

# COMPUTER NUMERICAL CONTROL - CAD & CAM ASSOCIATE OF SCIENCE DEGREE

To graduate with a specialization in Computer Numerical Control: CAD/CAM, students must complete the following required courses for the certificate plus the general breadth requirements for the Associate of Science Degree (minimum total = 60 units).

Code	Title	Units
<b>Required Courses</b>		
MACH 021	Machine Shop I	4
MACH 022	Machine Shop II	4
MACH 090	Mechanical Print Reading	3
MACH 120	Machine Shop Theory	2
MACH 123	Machine Shop III	4
MACH 124	Machine Shop IV	4
<b>Required Specialized Courses</b>		
MACH 070	Computer Numerical Control Programming (CNC) I	3
MACH 071	Computer Numerical Control Programming II	3
MACH 072	Computer Aided Design and Manufacturing Programming I	3
MACH 073	Computer Aided Design and Manufacturing Programming II	3
MACH 074	Computer Numerical Control (CNC) Machining Setup and Operation	3
MACH 129	Manufacturing Processes	3
Total Units		39

To earn an SBVC Associate Degree students must complete one of the following general education patterns:

SBVC GE requirements (<https://www.valleycollege.edu/student-services/counseling/graduation-requirements/>)

CSU GE requirements (<https://www.valleycollege.edu/student-services/counseling/csuge/>)

IGETC requirements (<https://www.valleycollege.edu/student-services/counseling/igetc/>)

## Program Learning Outcomes

At the completion of this program, students will be able to:

- Accurately hold tolerances to a given print within a 1/64th for fractions and within .001' for NIMS decimals
- Program a part print utilizing the Cartesian coordinate systems
- Download files from computer disks to machine control
- Generate a part model in SolidWorks from a detailed dimensioned illustration or a mechanical drawing
- Demonstrate the use of a gage 2000 Browne & Sharpe coordinate measuring machine