Foundations of Engineering and Technology Course Syllabus
2024-2025

Saraland High School
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Course Description: Foundations of Engineering and Technology offers students an exploratory view of the engineering profession and the fundamental skills utilized in the field. Students investigate various engineering disciplines and related career paths. Students will develop leadership and teamwork skills through creativity, collaboration, communication, and critical thinking. Additionally, students will increase their understanding of science, technology, engineering, and mathematics (STEM) principles used in problem-solving as they use the engineering design process.

Course Goals: Students will employ engineering and scientific concepts in the solution of engineering design problems. In addition, students use a state-of-the-art 3D solid modeling design software package to help them design solutions to solve proposed problems. Students will develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges that increase in difficulty throughout the course. Students will also learn how to document their work, and communicate their solutions to their peers and members of the professional community. Learning activities will include teacher-led instruction, cooperative learning, and project-based learning.

CTSO Integration:
Each Career Tech program has a Career Tech Student Organization. For Engineering, this organization is the Technology Student Association (TSA). Students will complete projects based on TSA competition guidelines and compete against other schools in local competitions.

Anchor Assignment:
Students will research and model a four-stroke engine cylinder with a working piston. They will use math to calculate the size of each part so that the final assembly fits together properly. They will create a presentation that includes written explanations of the function of each component and the four different strokes that the piston experiences throughout the cycle.

Course Grade Basis:

Assessment	Description	Percent
Standards-Based Assessments	Projects, Quizzes, Tests, etc.	60
Formative Activities	Daily tasks, Bellringers, Homework, etc.	40

Industry-Recognized Credential: Students will have the opportunity to earn the Autodesk Inventor Certified User credential.

Generative Artificial Intelligence Statement

This course will allow—in some cases, even encourage—the use of generative artificial intelligence (GAI) techniques in some assignments. Unless otherwise indicated, the default is that this kind of use is prohibited. GAI use must be recognized and referenced. Academic misconduct will be the result of breaking this policy and could result in loss of credit for the assignment(s) as referenced in the cheating policy in the Saraland City Schools' Student Handbook. It is the student's responsibility to follow the requirements of each course or assignment.