**Course Title:** 703045y - Foundations of Engineering & Technology

**Teacher Name:** A. Gathing  
**E-mail:** gathinga@fultonschools.org

**Room:** E-18

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**Course Description:**
Foundations of Engineering and Technology is a career technology course at Centennial High School. Successful completion of this course will increase the student’s technological literacy and problem solving skills, expose the student to career opportunities in technology and engineering, and provide opportunities for the student to learn and experiment with engineering design principles. In addition, this course offers the student the unique opportunity to integrate science and mathematics principles to the understanding of engineering disciplines and real world technological solutions. Each student will participate in the engineering design process from the business and technical perspectives.

**Standards:**
- **STEM-FET-1** Demonstrate employability skills required by business and industry.
- **STEM-FET-2** Develop an understanding of engineering and technology and describe the principal fields of engineering specializations (e.g., aeronautical, automotive, chemical, civil, industrial, mechanical, computer software, electrical, and biomedical) and identify associated career tracks.
- **STEM-FET-3** Identify the history of technology and engineering and its impact on society in the past, present, and future.
- **STEM-FET-4** Demonstrate and follow safety, health, and environmental standards related to the Science, Technology, Engineering, and Math (STEM) workplaces.
- **STEM-FET-5** Identify criteria of usage, care, and maintenance for tools and machines.
- **STEM-FET-6** Apply fundamental principles of the engineering design process.
- **STEM-FET-7** Use appropriate technology to collect, record, manipulate, analyze, and report data.
- **STEM-FET-8** Students design a solution to an engineering problem applying math and science principles.
- **STEM-FET-9** Demonstrate the application of STEM in the real world.
- **STEM-FET-10** Students explore how related career and technology student organizations are integral parts of career and technology education courses. Students will develop leadership, interpersonal, and problem-solving skills through participation in co-curricular activities associated with the Technology Student Association.
Textbooks:  
**Engineering Your Future** by Gomez, Oakes, & Leone, Published by Great Lakes Press, Inc.

Software:  
Autodesk Suite, Amatrol, MS office 365

Career opportunities  
Students will learn about different engineering disciplines (i.e. industrial, mechanical, electrical). Architecture is another field that will be presented to students.

Projects  
Measurements/Safety/Engineering History/Engineering Disciplines/Engineering Modules/Can Crusher/CO2 Cars

Expectations/ Course Requirements:  
Much of what we do in this class will emulate the real world engineering environment. This is designed to help prepare students to be a more productive, trusted and valuable employee. Participation and a good attitude is expected! Independence and on task behavior is expected. Teamwork and group cooperation is a necessity. All students are to act as young adults in the classroom. They will treat others and be treated with RESPECT at all times. Failure to act responsibly can result in class failure and possible expulsion from the lab.

Availability for Extra Help:  
Help sessions may be scheduled before school. Students must request help sessions twenty-four hours in advance.

Technology Student Association – Details will be forthcoming

Methods of Instruction - Lecture, individual and group projects, PowerPoint presentations, modular instruction, guest speakers, videos, and independent student work will all be utilized for learning. Most videos are produced for educational purposes, but a couple of commercial videos with a rating of PG -13 will be shown. If there are any concerns about this rating, please advise me of your concerns and an alternate lesson will be provided for your student.

Teacher expectations and class rules:  
Be prompt. Be prepared. Be courteous. Be positive. Be respectful. School rules will be enforced. Refer to student handbook. TARDY POLICY -  
1st offense – verbal reprimand,  
2nd offense – private detention (7:45 am),  
3rd offense – office referral. All further tardies will result in an office referral.
**Makeup Work:**
All missed work and assessments are the responsibility of the student when they are absent from school. A student who is absent on the class day before a regularly scheduled assessment will be responsible for completing the assessment on the regularly scheduled day and time. Students who have been absent more than two consecutive days (including the assessment day) will be given five (5) school days to make up the assessment and/or other assignments. This does not include major projects, research papers, etc., where the deadline has been posted in advance. The teacher has the discretion to grant a longer period of time to make up work if there are extenuating circumstances.

**Grading Calculations:**

**Expectations/Course Requirements:**
Much of what we do in this class will emulate the real world engineering environment. This is designed to help prepare students to be a more productive, trusted and valuable employee. Participation and a good attitude is expected! Independence and on task behavior is expected. Teamwork and group cooperation is a necessity. All students are to act as young adults in the classroom. They will treat others and be treated with Respect at all times. Failure to act responsibly can result in class failure and possible expulsion from the lab.

**Grading Scale:**

- 90-100 A
- 80-89 B
- 70-79 C
- 0-69 F

<table>
<thead>
<tr>
<th>Formative (Quizzes, journals, notes)</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Sem / 2&lt;sup&gt;nd&lt;/sup&gt; Sem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summative (Test, Master projects, 20 time)</td>
<td>40% / 40%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20% / 20%</td>
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**Units of Study**

**2019 Centennial Recovery Policy**

*For students whose cumulative average is a 79% or below*

Step 1: Student initiate a conversation with the teacher(s)
Step 2: Student turn in ALL missing assignments for the grading period (6 week term)
Step 3: If average remains below 80%, students will meet with the teacher to choose which assessment(s) they would like to retake (*students must attend help session prior to retake*)
Step 4: Repeat as needed

*All assignment and assessments given a 6 week grading period must be completed and / or before the end of that 6 week period

**Late assignments will be penalized 10 points

***Retakes of assignments will be assessed at 100%
Units of study

2019 Centennial Late Work Policy
All assigned work is due at the beginning of class on the assigned due date. Any late assignment will be assessed a 10 point penalty. It is up to the teacher’s discretion to decide whether to accept the original assignment or require an alternative assignment for late work.

REQUIRED SIGNATURES
Directions: Complete with your parents the blanks below as indicated.

Student Syllabus Review
I, ____________________________________________________________, have read the class syllabus. I will attempt to successfully complete the course to the best of my ability. I understand that computers, Internet, materials, and equipment are to be utilized only for the assignments provided and that improper use may result in administrative referrals and the removal of the privilege of using said instructional materials.

_________________________________________ Student
Signature ____________ Date

Parental Syllabus Review
As the parent/guardian of ____________________________________, I have read the class syllabus. I will attempt to help my son/daughter to complete the course successfully. I have addressed the requirements of the course.

_________________________________________ Parent/Guardian
Signature

_________________________________________ Home Phone  Best hours
to call _____________

_________________________________________ Work Phone  Best hours
to call _____________

e-mail address
Parental Permission Form
For Instructional Use of Videotape

Please indicate below whether or not you give permission for your child to view DVDs or videotapes that are rated Parental Guidance (PG), Parental Guidance 13 (PG 13), or Restricted (R) rating. Some of the DVDs and videotapes for this class are not from our school or district’s collection of instructional materials. These materials will be used only as a supplement for educational purposes. There may be occasions when only certain portions are shown to enhance a lesson.

___________   Yes, _______________________________________ has my permission to view these DVDs or videotapes.

___________  No,________________________________________ does not have my permission to view these DVDs or videotapes.

Parent/Guardian
Signature______________________________________________Date____________________

PUBLICITY RELEASE
Throughout the school year the Fulton County School District and local schools will conduct activities that may be publicized through local or national news media.

________________ I grant permission for the Fulton County School District to use or publicly display my/my child’s photograph, video image, or audio clip on the District’s Web site(s), individual school Web pages, or in other official District publications without further notice. I acknowledge the District’s right to crop, edit, or treat the photograph, video, or audio clip at its discretion. I also agree that my child/I will participate in any publicity activities for events sponsored by the District. Such activities may include but are not limited to: interview sessions with news reporters; photographs for newspapers or various School District publications including newsletters, calendars, and
brochures; videotaping for local and national television newscasts, cable programming, and School District promotional videos. I understand that this permission is effective as long as I/my child attends the school listed below or until I give further notice. NOTE: This form must be completed by student if the student is 18 years of age or older.

_____ My child may not/I will not participate in any publicity activities for events sponsored by the local school or the District.

Parent/Guardian
Signature______________________________________________Date____________________

Fulton County Schools
Computer/Internet Acceptable Use Policy
Student Agreement

My parent/guardian has discussed the Computer/Internet rules with me. I agree to follow the rules.

Student Name (please print)
___________________________________________________________________________________

School Name: CENTENNIAL HIGH SCHOOL

Parent/Guardian Agreement

As the parent or guardian of this student, I have read and discussed with my child the Computer/Internet Acceptable Use Policy of Fulton County Schools. (See the student handbook.) I understand that the computer facilities and the Internet are designed for educational purposes. I further understand that Fulton County Schools and the Board of Education have taken precautions to restrict access to inappropriate material, but my son/daughter is ultimately responsible for restricting himself/herself from this inappropriate material and will not hold them or their designees responsible for materials acquired on the network.

_____ I grant permission. _____ I do not grant permission.

Parent/Guardian
Signature______________________________________________Date____________________