempt.
* Late work will be accepted for ONE WEEK after the original assignment due date for 70% credit.
* Assignments that are over one week late will not be accepted for any credit.
* Assignments that are not the original work of the student will receive ZERO credit.

**COURSE OUTLINE:**

| Unit 1: Energy and Power* Mechanisms
* Energy Sources
* Energy Applications [*Embedded Literacy*]
* Design Problem - Energy and Power
 | Unit 2: Materials and Structure* Statics
* Material Properties
* Material Testing
* Design Problem - Materials & Structures
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| --- | --- |
| Unit 3: Control Systems* Machine Control
* Fluid Power
* Design Problem - Control Systems
 | Unit 4: Statistics and Kinematics* Statistics
* Kinematics
 |

**COURSE EXPECTATIONS:**

1. Academic Honesty – All students are expected to do their OWN work as well as participate in groups
2. Respect others and other people’s property at all times
3. Speak at appropriate times, using appropriate voice and language
4. Follow directions
5. No food or drink allowed in labs
6. Adhere to all computer and internet policies
7. No cell phones unless the use is approved by teacher for educational purposes
8. Adhere to all safety rules
9. Students are responsible for cleaning up after themselves
10. **Have fun…and learn great things!**

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**STUDENT NAME STUDENT SIGNATURE DATE**

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

**PARENT/GUARDIAN NAME PARENT/GUARDIAN SIGNATURE DATE**