Computer–Aided Drafting and Design technology is used in all phases of the design and manufacturing process, from 2D design and technical drawings to 3D solid models and prototypes.

**Program Description**

Every high school graduate has an opportunity for a rewarding and progressive Computer-Aided Drafting and Design (CADD) career. The curriculum has been designed to accommodate individuals who are high school graduates or equivalent and who have a desire to become part of the CADD profession in this challenging field of technology.

The first two semesters are designed to provide entry-level courses in keeping with the New York State Education Department requirements toward an Associate in Applied Science degree in Computer-Aided Drafting and Design Technology. In the last two semesters, students are guided into a concentrated field of computer-aided design including a variety of different 2D and 3D software packages. The overall program provides the student with a broad assortment of different drawing experiences in diverse areas of study. Upon completion of this broad and comprehensive training in CADD, the student will be qualified to accept job opportunities in support of engineers and designers.

Graduates will be able to assume positions as designers or CADD drafters working with and supporting engineers and engineering departments.
Program Competencies

Upon graduation with an Associate in Applied Science degree in Computer-Aided Drafting and Design, the graduate will be able to:

- draw, dimension and interpret basic mechanical working drawings;
- prepare accurate and concise technical reports;
- demonstrate with explanation the metallurgical properties of materials, including plastics, be familiar with manufacturing processes and machine tools, and have an awareness of product safety and reliability;
- develop technical illustrations;
- develop working drawings from engineering flow sheets and utilize standard piping symbols;
- perform basic engineering calculations;
- apply geometric tolerancing and true positioning to a drawing using the current ANSI Code Y-14.5;
- demonstrate skills to design, draw and interpret basic wood frame construction;
- draw, dimension and interpret structural detailing;
- describe and construct an electrical/electronic schematic drawing using standard symbols;
- be able to research, interpret and present technical information;
- demonstrate with explanation the basic operation of CAD and using commands, create two dimensional working drawings; and
- analyze with explanation the industrial working environment as it relates to management structure, work ethics and safety.

CURRICULUM

Total Degree Credits: 64.0

First Year, Fall Semester
DF 108 Technical Graphics I & AutoCAD (3 cr)
CP 148 Basic Electricity for Mechanical Drafting (3 cr)
EN 110 College Composition (3 cr) or
MT 125 College Mathematics (4 cr) or
MT 121 Technical Mathematics I (4 cr)
Social Science Elective (3 cr)

First Year, Spring Semester
DF 109 Tech Graphics II & Inventor (3 cr)
DF 230 Introduction to SolidWorks (2 cr)
EN 111 Composition and Interpretation of Literature (3 cr)
PH 190 Basic Physics (4 cr)
PH 191 Lab for PH 190 Credit Hours:
(Included in the 4.0 Credit Hours for PH 190)
MT 126 College Mathematics II (4 cr) or
MT 122 Technical Mathematics (4 cr)

Second Year, Fall Semester
DF 222 3-D AutoCAD (2 cr)
DF 235 Introduction to Creo (2 cr)
DF 250 Manufacturing Processes & Materials (4 cr)
DF 279 Systems Piping (2 cr)
DF 280 Descriptive Graphics I (2 cr)
DF 281 Lab for DF 280 (1 cr)
ME 114 Analytical Mechanics (3 cr)

Second Year, Spring Semester
DF 213 Electronic Drafting (1.5 cr)
DF 216 Mechanical Drafting Strength of Materials (3 cr)
DF 237 Industrial Analysis (2 cr)
DF 282 Descriptive Graphics II (2 cr)
DF 283 Lab for DF 282 (1 cr)
DF 290 Architectural Drafting (2 cr)
DF 296 Structural Detailing (2.5 cr)
ME 262 Geometric Dimensioning and Tolerancing (1 cr)
ME 263 Lab for ME 262 (1 cr)

Note: This is a recommended sequence. Student should consult his/her academic adviser prior to registering. Internships are unique opportunities for students to gain valuable experience while in school. Potential employment opportunities exist upon successful completion of internship/co-op program and graduation. Other internships/co-ops are available at Fisher-Price, MOOG, along with several local engineering firms. For more information contact the department chair/adviser or call the ECC Internship Office at (716) 851-1800.