

Drafting Technician

Career Technical Education Division

Program Description

This program is designed to provide students with entry level skills in the fields of mechanical, electrical, civil and architectural drafting.

Certificate of Achievement and Associate in Science Degree

A Certificate of Achievement can be obtained upon completion of the 30-unit major listed below. The Associate in Science Degree can be obtained by completing a total of 60 units, including the major, general education requirements, and electives.

Required Courses

	Units
DRAFT 45—Introduction to CAD	3
DRAFT 46—Advanced CAD	3
DRAFT 50—Basic Drafting	3
DRAFT 55—Mechanical Drafting I	3
DRAFT 60—Architectural Drafting I	3
DRAFT 75—Electronic Drafting	3
DRAFT 80—Civil Drafting I	3
IT 140—Industrial Materials	3
IT 151—Vocational Math	3
DRAFT 125—Solid Modeling	3
	30

Recommended Electives

DRAFT 56, 57, 65, 70, 79, 85, 92,
130, 135, 140
INTDS 52
IT 150
OCCED 90, 91
OHORT 30

NOTE: Many of the advanced courses will require CAD. It is important to take DRAFT 45 (Intro. to CAD) as early in your program as possible. College credit may be obtained with credit by examination in DRAFT 45, 50, and 60 or they may be waived.

Job-Direct Certificate Requirements

All courses must be completed with a grade of "C" or better.

Drafting Technology	Units
DRAFT 171—Autocad Drafting Tech. I	3
DRAFT 172—Autocad Drafting Tech. II	3
DRAFT 173—Autocad Drafting Tech. III	3
DRAFT 174—Autocad Drafting Tech. IV	3
*OCCED 90—Occupational Work Experience	1
	13

*Students will be required to complete 80 hours of cooperative supervised work experience to receive credit.

DRAFT 45 3 Units
Introduction to Computer-Aided Drafting (CAD)
Course Advisory: SCC minimum English and math standards; DRAFT 50; drafting experience helpful. Designed to introduce the drafting student to CAD technology and terminology. The student shall complete a series of related drawing problems using a CAD work station. Repeatable 1 time. *Two hours lecture, four hours lab.*

DRAFT 46 3 Units
Advanced Computer-Aided Drafting (CAD)
Prerequisite: DRAFT 45 and DRAFT 50. Course Advisories: SCC minimum English and math standards. Designed to develop advanced proficiency in CAD. Covers symbol libraries, isometrics, external references (XREFS), 3-D drawing, basic solid modeling, tables and customization techniques. Repeatable 1 time. *Two hours lecture, four hours*

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DRAFT 50 Basic Drafting <i>Course Advisories: SCC minimum English and math standards. Presents the fundamentals of drafting, including the use of instruments, lettering, freehand sketching, orthographic projection, dimensioning and sectioning. Recommended for non-majors and drafting majors. Two hours lecture, four hours lab.</i>	3 Units	DRAFT 68 CAD In Apparel Design See Fashion Design 68.	3 Units
DRAFT 55 Mechanical Drafting Level I <i>Prerequisite: DRAFT 50; DRAFT 45 (may be taken concurrently). Course Advisories: SCC minimum English and math standards. Emphasizes sectioning, pictorials, threads, fasteners, springs, tolerancing, measurement, and working drawings. Two hours lecture, four hours lab.</i>	3 Units	DRAFT 70 Technical Illustration and Design <i>Prerequisite: DRAFT 50; DRAFT 45. Course Advisory: SCC minimum English and math standards. Designed for advanced drafting students to develop the basic tools, skills and concepts required in the field of engineering illustration. Includes freehand sketching and pencil shading. CAD drawings include isometric, perspective assembly, photo-tracing and cut-away drawings. Two hours lecture, four hours lab.</i>	3 Units
DRAFT 56 Descriptive Geometry <i>Prerequisites: DRAFT 50; IT 151; DRAFT 45. Course Advisories: SCC minimum English and math standards. Presents fundamental principles of descriptive geometry and their application to the solution of three dimensional problems. Included are true lengths and shapes; bearing and slopes; point, line and shape problems, advanced auxiliaries, revolutions, intersections and developments. Two hours lecture, four hours lab.</i>	3 Units	DRAFT 75 Electronic Drafting <i>Prerequisites: DRAFT 50 (may be taken concurrently); DRAFT 45 (may be taken concurrently). Course Advisory: SCC minimum English and math standards. Designed for drafters to develop skill in reading and drawing plans related to electronics. Topics include, terminology, component identification, schematic symbols, cable drawings, electro-mechanical design, and basic printed circuit board design. Two hours lecture, four hours lab.</i>	3 Units
DRAFT 57 Mechanical Drafting Level II <i>Prerequisites: DRAFT 55 with a grade of "C" or better; IT 151 (may be taken concurrently). Course Advisories: SCC minimum English and math standards. A continuation of Drafting 55, with special emphasis on geometric tolerancing, gears, cams, electro-mechanical packaging, and advanced working drawings. Two hours lecture, four hours lab.</i>	3 Units	DRAFT 79 Blueprint Reading <i>Course Advisories: SCC minimum English and math standards. Designed to provide understanding and interpretation of a variety of blueprints. Emphasizes the ability to recognize and identify modern industrial blueprints and architectural blueprints. Includes basic development of freehand sketching abilities. Three hour lecture, one hour lab.</i>	3 Units
DRAFT 60 Architectural Drafting I <i>Prerequisites: DRAFT 50 or equivalent (may be concurrently); DRAFT 45 (may be taken concurrently). Course Advisories: SCC minimum English and math standards. Practice in drawing a complete set of plans for a single family dwelling in accordance with local building regulations. Includes an introductory unit on heat loss computations. Recommended for non-majors and drafting majors. Two hours lecture, four hours lab.</i>	3 Units	DRAFT 80 Civil Drafting I <i>Prerequisites: DRAFT 50 (may be taken concurrently); DRAFT 45 (may be taken concurrently). Course Advisory: SCC minimum English and math standards; IT 151 recommended. Introductory course in civil drawing with emphasis on land division, breakdown of survey notes, office procedures and related math computations. Included is an introductory unit on modern CAD applications, as applied to preliminary and final maps. Two hours lecture, four hours lab.</i>	3 Units
DRAFT 65 Architectural Drafting II <i>Prerequisites: DRAFT 60 with a grade of "C" or better; IT 151 (IT 151 may be taken concurrently). Course Advisories: SCC minimum English and math standards. Introduction to the trade terms, detailing and basic construction practices related to light commercial design and delineation. Two hours lecture, four hours lab.</i>	3 Units	DRAFT 85 Civil Drafting II <i>Prerequisites: DRAFT 80; IT 151. Course Advisory: SCC minimum English and math standards. Designed for the advanced civil drafting student with emphasis on computer programs and experience compatible with the industry standards. Includes the study of plan and profile, cross-section and earth-work calculations. Two hours lecture, four hours lab.</i>	3 Units

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DRAFT 92 Special Problems <i>Prerequisite: DRAFT 50.</i> Individualized projects for advanced students who demonstrate competency to carry out individual work. Repeatable 3 times. <i>Three to nine hours weekly by arrangement.</i>	1-3 Units	DRAFT 171 AutoCAD Drafting Technician I <i>Course Advisories: SCC minimum English and math standards.</i> Introduces the drafting student to CAD technology, utilization and terminology. The student will complete a series of related drawing problems using a CAD work station. <i>Six hours lecture, eighteen hours lab (5 week course).</i>	3 Units
DRAFT 125 Solid Modeling with Solidworks <i>Course Advisory: SCC minimum English and math standards; DRAFT 50 or knowledge of drafting concepts.</i> This course is designed to teach the basic concepts and skills necessary to create, view, and manipulate objects in three dimensional space using Solidworks software. Repeatable 1 time. <i>Two hours lecture, four hours lab.</i>	3 Units	DRAFT 172 AutoCAD Drafting Technician II <i>Prerequisite: DRAFT 171. Course Advisories: SCC minimum English and math standards.</i> Introduces drafting students to architectural and mechanical drafting elements through CAD utilization . The student will complete a series of related drawing problems using a CAD work station. <i>Six hours lecture, eighteen hours lab (5 week course).</i>	3 Units
DRAFT 130 Advanced Printed Circuit Board Design <i>Prerequisite: DRAFT 75. Course Advisories: SCC minimum English and math standards.</i> The student will learn how to design complex circuit boards from schematic layout to artwork generation. Course requires completion of a complete set of drawings for a printed circuit board, including proper documentation, all based on industry standards. Through-hole and surface mount technology are studied. <i>Two hours lecture, four hours lab.</i>	3 Units	DRAFT 173 AutoCAD Drafting Technician III <i>Prerequisite: DRAFT 172. Course Advisories: SCC minimum English and math standards.</i> Introduces drafting students to fasteners, dimensioning and pictorial representation through CAD processes . The student will complete a series of related drawing problems using a CAD work station. <i>Six hours lecture, eighteen hours lab (5 week course).</i>	3 Units
DRAFT 135 Structural and Detail Drafting <i>Course Advisories: SCC minimum English and math standards.</i> Provides a basic introduction to structural detailing. Covers basic terminology, shapes, types of connections, types of views, scaling and proportion, bills of materials and lettering, plus some detailing problems. <i>Five hours lecture, two hours weekly by arrangement (3 week course).</i>	1 Unit	DRAFT 174 AutoCAD Drafting Technician IV <i>Prerequisite: DRAFT 173. Course Advisories: SCC minimum English and math standards.</i> Introduces drafting students to section views and details; descriptions and supplemental drawings. The student will complete a series of related drawing problems using a CAD work station. <i>Six hours lecture, eighteen hours lab (5 week course).</i>	3 Units
DRAFT 140 Surveying <i>Prerequisites: DRAFT 80 and IT 151. Course Advisory: SCC minimum English and math standards.</i> Presents the fundamentals of plane surveying with practice in the field using tape, levels, transit and theodolite. <i>Two hours lecture, three hours lab.</i>	3 Units	Special Topics These courses, numbered 98, or 148 depending upon their transferability, are courses of contemporary interest centered on changing knowledge and important issues in the field. Specific information will vary with each course.	
DRAFT 150 Computer Graphics for Non-Drafters <i>Course Advisory: SCC minimum English standard.</i> Provides the opportunity for the non-drafting major to explore the creation of graphic images using the PC as a tool. <i>One hour lecture, three hours lab (8 week course).</i>	1 Unit		