



# Computer Aided Design and Manufacturing Certificate

**Program:** Computer Aided Drafting

**Program Code:**

CN

**Academic Area:**

Science, Technology, Engineering and Mathematics

**Type:**

Certificate of Accomplishment

**CIP Code:**

15.1306

## Program Statement

This certificate program provides students with the needed skills to become a professional computer-aided draftsman, mechanical, or manufacturing technicians in the engineering industry. Students learn fundamental concepts of engineering drawing through advanced computer-aided design techniques and CAD/CAM. They will utilize and set up standard machine-shop equipment and operate and program CNC machinery. Students also understand the materials to be processed and technical drawing through the use of AutoCAD, SolidWorks, Inventor, and CamWorks.

## Program Information

This program serves as a solid base for continuing on toward a degree with all courses transferring to BCC's Automation, Electro-Mechanical, and Mechanical Technology programs.

Students utilize typical industrial CNC machining centers, high-tech computer equipment, and the latest AutoDesk, SolidWorks, and/or CAM software.

## Program Requirements

Course #	Title	Credits
CAD 111	Mechanical Design with Solidworks	3
CAD 211	Computer Aided Manufacturing	3
EGR 111	Fundamentals of Manual Machining	4
EGR 112	Automated Machining	3
EGR 172	Material Science	4
	CAD 101, CAD 112 or CAD 172	6



## Recommended Course Sequence - Semester 1

Course #	Title	Credits
CAD 111	Mechanical Design with Solidworks	3
EGR 111	Fundamentals of Manual Machining	4
EGR 172	Material Science	4
	CAD 101 or CAD 172	3

## Recommended Course Sequence - Semester 2

Course #	Title	Credits
CAD 211	Computer Aided Manufacturing	3
EGR 112	Automated Machining	3
	CAD 101, CAD 112 or CAD 172	3
	<b>Total credits:</b>	<b>23</b>

## Category Descriptions

### CAD 101, CAD 112 or CAD 172

Credits: 6

Choose two of the following:

Course #	Title	Credits
CAD 101	Computer Aided Drafting	3
CAD 112	Maker Space Projects and Advanced Mechanical Design with SolidWorks	3
CAD 172	Mechanical Design Using Inventor	3