Course Syllabus: Engineering Concepts

Instructor: Mr. Israel Butler, M.Ed.

Room: 407

Email: Butleis@richmond.k12.ga.us

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

Course Description:

This intermediate course expands upon foundational engineering knowledge through the application of design principles, teamwork, and technology-driven solutions. Students will deepen their understanding of engineering systems, problem-solving strategies, and industry tools.

Curriculum Highlights:

- In-depth engineering design processes

- Sustainable engineering and hydroponics

- Advanced 3D modeling and printing techniques

- Intermediate game development and simulation tools (Unreal Engine, FlowLab.io)

- Circuit analysis and prototyping

- Drone flight and aerial design applications

- Collaboration on engineering challenges and design briefs

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.