Aerospace Engineering (AE)

Academic Year: 2020-2021

Queen Anne’s County High School Room 318

Teacher: Mr. Gill
Department: Career and Technology Education
Course: Aerospace Engineering
Credit: 1

CONTACT INFO:
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COURSE DESCRIPTION:
Aerospace Engineering (AE) is the study of the engineering discipline which develops new technologies for use in aviation, defense systems, and space exploration.

The course explores the evolution of flight, flight fundamentals, navigation and control, aerospace materials, propulsion, space travel, orbital mechanics, ergonomics, remotely operated systems and related careers. In addition the course presents alternative applications for aerospace engineering concepts.

Utilizing the activity-project-problem-based (APPB) teaching and learning pedagogy, students will analyze, design, and build aerospace systems. While implementing these designs, students will continually hone their interpersonal skills, creativity, and application of the design process. Students apply knowledge gained throughout the course in a final multi-media project to envision their future professional accomplishments.

Aerospace Engineering is a high school level course that is appropriate for 10th, 11th, or 12th grade students interested in Aerospace. It is recommended that students are concurrently enrolled in college preparatory mathematics and science courses and have successfully completed the Principles of Engineering (POE) course.

AE is one of the specialization courses in the Project Lead the Way high school engineering program. The course applies and concurrently develops secondary-level knowledge and skills in mathematics, science, and technology.

The course of study includes:

- Introduction of Aerospace Engineering/Evolution of flight
  - Physics of flight
  - Airfoils
  - Air navigation
  - Air traffic control
  - Global positioning system, GPS
• Aerospace Design
  o Aerospace materials
  o Turbine, rocket and space propulsion
  o Flight Physiology
• Space
  o Space law
  o Space junk
  o Orbital mechanics
• Alternative Applications
  o Alternative applications
  o Remote systems
  o Rover design and building
  o Aerospace careers

CORE LEARNING SKILLS:
Working in teams and on your own, you will learn about documenting your solutions, solving problems, and communicating your solutions to other students and members of the professional community of engineering and engineering design.

TEXTBOOKS/MATERIALS
1. Engineering Notebook (imperative)
2. Pen/pencil
3. USB Flash Drive

Classroom Procedures:
1. Students are expected to be respectful of the teacher, facility, and each other. Talking out of turn and foul language will earn a detention.
2. No food or drink is allowed in the classroom (H2O exception).
3. Students are expected to be punctual and prompt with regards to attendance and assignments. (Late 3 times unexcused = detention)
4. Students are expected to perform their own work. Cheating, plagiarism, or turning in others work as ones own is unacceptable and will result in a zero grade for that assignment.
5. Each student is responsible for maintaining a class journal (spiral or composition book) and a 2” portfolio (3-ring binder with dividers) which is suitable for organizing and storing worksheets, handouts, notes, and projects.
6. Students will need a pencil, their journal, and their 3-ring portfolio everyday (may be stored in classroom).
7. Our computers are in excellent condition. Any misuse or damage done to them will result in disciplinary action as well as the student being held financially responsible for their repair. All computers are off limits until given permission. Unlawful computer use will result in loss of privileges.
8. Violation of classroom policies and procedures will result in disciplinary action (parent contact, detention, referral, or other as determined by the teacher).
9. Hats are not allowed. No student will wear a hat in my classroom or shop
10. Cell phones will be off and out of sight in my class and my shop.
    • Please read - Hats and cell phones will be taken, parents called, and detention given.

Please contact me if you have any questions.
CONFIRMATION FORM

Student Name: ________________________________

Period: ________

**Cell phones will be off and out of sight in my class and my shop.**

**Hats and cell phones will be taken, parents called, and detention given.**

I have completely read and **fully** understand all of the information given to me in the Advanced Design Applications Syllabus. I also give permission for my son/daughter to use the Internet and participate in any video or photograph production for educational use.

Parent/Guardian’s name___________________________________________

Parent/Guardian Signature__________________________________________________________________________

Parent/Guardian’s Home Phone#___________________________________________

Parent/Guardian’s Work Phone #___________________________________________

Parent/Guardian’s e-mail address___________________________________________

Student’s name_____________________________________________________

Student’s signature_______________________________________________

Date__________________________

*Please ensure it gets signed and returned to Mr. Gill as soon as possible.*

**COMPUTER USE POLICY:**

We are dealing with a highly equipped professional computer lab. The machines you will be using this semester are state of the art, professional grade. Computer misuse of ANY kind will not be tolerated. Each student will be assigned a specific computer for the entire semester; this means your computer will be your responsibility when you are using it. Any damages or problems must be reported at the beginning of class or as soon as they happen so it may be documented. If there is anything wrong with your machine when you turn it on, please REPORT IT!
GRADING POLICY:
Student progress will be evaluated in the following areas:
Final Exam................................................................. 15%
Summative Assessments ........................................... 45%
Formative Assessments.............................................. 40%

EXPLANATION OF ASSESSMENTS
Students will be graded using a variety of methods both summative and formative. The summative assessment may include daily and weekly quizzes, and tests. The formative assessment may include class assignments, project and program assignments. In addition, the student must complete a portfolio, a reflection of his/her experiences as part of the final assessment.

RESUBMISSION OF ASSIGNMENTS
It is my expectation that all work and projects submitted are of the highest quality and fully meet the standards and objectives of the assignment. Assignments may be resubmitted as many times as necessary in order to meet these expectations. After the original submission the maximum possible grade will be an 85% and will decrease by 5% with each subsequent submission of the assignment. Students have seven days to return their corrected assignment from the day it was graded. In order for this to be applicable, the original assignment must be turned in on time and completed! Any work not submitted on time will not be collected and will receive a zero. You will have seven days to resubmit assignments from the time they were returned to you.

-PLEASE REMEMBER – NO HATS, NO EAR PHONES, AND NO CELL PHONES ALLOWED

DAY TO DAY PROCEEDINGS OF AE
Each day will begin with a review of the daily objective, this is the guide that students will follow to be successful each day. Essential questions will not be given on a daily basis, however, they will be given at the beginning of each lesson. Students are expected to turn in their essential questions at the conclusion of the lesson. The instructor is not responsible for lost or stolen class work; all work can be saved to the LMS, flash drive, or your local network space.

MAKE UP WORK
It is the student’s responsibility to contact the teacher for missing work stemming from absence, sports, or missed classes. The expectation is for the student to come to the teacher for their missing assignments upon their return to class.

ATTENDANCE POLICY
You are expected to be in class on time each day. The first offense will result in a warning, as well as being marked late. The second offense will result in a call home, as well as being marked late. The third offense, you will be documented late, and you will serve detention.

STUDENT EXPECTATIONS
My expectation is that you as a student, conduct yourself in a professional and mature manner. You are expected to take notes in class when you decide they are necessary. You will be responsible for all information that will be reflected on quizzes and exams. Students are expected to take good notes that will facilitate their understanding of course content. It is my goal that students retain this information by taking notes, and they will be expected to take notes.
**Period 1 Online Learning**
We will have live online class (Synchronous) on Monday and Wednesday from 10:15 to 11:00. It is important that you participate with the live class and assignment to get full credit for the class.

On Monday-Wednesday-Friday (Asynchronous) you will have assignments to complete that will be due by Midnight the same day.

Check-in Day and Asynchronous Learning – Wednesday @ 10:00am-10:10 am  
Office Hours – Monday, Tuesday, Thursday & Friday @ 8-10:15am & 2-3:30pm

**Period 4 Online Learning**
We will have live online class (Synchronous) on Tuesday and Friday from 12:45 to 1:30. It is important that you participate with the live class and assignment to get full credit for the class.

On Monday-Wednesday-Friday (Asynchronous) you will have assignments to complete that will be due by Midnight the same day.

Check-in Day and Asynchronous Learning – Wednesday @ 10:30am-10:40 am  
Office Hours – Monday, Tuesday, Thursday & Friday @ 8-10:15am & 2-3:30pm

**ONLINE LEARNING EXPECTATIONS**
Synchronous – Join the video conference on time and have materials ready. These materials include pencil, paper, calculator and any websites needed to complete math work. Have Schoology open and ready to go in a browser. You are expected to be on the video conference for the duration of class. Please find a quiet place in your house and give yourself an area to work.

Asynchronous – Assignments that are asynchronous are to be done on your own; however, I am available for help during the designated asynchronous period. Also during this time you may be asked to attend a video conference for small group instruction. Small group instruction, if assigned, is mandatory.

Check-in Day – Every Wednesday there will be a brief 10 minute video conference or check in to provide a brief period of instruction and to ensure all students are on track with the current assignments. Students will also complete an asynchronous assignment on check-in day.

Office Hours – Every day except for Wednesday there are Office Hours set aside for reteaching, 1:1 or group tutoring, small group instruction and student/parent meetings. You may schedule a time during office hours for tutoring. You may also attend a tutoring or instructional video conference during office hours. Office hours are considered part of the school day, so tutoring or conferences scheduled during this time are mandatory. If there is an instructional conflict during the requested time, we will work together to find a time that works.

**How to address the change in grading?**
Due to the shift to virtual learning for the Fall semester, the high school grading policy has been adjusted in order to provide students a better method to demonstrate their mastery of the content. The grades will now be divided into two categories: Mastery Assessments (50%) and Progress Assessments (50%). The previously utilized Final Exam category has been incorporated into the Mastery Assessment category in order to better align with online learning. Mastery Assessments will continue to be any assignment that demonstrates the summation of a student’s learning - tests, projects, essays, etc. Progress Assessments will continue to be any assignment that demonstrates a student’s progressing towards mastery of a concept - daily work, quizzes, discussion participation, etc.
Students will have three days from the assigned due date to submit work late; each day after that, the assignment will be docked 10% off the final score. Teachers will establish a due date and a deadline for each assignment. After the deadline, late work will not be accepted. In extenuating circumstances, please work with the teacher directly.

How to address Academic Dishonesty?

All students at Queen Anne’s County High School are expected to conduct themselves with great pride in academics and the community at large. To this end, it is expected that all students will maintain academic integrity in every assignment. Work must be completed individually unless otherwise directed by the teacher. In our virtual learning environment, student work may only include the electronic resources provided or recommended by the teacher. Submitting work copied from non-approved electronic resources such as an online essay writing site or PhotoMath is still considered plagiarism. Plagiarism (the practice of taking someone else's work or ideas and passing them off as one's own) is a severe offense at QACHS and will result in immediate consequences, such as:

- Parent Contact by email or phone
- Immediate Zero on the Assignment (Possible “redo” of the assignment for partial credit is at the discretion of the instructor)
- Conference with the Academic Dean

Examples of Academic Dishonesty (not an exhaustive list):

- Using unauthorized materials and/or resources
- Copying work from another student, or from the web
- Working with other students on an assignment intended for individual work
- Having anyone else but you complete any part of your coursework for you
- Using online searches to find answers to your assessment questions
- Posting answers to assessment questions online

How to address attendance?

In order to be marked present for each class, each day, students must login to Schoology for each class, each day, and complete any work assigned for that day. Students should contact their teachers and guardians should contact the front office if a student must miss a class, or a full day of classes, in order to ensure that the missed instruction is marked as an excused absence. Students are responsible for making up any and all work missed due to an excused absence in order to receive credit for that work. All make up work must be completed by the established deadline or other arrangements must be made with the teacher.

How to handle Parent/Student Sign offs?

The school will send out a Google Form to each parent asking them to virtually sign off on their student’s teachers’ syllabi. That’s not a perfect system, but better than attempting to track down mailed paperwork, or sending multiple google forms to each parent for virtual signoff.

Class participation:
Participation in class discussion and lab activities are a required part of this class.

Lab safety/health:
It is the responsibility of the students to follow the training of safe practices in the Technology Lab. The safety program consists of more than lecturing and posting safety rules and regulations. It includes instruction that actively involves the students in learning and choosing behaviors that promote the safe use of equipment that is used in the Technology Lab. The implementation and promotion of safe practices in the Technology Lab to prevent incidents and injuries to students are the responsibility of everyone. If the student does not follow the rules of the lab they will not be allowed to participate in the activities.
I have read the Foundations of Technology Syllabus for Mr. Gill’s class along with my son/daughter and we agree to its terms.

**Tools and Machines Permission Slip**
Upon the signing of this form I am granting my son or daughter permission to participate in their respective technology education course taught by Mr. Gill at Queen Anne’s High School during the 2017-2018 school year. I understand that my son or daughter’s participation in the technology education course may require their use of potentially dangerous tools and machines. By signing and returning this form, I am acknowledging all of the above, granting my permission for my son or daughter to participate in a technology education class, and releasing Mr. Gill and Queen Anne’s High School from any and all liability related to my son or daughter’s participation in his/her respective technology education class.

Parent/Guardian *(printed name)*  __________________________________________________________

Parent/Guardian *(signed name)*  __________________________________________________________

Student *(printed name)*  __________________________________________________________

Student *(signed name)*  __________________________________________________________

Student’s school email address __________________________________________________________

CONTACT INFORMATION

**HOME PHONE**  __________________________________________________________

**CELL PHONE**  __________________________________________________________

**HOME E-MAIL ADDRESS**  __________________________________________________________