



Department of Teaching & Learning
Parent/Student Course Information

Technology Education 8

(TE 8483)

Grade 8

One-half Credit, One Semester

Counselors are available to assist parents and students with course selections and career planning. Parents may arrange to meet with the counselor by calling the school's guidance department.

COURSE DESCRIPTION

The courses in engineering and technology provide opportunities for students to acquire skills and knowledge necessary for technological literacy, entry-level careers and lifelong learning. Students gain an awareness of Virginia's 22 Workplace Readiness Skills. This semester course designed to provide students experiences that utilize tools and machines and a systems approach to solve problems. Students engage in a project-based study of technology to design, construct or control systems. Students identify and understand the impact STEM-related fields of technology on their world and investigate future careers with an emphasis on safety.

CERTIFICATION

None

STUDENT ORGANIZATION

Technology Student Association (TSA) is a co-curricular organization for all students enrolled in engineering and technology courses. Students are encouraged to be active members of their youth organization to develop leadership and teamwork skills and to receive recognition for their participation in local, regional, state and national activities.

PREREQUISITE

None

OPTIONS FOR NEXT COURSE

Selected High School Technology Education courses.

REQUIRED STUDENT TEXTBOOK

None

COMPETENCIES FOR TECHNOLOGY EDUCATION 8

Demonstrating Workplace Readiness Skills: Personal Qualities and Abilities

- 1 Demonstrate creativity and innovation.
- 2 Demonstrate critical thinking and problem solving.
- 3 Demonstrate initiative and self-direction.
- 4 Demonstrate integrity.
- 5 Demonstrate work ethic.

Demonstrating Workplace Readiness Skills: Interpersonal Skills

- 6 Demonstrate conflict-resolution skills.
- 7 Demonstrate listening and speaking skills.
- 8 Demonstrate respect for diversity.
- 9 Demonstrate customer service skills.
- 10 Collaborate with team members.

Demonstrating Workplace Readiness Skills: Professional Competencies

- 11 Demonstrate big-picture thinking.
- 12 Demonstrate career- and life-management skills.
- 13 Demonstrate continuous learning and adaptability.
- 14 Manage time and resources.
- 15 Demonstrate information-literacy skills.
- 16 Demonstrate an understanding of information security.
- 17 Maintain working knowledge of current information-technology (IT) systems.
- 18 Demonstrate proficiency with technologies, tools, and machines common to a specific occupation.
- 19 Apply mathematical skills to job-specific tasks.
- 20 Demonstrate professionalism.
- 21 Demonstrate reading and writing skills.
- 22 Demonstrate workplace safety

Addressing Elements of Student Life

- 23 Identify the purposes and goals of the student organization.
- 24 Explain the benefits and responsibilities of membership in the student organization as a student and in professional/civic organizations as an adult.
- 25 Demonstrate leadership skills through participation in student organization activities, such as meetings, programs and projects.
- 26 Identify Internet safety issues and procedures for complying with acceptable use standards.

Exploring Work-Based Learning

- 27 Identify the types of work-based learning (WBL) opportunities.
- 28 Reflect on lessons learned during the WBL experience.
- 29 Explore career opportunities related to the WBL experience.
- 30 Participate in a WBL experience, when appropriate.

Exploring Technological Systems

- 31 Explain technology.
- 32 Analyze the core concepts of technology.
- 33 Define system.
- 34 Analyze the Universal Systems Model.
- 35 Analyze systems of the designed world, using the Universal Systems Model.
- 36 Analyze a specific product/process/system, using the Universal Systems Model.
- 37 Distinguish the subsystems within a given system.
- 38 Explain the potential technological impacts of products and systems.
- 39 Explain the influences of technology on history.
- 40 Demonstrate safe use of a minimum of seven tools and/or pieces of equipment.
- 41 Demonstrate the process for changing inputs to outputs in any system (Universal Systems Model).

Designing Technological Systems

- 42 Distinguish the characteristics/properties of materials and families of materials.
- 43 Design a model of a product or process, using computer-aided design systems.
- 44 Maintain a design portfolio/engineer's notebook.
- 45 Design an information or communication system to solve a problem.
- 46 Explain the coding system used for microcontrollers.
- 47 Demonstrate the use of a micro-controlled system.
- 48 Design a manufacturing system to solve a problem.
- 49 Design a construction system to solve a problem.
- 50 Design a transportation system to solve a problem.
- 51 Design an energy and power system to solve a problem.
- 52 Design an agricultural and related biotechnologies system to solve a problem.
- 53 Design a medical technology system to solve a problem.

Evaluating Technological Systems

- 54 Analyze the cause of a failure or a problem in a technological system.
- 55 Assess the impact of technological systems on individuals, resources, society, and the environment.
- 56 Research careers related to technological systems.

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Produced by the Department of Teaching and Learning.
For further information, please call (757) 263-1070.

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