

# Project Lead the Way Aerospace Engineering Syllabus 2017 - 2018



Waccamaw High School  
2412 Kings River Road  
Pawleys Island, SC 29585



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## COURSE OVERVIEW

Aerospace Engineering(AE) ignites students' learning in the fundamentals of atmospheric and space flight. Aerospace Engineering is one of the specialization courses in the Project Lead the Way (PLTW) Engineering program. The course deepens the skills and knowledge of an engineering student within the context of atmospheric and space flight. Students explore the fundamentals of flight in air and space as they bring the concepts to life by designing and testing components related to flight such as an airfoil, propulsion system, and a rocket. They learn orbital mechanics concepts and apply these by creating models using industry-standard software. They also apply aerospace concepts to alternative applications such as a wind turbine and parachute. Students simulate a progression of operations to explore a planet, including creating a map of the terrain with a model satellite and using the map to execute a mission using an autonomous robot.

## SUPPLIES

Ongoing supply of notebook paper  
Ongoing supply of graph paper  
Folder with pockets  
Ongoing supply of pencils and erasers  
Blue or black ink pen  
Graphing calculator (*optional*)  
Headphones (*recommended*)

***\*Materials check will be conducted on Monday, August 28!\****

## APPRECIATED DONATIONS

Glue sticks, paper towels, tissues, Clorox wipes, and/or hand sanitizer

## ASSESSMENT/GRADING POLICY

- Daily Assignments - **25%**
- Quizzes - **15%**
- Labs / Engineering Notebook - **30%**
- Major Assessments / Projects - **30%**

## GRADING SCALE

**A:** 90 – 100  
**B:** 80 – 89  
**C:** 70 – 79  
**D:** 60 – 69  
**F:** 59 and below

The average of the 4 quarter grades will account for eighty percent (80%) of the final grade in the course. At the conclusion of the course, students will take two major assessments to be averaged for their "final exam" grade in the gradebook. They will complete both the national PLTW End of Course ("EOC") Examination and a final exam written by Mrs. Fidler. The national EOC is written by Project Lead the Way and is subject to assess any topics covered throughout the school year. It is typically given at the end of May, and students will take it online. Please note that the average of these exams accounts for twenty percent (20%) of the student's entire grade for the course, so it is imperative that they do their best. These tests cover material from the entire AE curriculum, therefore it is vital that students maintain detailed notes and examples throughout the year in their engineering notebooks. Activities and assessments leading to the End of Course test are intended to best prepare students for the final exam.

## HOMEWORK

Homework is used as one component to measure student performance relative to academic objectives. It will be given some nights and is due at the **beginning** of class. Assignments will be graded periodically without notice to ensure that every effort is being made to grasp the material presented in the course. Homework may be graded for accuracy or for completion. Completion means that appropriate work is shown and all the problems were attempted. Late homework will not be accepted and will earn a grade of zero (+0).

## LATE WORK, AND ABSENT WORK

If a student is absent, they missed something important. IT IS THEIR RESPONSIBILITY to find out what they missed and complete their work upon their return to school. If the absence is excused by the office (illness, doctor appointment, family emergency, etc.), students will have as many days as they were absent to make up the work for full credit. For example, if they are absent one day, they will have one extra day to make up and turn in the missed work. Late credit will be given for unexcused absences or poor self-management (leaving materials at school, poor planning, or misuse of time, etc.). For each day the assignment is late, there will be a **10% deduction** from the original score. Work that is turned in too late to earn credit will not be accepted.

## TESTS

Tests will be given at the end of each unit to check for mastery of objectives taught in class. My goal is for mastery in *all* objectives taught. Therefore, in certain circumstances, I will individually re-teach objectives not mastered and allow for a retest to show mastery. In these cases students may be asked to come before or after school for mandatory tutoring. Please refer to the Grading Policy above for more information on the EOC for this course.

## QUIZZES

Quizzes are short assessments of key concepts or skills that should help determine your basic level of mastery. *Quizzes may be announced or unannounced.* These assessments may also be given at the end of class, in the form of an exit ticket, to determine how well you understood the day's lesson. Quizzes are intended to help you track your progress and identify areas that require additional explanation.

## SECOND CHANCE POLICY

In order to improve student learning and increase mastery of state objectives, students will have the opportunity to make up points missed on a major assessment (*tests only*) by re-taking a different version of the assessment. The gradebook will reflect the average of the first and second attempt on the assessment. The highest possible score a student can receive is an 85%. The student must arrange an appointment with me and retake the test within *10 school days* from the date the original assessment is returned. Extensions will not be granted for this policy.

## OPPORTUNITY FOR COLLEGE CREDIT

PLTW students are better prepared for postsecondary studies and more likely to consider careers in critical STEM fields than their non-PLTW peers, research has shown. More than 100 college and university partners actively recruit PLTW students, providing them with opportunities such as admissions preference, scholarships, and course credit. Feel free to visit the PLTW website for more information. Partnering schools and college credit criteria will be distributed to students throughout the course.

## ENGINEERING NOTEBOOKS

You will be expected to keep an engineering notebook of activities/labs/demos and active learning exercises presented during the course. The notebook will be provided to you in class and will include the following:

- All notes and handouts provided in class
- All written homework/in-class assignments
- EOC preparation materials

*Notebook quizzes may be given periodically (with or without notice). Notebooks will also be collected and graded periodically.*

## STUDENT DISCIPLINE

Mature behavior is expected by all class members. Disruptive behavior that interferes with teaching and/or learning will not be tolerated, and may result in an administrative action.

## TUTORING/EXTRA HELP

Tutoring will be offered before and after school, on a rotating schedule. The tutoring schedule will vary, depending on the quarter. Tutoring schedules can be found on my classroom wall each week.

## BEHAVIOR MANAGEMENT

### Expectations:

- Be on time/prepared for class
- Participate in class/complete all work
- Respect others' ideas, feelings, and property
- Follow all school and district policies

*\*Note: Some infractions may require immediate administration involvement.\**

### Consequences:

- 1<sup>st</sup> Offense: Verbal warning
- 2<sup>nd</sup> Offense: Teacher-student conference
- 3<sup>rd</sup> Offense: Teacher-parent conference
- 4<sup>th</sup> Offense: Referral to administration

## CELL PHONE POLICY

Due to ever increasing capabilities of cell phones and the distractions they offer, they are not to be used in the classroom unless specifically instructed to do so. In order to lessen interruptions during instruction, students must keep cell phones silent and out of sight in a pocket or bag. In certain cases, cell phones may be collected at the beginning of class and will be housed in a secure area during the instructional period. Any phone that is not turned in when prompted or is seen or heard during instructional time will be confiscated and turned into administration.


There will be no exceptions and no second chances. Students who refuse to comply will be referred to administration. This policy also applies to iPods, tablets, electronic readers, and any other electronic or communication devices.

## SUCCESS IN AEROSPACE ENGINEERING

Here are a few helpful suggestions on how to be successful in this course:

1. Listen and take good notes
2. Ask questions
3. Give maximum effort and push your thinking
4. Utilize all resources provided to you
5. Keep a positive attitude and stay focused

**Profile of the South Carolina Graduate**

 **World Class Knowledge**



- Rigorous standards in language arts and math for career and college readiness
- Multiple languages, science, technology, engineering, mathematics (STEM), arts and social sciences

**World Class Skills**

- Creativity and innovation
- Critical thinking and problem solving
- Collaboration and teamwork
- Communication, information, media and technology
- Knowing how to learn

**Life and Career Characteristics**

- Integrity
- Self-direction
- Global perspective
- Perseverance
- Work ethic
- Interpersonal skills

 Approved by SCASA Superintendent's Roundtable and SC Chamber of Commerce 

I look forward to learning with you this year. Let's work hard while making engineering fun!

Emilee Fidler

# Guardian Survey

Student Name: \_\_\_\_\_

Guardian Name: \_\_\_\_\_

Relationship to Student: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Email: \_\_\_\_\_

Preferred Communication from Teacher:

Phone or Email Time of Day? \_\_\_\_\_

Would you like to receive emails regarding important announcements or assignments for your student? You will be added to a group email. You will not receive emails from anyone other than Mrs. Fidler. *(Circle one)*

Yes or No

Do you have access to a computer and internet at home? \_\_\_\_\_

Does your child have allergies? \_\_\_\_\_

Is there anything I should know about your child? (Medical condition, trouble seeing the board, bladder issues, anxiety, etc.)

How has your student performed in math in the past?

How can I best reach your student this year?

What makes you most proud of your student?

Feel free to contact me with questions, concerns,  
and updates throughout the year.

Emilee Fidler

efidler@gcsd.k12.sc.us

**Please Sign and Return for first Quiz Grade:**

"I have read the entire Syllabus and understand the expectations set for Mrs. Fidler's class."

Student Name: \_\_\_\_\_ Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Parent Name: \_\_\_\_\_ Parent Signature: \_\_\_\_\_ Date: \_\_\_\_\_