**Engineering Concepts** 

**Justin Woodard**

**WoodaJu@richmond.k12.ga.us**

**9-12**

**Hello,**

**I am Mr. Woodard. I would like to formally welcome you to Engineering Concepts and the world of STEM. We will learn many things in this class about engineering and what engineers do and how to put many of these things into practice. If you have any questions, feel free to ask.**

**Course Overview *–***

Engineering Concepts is the second course in the Engineering and Technology Pathway. Students will learn to design technical solutions to engineering problems using a whole systems approach to engineering design. Students will demonstrate the application of mathematical tools, teamwork, and communications skills in solving various design challenges, while maintaining a safe work environment. The prerequisite for this course is Foundations of Engineering and Technology.

**Units to be taught**

* Employability skills required by business and industry.
* The history of technology and engineering and its impact on society in the past, present, and future.
* Demonstrate a whole systems approach to engineering and problem solving.  Identify criteria of usage, care, and maintenance for tools and machines.
* How to apply fundamental principles of the engineering design process.
* Apply engineering graphics and technical writing to communication of an engineering design.
* How to design a solution to an engineering problem applying math and science principles.
* Students will identify the impact of engineering and technology within global, economic, environmental, and societal contexts.
* 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.
* 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.

**LaunchPad, Canvas, and Textbook**

* Launchpad is our single sign on platform. All the apps/webtools that students will access throughout the school year, in all their courses, can be found here. You may also download the Classlink app to your device to access Launchpad from your phone or tablet.
* Our learning management system, Canvas, can be found in each student's Launchpad. The courses they are registered for will be displayed on the Dashboard in Canvas. Click on each course to find announcements, assignments, and all online instruction. You may also download the Canvas app for parents and the Canvas app for students to your cell phone or tablet.

**Materials List**

1.A quad ruled composition notebook (100 pgs.)

2. A 3 ring binder

3. Pencils and Pens

4. Graph Paper

**Grading Policy**

Middle and High school student performance will be recorded and reported in all courses by numerical grades, based on a 100-point scale.

* Calculation of Final Grades Final grades will be determined by the cumulative semester average using the following criteria:
* **Minor Grades** = 60% Examples include quizzes, labs, and other graded assignments to assess certain standards in a unit of study. Minimum number of minor grades per 6-week progress report period = 5
* **Major Grades** = 40% Examples include unit tests, essays, research papers, project-based assignments, and other culminating assessments to measure mastery of standards that comprise a unit of study. Minimum number of major grades per 6-week progress report period = 2

**Late/Missing Assignments**

Late work is defined as assignments that are submitted after the specified deadline. This does not apply to work submitted late due to absence from school. Students are expected to submit assignments on time.

Multiple incidents of late work may result in teacher-student-parent conferences to examine and correct the student’s work habits through an academic contract.

Scores may be reduced by 5% per school day for a 25% maximum reduction (five school days).

Late work submitted after the fifth school day will only be accepted at the teacher’s discretion.

**Relearn/Reassess**

Students who perform below 70% on a major assignment will be given the opportunity to relearn and reassess to show improvement in their mastery of the standard.

Students will submit a Relearning Plan as part of this process. This plan should include:

* Analysis of their errors or misconceptions on the previous major assignment.
* Complete assignments provided to relearn the content for mastery. Students may also attend a tutoring session.
* Complete and turn in any missing assignments.
* Commit to date(s) and time(s) to redo the assignment or retake the assessment.
* Share the plan with their parents and teacher for approval and signatures.

Upon satisfactory completion of the plan, as determined by the teacher, student should be given a minimum of one opportunity to be reassessed.

Teachers should have discretion to determine if R&R opportunities will be given for any minor assessment.

**Tutoring**

Tutoring is available as needed by appointment only. Please contact the teacher if you are interested.

**Classroom Management Policy**

**The student should:**

* Exhibit professional behavior and integrity.
* Professional Behavior is described as Speaking and acting respectfully towards all class members at all times.
* Always use respectful language.
* Never launch or throw any unauthorized projectiles in class.
* Always dress appropriately.
* Always adhere to ALL safety rules and requirements.
* Our actions and communications are always direct, honest, and transparent.
* We only present your own original work without citing the source.
* Never bring food to the classrooms at any time. This includes any drink other than water (unless it is breakfast or lunch.

**Class Rules**

* No Vandalism, Unauthorized Misuse or Handling/Altering of Equipment
* No running or horseplay in the classroom
* No bullying
* Clean up your work area.
* Whenever you are in the shop area you need your PPE.