

# Technology Education

## **BASIC TECHNICAL DRAWING (843500)**

**Grades: 9, 10, 11, 12 Credit: one**

Students develop basic skills in drawing and study careers related to drafting through the use of Computer-Assisted Drafting (CAD) and other software applications to gain an understanding of the technical drawing processes. This course is recommended for students interested in technical drawing, interior design, fashion merchandising, decorating, construction, architecture, or engineering careers.

**Students successfully completing this course may be eligible to earn a Career and Technical Education Diploma Seal. Students successfully completing this course in conjunction with another one credit course within the same program area will satisfy the sequential elective requirement for the Standard or Modified Standard diploma. This course requires a student materials fee as listed in FCPS Notice 5922.**

## **ARCHITECTURAL DRAWING (843700)**

**Grades: 10, 11, 12 Credit: one**

**Prerequisite: [Basic Technical Drawing \(843500\)](#)**

Students study the history of architecture, examine various construction techniques, use Computer-Assisted Drafting (CAD) equipment, and design a house. They develop working drawings and specifications as well as a scale model. Students interested in architecture or related careers will benefit from this course. Students completing Art I (912000), Computer Applications (661132), Basic Technical Drawing (843500), and Architectural Drawing (843700) with a grade of "B" or better may be eligible to articulate eight credits with Northern Virginia Community College.

**Industry certification may be available as part of this course. Students successfully completing this course may be eligible to earn a Career and Technical Education Diploma Seal. Students successfully completing this course will satisfy the sequential elective requirement for the Standard or Modified Standard diploma. Successful completion of this course in conjunction with a corresponding industry certification may qualify for a student selected verified credit.**

## **ENGINEERING DRAWING (843600)**

**Grades: 10, 11, 12 Credit: one**

**Prerequisite: [Basic Technical Drawing \(843500\)](#)**

Students gain an understanding of technical drawing careers in modern industry. The course includes engineering-drafting problems, use of computer assisted drafting (CAD)

equipment, and drafting skills and techniques. Students use handbook of standards and specifications along with other resource materials. Students interested in engineering or related careers will benefit from this course. Students completing Engineering Drawing (843600) and Basic Technical Drawing (843500) with a grade of "B" or better may be eligible to articulate three credits at the Northern Virginia Community College. In addition, if they complete Art 1 (912000) and Computer Applications (661132) with a grade of B or better they may be eligible to articulate up to eight additional credits at the Northern Virginia Community College.

**Industry certification may be available as part of this course. Students successfully completing this course may be eligible to earn a Career and Technical Education Diploma Seal. Students successfully completing this course will satisfy the sequential elective requirement for the Standard or Modified Standard diploma. Successful completion of this course in conjunction with a corresponding industry certification may qualify for a student selected verified credit. This course requires a student materials fee as listed in FCPS Notice 5922.**

### **DESIGN AND TECHNOLOGY (840300)**

**Grades: 9, 10, 11, 12 Credit: one**

Design and Technology is designed as a foundation high school course in industrial technology. Students use core technology knowledge to solve open-ended problems and create systems. Laboratory activities engage students in the design process through projects that integrate math, science, and other core subjects. Working in groups, students build and control systems in the development of technology.

**Students successfully completing this course may be eligible to earn a Career and Technical Education Diploma Seal. Students successfully completing this course in conjunction with another one credit course within the same program area will satisfy the sequential elective requirement for the Standard or Modified Standard diploma. This course requires a student materials fee as listed in FCPS Notice 5922.**

### **PRE-ENGINEERING (849000)**

**Grades: 10, 11, 12 Credit: one**

This course provides for orientation to the careers and challenges of engineering. Students are actively involved with high-tech devices, engineering graphics, and math/scientific principles through problem-solving experiences. Students integrate math, science, and technical writing with technology to solve engineering-based problems. Activities are provided in descriptive geometry, materials science, and technical systems. Focus areas in civil, mechanical, electrical, and aeronautical engineering are explored. Students communicate information through seminars, technical reports, and sharing of ideas.

**Students successfully completing this course may be eligible to earn a Career and Technical Education Diploma Seal. Students successfully completing this course in conjunction with another one credit course within the same program area will satisfy the sequential elective requirement for the Standard or Modified Standard diploma. This course requires a student materials fee as listed in FCPS Notice 5922.**

**ADVANCED DRAWING (846600)**

**Grades: 11, 12 Credit: one**

**Prerequisite: Engineering Drawing (843600) or Architectural Drawing (843700)**

The student is given an opportunity to advance in one or more selected fields of technical drawing. The student's specific program is developed in cooperation with the teacher.

Students are encouraged to work independently with general supervision rather than from detailed instruction.