

TECH HIGH SCHOOL COURSE SYLLABUS

Engineering 2008-2009

PREREQUISITE: Upper Academy (or by selection in the lower academy), Algebra, Geometry.

DESCRIPTION: Engineering is a project based course that will provide the foundation for further courses in Engineering at the University level. It will introduce the student to a range of subjects of processes in engineering design, History of engineering and project management and implementation. The course will employ a team based approach where cooperation and contribution to the team effort will be essential.

Course Materials

Class notes

Project and Section packages

Internet resources

Directed reading

During this semester, the students will be able to master the concepts and applications for the following State Performance Standards (SPS) topics.

COURSE TOPICS (2008-2008)

ENGR-STEM1 – Students will recognize the systems, components, and processes of a technological system.

ENGR-STEM2 – Students will identify the impact of engineering and technology within global, economic, environmental, and societal contexts.

ENGR-STEM3 – Students will design technological problem solutions using scientific investigation, analysis and interpretation of data, innovation, invention, and fabrication while considering economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability constraints.

ENGR-STEM4 – Students will apply principles of science, technology, engineering, mathematics, interpersonal communication, and teamwork to the solution of technological problems.

ENGR-STEM5 – Students will select and demonstrate techniques, skills, tools, and understanding related to energy and power, bio-related, communication, transportation, manufacturing, and construction technologies.

ENGR-STEM6 – Students will enhance reading by developing vocabulary and comprehension skills associated with text materials, problem descriptions, and laboratory activities associated with engineering and technology education.

ENGR-STEM7 – Students will develop leadership and interpersonal problem-solving skills through participation in co-curricular activities associated with the Technology Student Association.

The full address for Engineering and Technology is

<http://www.georgiastandards.org/DMGetDocument.aspx/Foundations%20of%20Engineering%20and%20Technology%20ENGR.pdf?p=6CC6799F8C1371F6820C9B48248B6CEC4CE88A04523C5EB4B77C65061930753B&Type=D>

Grading Method:

There are a total of 2000 points required for a 100% average. There will be 75 additional points that may be earned as bonus points for extra credit projects. The Final exam will count 200 points (10%) and the end of course test will count 300 points, (15%). There are 10 course content sections. Each content section will also include general science skills to be mastered.

Students will typically prepare for the section test with the following example packet of work. This package will vary somewhat from section to section

Section Pretest

Complete class notes and all assignments completed

Lecture covering the subject material

Individual and group work to develop and sharpen skills and understanding

Tutorials and learning materials available online or after school.

The students final grade will typically be computed using the following outline example. Changes in State, local , school or course requirements may make the details of implementation of the outline somewhat variable . Significant changes will be noted by a supplemental addition to the syllabus.:

CATEGORY	POINTS POSSIBLE	PERCENTAGE OF GRADE
Work Ethic Grade	200	10%
Subject Section Test grades	400	20%
Subject section preparation	100	5%
Projects/labs	800	40%
Peer/self/inst evaluation	300	15%
Final Exam	200	10%

MASTERY METHOD:

Table of section test scores and points earned.

Students must score 90+% on the section test to complete a section and earn the points for the section. Each section can earn the student 180 points . Students will be allowed to makeup the section test for a reduced maximum possible grade but the 90% testing result is necessary for completing the section receiving the section points. **ALL SECTION PREPARATION WORK MUST BE COMPLETED TO TAKE THE SECTION TEST.**

Each section assessment is worth 180 points. There will be 6 section assessments this semester. In order to demonstrate concept mastery and application, a student must score a minimum of 90% on a section assessment. Students who score below the 90% may only retake the assessment upon successful completion of an additional section preparation packet. After the first attempt, a student will earn only a portion of the maximum points possible. Bonus projects will complete the 2000 points

For example

On the first attempt the student scores 160 out of 180 possible points for a percentage score of 88%, two points below the minimum score demonstrating mastery. In this scenario, the student would then complete an additional section package designed to enhance mastery. If on the second attempt the student scores 162 points for a percentage of 90%, the second attempt is worth 157.5 points. The third attempt is worth 135 points.

The ultimate objective of this process is to help students take responsibility for their learning. If a student works diligently and consistently through this process, the need for repeated assessments will diminish with time. Students will be given an opportunity to internalize this responsibility through adequate preparation and demonstration of learning.

	Test score	points earned
First Testing	90+	80 (100%)
Second testing	90+	70 (87.5%)
Third testing	90+	60 (75%)
Further testing by special arrangement after parent conference		

ALL MAKEUP WORK AND RETESTING MUST BE COMPLETED WITHIN TWO WEEKS OF INITIAL TESTING. Work not made up satisfactorily will earn no points

COURSE EXPECTATIONS: In order for you to follow along and complete assignments properly you must be proficient in basic math and using a graphing calculator. In addition, projects will require you to become proficient with computer programs involving presentation such as Power Point

ACADEMIC AND DISCIPLINE POLICIES:

There are four simple class rules WORK HARD WORK SMART WORK SAFE BE NICE

1. Please come to class prepared to work. This includes bringing writing utensils, paper, notebook, homework, with notes and completed homework.. Homework assignments not completed will result in detention.
2. Students must show all work for all homework, tests quizzes and class work. Problems involving equations and calculations must be solved by applying the appropriate steps in the GRASP method
3. If you are absent it is your responsibility to get your make up work from me, do the work, and turn it in- **I will not remind you!** Credit will be given for excused absences only. Make up tests and quizzes must be scheduled with me. Deficiencies will be given every 4.5 weeks.
4. No sharing of calculators during tests or quizzes..
5. SOME quizzes will be open notes. See policy # 1 if you forgot your notebook. Some quizzes will be unannounced
6. Bathroom passes will be consistent with the student handbook policy. Abuse the policy and expect an answer of "NO".
7. Class work, homework, and assessments should be done in pencil, Log book entries are done in dark blue or black ink.
8. I cannot count it correct if I cannot read it. Please be careful and write clearly.
9. I am willing to be flexible if you have circumstances beyond your control that prevent you from completing an assignment. Your hard work, behavior in class and use of class time is totally controlled by you. You should practice SLANT.
Sit up Straight, Lean forward and Listen, Ask questions, Nod your head to communicate attention and understanding And Track the teacher or another speaker or student with your eyes as they speak and move around the room.
10. You are encouraged to keep a record of your grades. If you want to discuss your average and have not kept a record, we may have no way to know what action is needed and therefore the grade would stand as recorded.. Students and parents are encouraged to check grades in power school regularly
11. You are responsible for all work during ISS or suspensions. **I will not remind you**
12. Class participation and effort weigh very strongly in my decision to round grades. For example 79.3, a C, could be rounded to an 80, a B, if you have demonstrated a serious effort to meet work ethic and SLANT expectations.
13. All shop and hands on experiences must include respect and care for your own safety and the safety of others according to shop rules and respect and care for the materials, tools and equipment provided for you.
14. You are responsible for following all policies and procedures reflected in the Tech High Family Handbook

AGAIN.....CLASSROOM RULES AND PROCEDURES:

1. Work Hard
2. Work smart
3. Work Safe
4. Be Nice

You know what this means. If in doubt , ask first. If you fail to meet my rules, I will first inform you and the class of the problem and you will accrue consequences that will encourage you to be more responsible for your own success, efficiency, safety and courtesy.

I have read and understand the material contained in this syllabus or I will contact you for clarification of specific items.

Student Signature _____

Parent or Guardian signature _____

Please return one of these sheets signed and retain the package for your reference

