**Introduction to Engineering: Class Syllabus**

**Mrs. McElroy**

**Objectives**: This class is designed to give students an overview of the different types of engineering commonly found in today’s job market. Some of these fields include: Civil, Aerospace, Materials, Mining, Chemical, Electric, and Historical. It is the purpose of this course to give students an experience in each of these fields by taking a problem related to the field, design a solution, carry out that solution, and then write up their results in the form of an industry accepted report. In addition to these units, students will also explore different Universities, with strong engineering programs and their offerings as they relate to engineering fields, and interact with current engineers in their fields of expertise.

**Student Responsibilities:**

1. Report to class on time and be prepared
2. Follow all directions the first time
3. Complete all assignments
4. Respect the rights and property of others
5. Use only appropriate language and behavior
6. Raise your hand for recognition

**Teacher Responsibilities:**

1. Stress the completion of student work
2. Help develop critical thinking skills
3. Promote engineering subjects
4. Stress the importance of problem solving
5. Encourage personal growth
6. Show the need for the subject in our daily lives
7. Be enthusiastic about the subject area
8. Have Fun!!!!

**Attendance**: Attendance is an important part of successfully completing any class. Without regular attendance, students can easily fall behind or will leave their lab groups without their input. Regular attendance is expected.

**Class Preparation**: Students should come to class prepared. A lab notebook, folder, calculator, lab glasses and pen and pencil will be required for every class. Any other materials or special preparations will be explained to the class prior to its meeting. Students who come to class unprepared and/or are not in their assigned seats when the bell rings, will be marked tardy.

**Homework Assignments**: Homework assignments consist of lab reports. Because this class is designed to give students a “real world” experience, in the field of engineering, due dates are when lab reports are due. There will not be any late credit given. If there are unforeseen circumstances, students must see me **before** lab reports are due. Lab reports must follow the template for writing

engineering reports (as given and explained in class) and are expected to be typed and turned in with their lab notebooks at the beginning of the class period.

**Assessments**: Most of this courses’ grades will come from Unit Reports. Each unit report will assess the student’s understanding of the project, their proposed solutions, their designs and data collected, and their conclusions based on that work.

**Grading Scale:**

100-94% = A 72 – 70% = C-

93 – 90% = A- 69 – 67% = D+

89 – 87% = B+ 66 – 63% = D

86 – 83% = B 62 – 60% = D-

82 – 80% = B- 59 – 50% = E

79 – 77% = C+ 49 and below = F

76 – 73% = C

Final Grades for this class will be figured as follows:

Engineering Unit Reports = 66%

Class Participation = 34%

**Class Participation**: Class participation is an important part of the learning environment and vital to a project based course. At the end of each week, a participation grade will be added to the marking period grade. It will be worth approximately 34% of the grade. Participation points are given based on a student’s daily work. Students earn points by participating in class discussions, working productively with their lab group, listening to directions, and being prepared to class.

**Misc.**:

1. Hall Passes: Hall passes will NOT be given. Be sure to use the bathroom and get a drink BEFORE coming to class.
2. Required class materials:

* Pens/pencils (blue or black ink only, please)
* Folders for handouts and Unit Project directions
* Notebook/3 Ring Binder for Unit Project Reports
* Scientific Calculator
* Lab Safety glasses
* Excited to Learn Attitude!!!

**Proposed Engineering Units:**

Unit #1: Sept 5th -15th - Introduction Unit “Egg Drop Device: Rotational Physics”

Unit #2: Sept 18-29th – Aerospace Engineering “Rocket Build and Launches”

Unit #3: Oct 2nd-13th – Renewable Energy “Wind Turbines Sustainability”

Unit #4: Oct 16-27th – Civil Engineering Roads “TRAC: Reaction Times and Road Technology”

Unit #5: Oct 30th – Nov 10th – Civil Engineering Bridges “TRAC: Bridge Construction and Design”

Unit #6: Nov 13-21st – Mine Engineering “Mine Engineering Unit”

Unit #7: Nov 27th – Dec 8th – Materials Engineering “Thermal Conduction”

Unit #8: Dec 11th – 22nd – Chemical Engineering “Automobiles Airbags”

Unit #9: Jan 3rd- 19th – Historical Engineering “History of Engineering Project”