

Mr. Robert McCown, Instructor

You will need a notebook paper and graph paper to use in their Engineer Design Journal.

What will students be expected to learn in this class?

- How to apply the engineering design process to solve problems
- How technological systems affect the quality of life in the 21st century
- How to use programming to automate tasks, collect and analyze data and perform tasks
- Examine career paths and certifications in engineering, design and technology

How will students do that?

- Work in flexible groups and teams to acquire information, use critical thinking skills and solve tasks.
- Learn SketchUp digital design to create 3D models, then rapid prototype their designs using a 3D printer.
- Learn programming through designing games, animation and potentially building robots to perform task challenges.

What are the class expectations?

- Students will be ***prompt, prepared, positive, polite and productive.***
- Students will not bring food, snacks, gum or drinks into the lab for reasons of safety and hygiene.
- **Respect** for the lab equipment, other students and the authority of the teacher is expected at all times.
- Students who interfere with or interrupt the lesson or use equipment improperly will be removed from the workstation and given an alternative assignment.

What standards will be followed?

Course content will follow performance standards set forth by the Georgia DOE for middle school engineering and technology and an integrated STEM curriculum (Science, Technology, Engineering and Math) and industry standards for teaching digital design.

Topics

- Computer skills / Programming (Excel, Word, PowerPoint, scratch/html)
- SketchUp/TinkerCAD model design and challenges
- VEXIQ programming/ LEGO Mindstorms, construction and challenges
- Engineering design process, technological systems, 21st century skills, career paths

Video: Occasionally movies or movie clips will be shown in the classroom to enhance instruction. Please contact me if your child can **NOT** view PG movies. Video Examples: Nova: Making Stuff, Modern Marvels: Engineering Disasters, Apollo 13, Tron

As part of my growth as a teacher and to improve my teaching skills, I will periodically video myself as I teach. This is to help me as a teacher reflect on the effectiveness of my lessons.

Materials: Students are expected to come prepared to work daily. The following should be ready at the start of each class.

Pencil

Student Agenda

Engineers Notebook (I provide the binder but they need notebook paper)

Suggested Materials (These are not mandatory)

Eraser (pink pearl), graph paper, thumb drive, mouse for surface

Students that are frequently unprepared will be documented and may borrow a pencil by exchanging their agenda or personal item during the warm-up. Pencils must be traded back at the end of class during clean up. It is unacceptable to disrupt class to prepare or borrow materials once class has begun. Disrupting class to borrow a pencil will result in a disciplinary consequence.

All other materials will be provided by the school. In the event that a specific project is planned that will require the student to provide a specific material, the parent/ guardian will be notified in advance.

Grading: Fulton County Grading Scale will be used in this class

A: 90 and above

B: 80-89

C: 70-79

F: 69 and below

Grades will be weighed as follows:

~ Homework/Work Ethic: 5%

Effort toward completion of daily tasks.

~Formative 40%

Daily Class Work Assignments: These grades include but are not limited to Quizzes, Challenges and Programming

~Summative: 55%

Large Projects and Engineers Notebook/Journal Test

These are the major projects that we are working on and act as a test of the information that we cover for each unit. The student needs to pay close attention to what is required; these requirements will always be found on the rubric which is to be turned in with each project.

Turning in Work: Work will be considered late if it is not submitted on the due date. Teachers will enter NHI (not handed in) in the gradebook to signal a late or missing assignment. Students will lose 10 points per day late. Students who fail to submit work within the five day period will be referred to our graduation coach, and they will be required to attend working lunch. Once the student has attended their assigned working lunch, they are expected to submit the assignment to their teacher by the following Monday. If the student does not submit the assignment in this time frame, the late assignment will not be accepted by the teacher.

Retakes: Summative- Major Projects

- Students that make below a 73% on Major Assessments **MUST RETAKE** the assessment. Remember these are the Major Projects. Intervention will be teacher- guided.
- All students do have the option to retake an assessment.
 - If the grade is **ABOVE 73%**, the retake will be a self-guided intervention. Extra help can occur in the mornings before school.
 - Retake will be administered within the next 5 day cycle after test is graded. The grade kept will be the higher of the two.

The Graduation Coach's primary responsibility is to work with all students to encourage academic success. Mrs. Nigro offers a variety of academic programs that can help students improve their academic performance.

The Guidance Counselors are also available to assist with any academic and social needs you may encounter during the school year.

Students may come during team time or early before school at 7:55 to make up assignments or catch up on projects. Students who need extra time must have used class time appropriately and have their agendas signed in advance.

Homework Expectations: Students that need extra time to finish an assignment may take their work home to keep up with the pace of the class. I expect any work that leaves the engineering room to come back the next day.

All students are expected to make up any missing assignment due to an absence in a timely manner. See page 3 in the student agenda for the specific guidelines.

Daily Course Expectations: All school rules are in effect in this room. Each student is expected to adhere to the behavior expectations as outlined in the student agenda.

Respectful: Check bad attitudes at the door. Do your best to stay upbeat, cheerful, and pleasant. We all have challenges. 😊
-Keep your voices low and to your table.
-Follow directions the first time they are given.

Responsible: Come prepared and work to the best of your ability each day. Bring a pencil, engineers journal, and any assigned materials to each class.

- Take care of our tools, technology, and materials.
- Get your materials ready quickly and put them back in the right spots.
- Clean up after yourself.

Ready: Be on time for class, turn in all assignments on time, and make efficient use of our class time.

Pay attention and participate in class.

HBMS Tardy Policy: Tardy is defined school wide as not being inside the classroom when the final bell rings.

When the final bell rings to be in class, teachers are expected to close their doors. Tardy students will be recorded and issued reminds. Consequences will be assigned based upon the progressive consequences of the remind system. Students who arrive to the classroom later than 10 minutes without a pass will be recorded as cutting class.

In Mr. McCowns Class: 1st Tardy-Speak with student 2nd Tardy-Contact home and silent lunch 3rd Tardy-Morning Detention 4th-Tardy-Office referral

Rewards: special treats, positive notes or calls, student helpers, special seat

Consequences: Remind, teacher reprimand, notation in agenda, lunch detention, seat change, negative phone call or note, counselor/office referral.

Agenda: Students are provided with one agenda at the beginning of the year and are expected to use the student agenda as an organizational tool as well as a hall pass. If an agenda is lost, a new agenda must be purchased.

Note to Parents: I am very happy to have your child come into my classroom for this nine week period. It is very important that we maintain the line of communication to ensure that your child does the best job possible. If there is a problem please let me know. I will be contacting you so feel free to contact me.

Thank you,

Mr. McCown

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www.mccownclass.com

470-254-7030

As an engineering, film and digital technology teacher I find some items very useful. Please consider donating the following **items before tossing them out: old weights (under 20lbs), funky accessories or props think photo booth and wood (balsa, 2x4, plywood)**