

COMPUTER AIDED DESIGN AND DRAFTING

pcc.edu/programs/drafting-design/

CAREER AND PROGRAM DESCRIPTION

This program is designed to assist students in acquiring the knowledge and skills required of drafters and designers. Design drafters are skilled technicians who interpret engineering data to produce sketches, plans and detailed working drawings used in manufacturing and construction.

Career opportunities exist for drafters in many areas including: product design, sheet metal layout, structural steel detailing, special tooling and fixtures and machine design. Graduates are found working for manufacturing firms, construction companies, engineering firms, city, state and federal agencies or they may be self-employed. Advancement to positions of designer, drafting supervisor, or engineering technician are possible. Modern CAD (computer aided drafting) labs provide the opportunity for CAD skill development using a variety of CAD software. Other courses will augment the design drafter tool set with knowledge in materials, materials strength, drafting/design computation, design for manufacturing and the product development process. The program and courses are developed with the advice and support of an advisory committee.

Full time students should begin the computer aided design and drafting certification program during the fall term, and follow in sequential order. Both afternoon and evening courses are offered. Contact a program adviser for curriculum variations.

DEGREES AND CERTIFICATES OFFERED

ONE-YEAR CERTIFICATE

Computer Aided Design and Drafting (CAD)

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE

CAD Operator
Mechanical Drafter
Technical Designer

Academic Prerequisites

- Students new to the certificate program must take the college's placement examination for math prior to program advising and registration. Students must place in MTH 70 and WR 115 or IRW 115 before registering for first term drafting classes.

Academic Requirements

- Students must receive a grade of "C" or "P" or better in all CADD courses to earn a the Computer Aided Design and Drafting Certificate.

Non-Academic Prerequisites

- Consult a program advisor or the college catalog for information on PCC's policy for acceptance of courses taken at other colleges, high schools and/or the transferability of PCC courses to other institutions.

Non-Academic Requirements

- None

ONE-YEAR CERTIFICATE

Computer Aided Design and Drafting (p. 1)

LESS THAN ONE-YEAR: CAREER PATHWAY CERTIFICATE

CAD Operator (p. 1)

Mechanical Drafter (p. 2)
Technical Designer (p. 2)

COMPUTER AIDED DESIGN AND DRAFTING ONE-YEAR CERTIFICATE

Minimum 45 credits. Students must meet certificate requirements.

Course of Study

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term		Credits
CADD 100	CADD Orientation §	3
CADD 115	Practical Mathematics for CAD Designers and Drafters §	4
CADD 160	Drafting Fundamentals	4
CADD 175 or ENGR 105	SolidWorks Fundamentals or 3D Modeling and Engineering Graphics	3
Second Term		
CADD 105	Digital Design and Fabrication Fundamentals	3
CADD 126 or ARCH 126	Introduction to AutoCAD or Introduction to AutoCAD	3
CADD 185	Inventor Fundamentals	3
CADD 195	CAD Simulation for Drafters and Designers	4
CADD 235	Materials and Design for Manufacturing Processes	3
Third Term		
CADD 245	Product Design and Development Fundamentals §	3
CADD 255	Kinematics Drafting	3
CADD 265	Mechanical Design Drafting	4
CADD 285 or CADD 275	Advanced Inventor or SolidWorks Advanced	3
Computer Aided Design and Drafting Electives		2
Total Credits		45

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Course contains Related Instruction and cannot be substituted with another course; Related Instruction details can be viewed here.

COMPUTER AIDED DESIGN AND DRAFTING ELECTIVES

Code	Title	Credits
ARCH 110	Introduction to Architectural Drawing	2
ARCH 136	Intermediate AutoCAD	3
ARCH 237	Introduction to Revit Architecture	3
CADD 110	STEM Electric Guitar Build	2
CADD 136	Intermediate AutoCAD	3
CADD 155	Fusion 360 Fundamentals	3
CADD 225	Advanced Fusion 360	3
CADD 275	SolidWorks Advanced	3
CADD 285	Advanced Inventor	3
ENGR 101	Engineering Fundamentals	4
WLD 101	Welding Processes & Applications	4

CAD OPERATOR CAREER PATHWAY CERTIFICATE

Minimum 15 credits. Students must meet certificate requirements.

CAD Operator Certificate Courses

Code	Title	Credits
CADD 126	Introduction to AutoCAD	3
CADD 175	SolidWorks Fundamentals	3
CADD 185	Inventor Fundamentals	3
CADD 235	Materials and Design for Manufacturing Processes	3
CADD 275	SolidWorks Advanced	3
Total Credits		15

**MECHANICAL DRAFTER CAREER PATHWAY
CERTIFICATE**

Minimum 18 credits. Students must meet certificate requirements.

Mechanical Drafter Certificate Courses

Code	Title	Credits
CADD 126	Introduction to AutoCAD	3
or ARCH 126	Introduction to AutoCAD	
CADD 160	Drafting Fundamentals	4
CADD 175	SolidWorks Fundamentals	3
or CADD 185	Inventor Fundamentals	
or ENGR 105	3D Modeling and Engineering Graphics	
CADD 265	Mechanical Design Drafting	4
CADD 115	Practical Mathematics for CAD Designers and Drafters	4
Total Credits		18

**TECHNICAL DESIGNER CAREER PATHWAY
CERTIFICATE**

Minimum 21 credits. Students must meet certificate requirements.

Technical Designer Certificate Courses

Code	Title	Credits
CADD 115	Practical Mathematics for CAD Designers and Drafters	4
CADD 160	Drafting Fundamentals	4
CADD 175	SolidWorks Fundamentals	3
CADD 195	CAD Simulation for Drafters and Designers	4
CADD 235	Materials and Design for Manufacturing Processes	3
CADD 245	Product Design and Development Fundamentals	3
Total Credits		21