



Department of Teaching & Learning
Parent/Student Course Information

Production Technology Program
Construction Technology
(TE 8432)
Grades 9 - 12
One Credit, One Year

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 learn Virginia's 21 Workplace Readiness Skills within the content area. Those who are completing a two-year sequence have the opportunity to verify their knowledge of the workplace readiness skills through an industry assessment. Students work on individual and group projects that help them understand the jobs of architects, carpenters, electricians, plumbers, surveyors, contractors, masons, design engineers and a variety of other construction related careers. Working with both hand tools and power tools, students design, build and test scale-model structures. They also explore aspects of the construction industry.

CERTIFICATION

Students can be eligible to receive the Career Safe OSHA 10 certification for general construction.

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

Production Technology or Materials Technology

REQUIRED STUDENT TEXTBOOK

Basic Principles of Construction

COMPETENCIES FOR CONSTRUCTION TECHNOLOGY

Demonstrating Workplace Readiness Skills: Personal Qualities and People Skills

- 1 Demonstrate positive work ethic.
- 2 Demonstrate integrity.
- 3 Demonstrate teamwork skills.
- 4 Demonstrate self-representation skills.
- 5 Demonstrate diversity awareness.
- 6 Demonstrate conflict-resolution skills.
- 7 Demonstrate creativity and resourcefulness.

Demonstrating Workplace Readiness Skills: Professional Knowledge and Skills

- 8 Demonstrate effective speaking and listening skills.
- 9 Demonstrate effective reading and writing skills.
- 10 Demonstrate critical-thinking and problem-solving skills.
- 11 Demonstrate healthy behaviors and safety skills.
- 12 Demonstrate an understanding of workplace organizations, systems and climates.
- 13 Demonstrate lifelong-learning skills.
- 14 Demonstrate job-acquisition and advancement skills.
- 15 Demonstrate time-, task- and resource-management skills.
- 16 Demonstrate job-specific mathematics skills.
- 17 Demonstrate customer-service skills.

Demonstrating Workplace Readiness Skills: Technology Knowledge and Skills

- 18 Demonstrate proficiency with technologies common to a specific occupation.
- 19 Demonstrate information technology skills.
- 20 Demonstrate an understanding of Internet use and security issues.
- 21 Demonstrate telecommunications skills.

Examining All Aspects of an Industry

- 22 Examine aspects of planning within an industry/organization.
- 23 Examine aspects of management within an industry/organization.
- 24 Examine aspects of financial responsibility within an industry/organization.
- 25 Examine technical and production skills required of workers within an industry/organization.
- 26 Examine principles of technology that underlie an industry/organization.
- 27 Examine labor issues related to an industry/organization.
- 28 Examine community issues related to an industry/organization.
- 29 Examine health, safety and environmental issues related to an industry/organization.

Addressing Elements of Student Life

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

Exploring Types of Structures

- 34 Describe how structures evolved from ancient times to the present.

- 35 Categorize structures/infrastructures as residential, commercial, industrial, institutional, transportation, and public works projects.
- 36 Identify construction techniques for transportation and public works.
- 37 Explain why dams are constructed.
- 38 Describe the features of a dam.
- 39 Create a model of a dam used to generate electricity.

Identify the major components of bridges.

- 40 Describe bridge types.
- 41 Create a model of a segmented concrete box girder, arched, trussed, or suspension bridge.
- 42 Describe considerations for planning and designing roads.
- 43 Explore trends in construction of buildings.

Examining the Impacts of Construction

- 44 Perform a technology assessment of the impacts of residential structures on individuals, families, and communities.
- 45 Describe the impacts of public works construction.
- 46 Prepare a presentation distinguishing a civil, commercial, industrial and/or institutional structure's impact.

Investigating Careers Associated with Construction

- 47 Research careers associated with construction.
- 48 Deliver a presentation on career research.

Exploring Preconstruction

- 49 Summarize preconstruction activities for construction systems.
- 50 Identify aspects of construction planning.
- 51 Create documents necessary for the construction process.
- 52 Document a site layout.
- 53 Perform a site survey.
- 54 Interpret architectural plans and symbols.

Exploring Construction Processes

- 55 Identify residential construction materials and their properties.
- 56 Identify construction activities.
- 57 Prepare a residential home construction schedule.
- 58 Estimate a residential or site work construction project.
- 59 Use standard construction techniques to build a structure (e.g., model, cross-section of a wall, simple structure).
- 60 Compute units of measurement common in areas of construction.
- 61 Identify approvals/occupancy activities.
- 62 Justify all safety rules and procedures associated with construction and laboratory activities.

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For further information please call (757) 263-1070.

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To seek resolution of grievances resulting from alleged discrimination or to report violations of these policies, please contact the Title VI/Title IX Coordinator/Director of Student Leadership at (757) 263-2020, 1413 Laskin Road, Virginia Beach, Virginia, 23451 (for student complaints) or the Section 504/ADA Coordinator/Chief Human Resources Officer at (757) 263-1133, 2512 George Mason Drive, Municipal Center, Building 6, Virginia Beach, Virginia, 23456 (for employees or other citizens). Concerns about the application of Section 504 of the Rehabilitation Act should be addressed to the Section 504 Coordinator/ Executive Director of Student Support Services at (757) 263-1980,

2512 George Mason Drive, Virginia Beach, Virginia, 23456 or the Section 504 Coordinator at the student's school. For students who are eligible or suspected of being eligible for special education or related services under IDEA, please contact the Office of Programs for Exceptional Children at (757) 263-2400, Laskin Road Annex, 1413 Laskin Road, Virginia Beach, Virginia, 23451.

Alternative formats of this publication which may include taped, Braille, or large print materials are available upon request for individuals with disabilities. Call or write The Department of Teaching and Learning, Virginia Beach City Public Schools, 2512 George Mason Drive, P.O. Box 6038, Virginia Beach, VA 23456-0038. Telephone 263-1070 (voice); fax 263-1424; 263-1240 (TDD) or email at Charles.Hurd@vbschools.com.

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