

Technology Engineering Education

Courses and Suggested Sequence

Emphasis on Engineering and Technology

9th Grade: 3835 – Foundations of Technology – replaces Innovations and Inventions

10th Grade: 3836 – Technological Issues – replaces Technological Systems

11th Grade: 3838 – Advanced Design Applications – replaces Engineering Processes

12th Grade: 3813 – Problems and Solutions in Technology

Emphasis on Science and Math

9th Grade: 3835 – Foundations of Technology

10th Grade: 3836 – Technological Issues

11th Grade: 3837 – Advanced Technological Applications

3835 Foundations of Technology

Grade level: 9-12

Credit: 1

Foundations of Technology prepares students to understand and apply technological concepts and processes. Group and individual activities engage students in creating ideas, developing innovations, and engineering practical solutions. Lab activities involve student application of science, math, and other school subjects in authentic situations. This course will help students understand the design world, engineering designs, attributes of design and the core concepts of technology. Hands-on activities include: CO2 dragster, structural bridge, rocket, roller coaster, airplane, mousetrap racer, solar car and a trebuchet.

3836 Technological Issues

Grade level: 10-12

Credit: 1

Pre-requisite: Completion of Foundations of Technology

Technological Issues will actively engage students in making and developing, using, and managing technological systems. Students will better understand the role of systems in meeting specific needs and will be able to analyze and understand the behavior and operation of basic technological systems in different contexts. Students will investigate critical historical and emerging issues affecting the creation, development, use and control of technology. They will use case studies, simulations, research, design & problem solving, group discussions, and presentations to address complex issues and propose alternative solutions to technological development. Hands-on projects include:

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architectural scale models, robotic arm, magnetic levitation device and an electric/solar/alternative energy project.

3837 Advanced Technological Applications

Grade level: 11-12

Credit: 1

Pre-requisite: Completion of Foundations and Tech. Issues

This course will alternate with Advanced Design Applications each year. This course (ATA) will not be taught in 2009-2010 school year. It may be taught during the 2010-2011 year.

In this course students will study about the four components of the Design World, including Information Technology, Agriculture and Bio-related Technologies, Medical Technology, and Entertainment/Recreational Technologies.

3838 Advanced Design Applications

Grade Level: 11-12

Credit: 1

Pre-requisite: Completion of Foundations and Tech. Issues

This course alternates with Advanced Technological Applications. This course (ADA) will be taught during the 2009-2010 school year.

This course consists of four study units: Manufacturing, Energy and Power, Construction, and Transportation Technologies.

3813 Problems and Solutions in Technology

Grade Level: 12

Credit: 1

Pre-requisite: Completion of Foundations, Tech. Issues and Advanced Design

Problems and Solutions in Technology is a research course which allows students to develop advanced technical knowledge and skills by solving problems in one or more of the following technology systems: communication, computer applications, construction, energy, power, transportation, manufacturing, and bio-related technology. In this research course, students develop and apply the knowledge and skills gained in previous courses to identify and resolve relevant problems. Hands-on projects are by instructor and student choice.

Student Organization:

The Technology Student Association (TSA) is the national organization for technology engineering education students. Our motto is "Learning to live in a Technical World".

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TSA fosters personal growth, leadership and opportunities in technology, innovation, design, and engineering. Members apply and integrate science, technology, engineering and math concepts through co-curricular activities, competitive events and related programs. Members compete at the regional, state and national level each year in areas related to technology, engineering and leadership. TSA membership is expected from all students enrolled in tech. engineering courses.

Work Based Learning:

- Opportunity for an internship during the summer between the Junior and Senior years in the chosen pathway.
- Opportunity for a cooperative learning experience during the senior year.

Related Careers:

All engineering fields, technicians for all fields, CNC operators, Architect, Draftsman, Designer, Structural Occupations, Construction Trade, Inspectors, Electrician, Plumber

For more information contact:

Jim Baker

Technology Engineering Education Instructor

Fred J. Page High School

615-472-4731 ext. 3873

jamesb@wcs.edu