Course Syllabus: Foundations of Engineering and Technology

Instructor: Mr. Israel Butler, M.Ed.

Room: 407

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Office Hours: 8:00AM–9:00AM & 3:10PM–4:00PM

Course Description:

This introductory course provides students with an overview of the field of engineering and technology. Students will explore engineering fundamentals and history while learning about local, national, and international engineering landmarks and artifacts. Emphasis is placed on problem-solving, design processes, and innovation.

Curriculum Highlights:

- Engineering history and foundational principles

- Local, national, and global engineering landmarks

- Engineering design and development

- Electronics and circuits

- 3D modeling and 3D printing

- Lego design and prototyping

- Game design (Microsoft Arcade MakeCode, FlowLab.io, Unreal Engine 5.6, Fortnite UEFN)

- Computer programming basics

- Drone flight fundamentals

- Plant hydroponics and sustainable engineering

Classroom Expectations:

- Students must bring their school-issued laptops daily to access Canvas and digital learning platforms.

- Be respectful, responsible, and ready to learn.

- Submit assignments on time via Canvas unless otherwise instructed.

- Participate actively in hands-on projects and discussions.

Grading Policy:

- Classwork & Participation: 25%

- Quizzes & Tests: 30%

- Projects & Presentations: 35%

- Final Exam: 10%

Materials Needed:

- School-issued laptop (charged daily)

- Notebook or engineering journal

- Pencils/pens

- USB flash drive (optional)

Extracurricular Opportunities:

Students will have the opportunity to join:

- FBLA (Future Business Leaders of America) for competitions and leadership development.

- #TeamMusketeer Esports Team to compete in Rocket League, Street Fighter 6, College Football 25, Madden 26, and NBA 2K26. Details will be provided during the first semester.

Communication & Support:

Students and parents are encouraged to contact Mr. Butler during office hours or via email for academic support, project guidance, or general questions.