

# CNC Programming

27-28 UNIT CERTIFICATE  
60 UNIT ASSOCIATE DEGREE

**NORCO**  
**COLLEGE**

Career & Technical Education  
[www.norcocollege.edu/CTE](http://www.norcocollege.edu/CTE)

## Required Courses

### **ENE-52 Geometric Dimensioning & Tolerancing (2 units)**

Helps students to read and use ANSI Y14.M, the current standard for drafting.

### **ENE-42 SolidWorks I (3 units)**

Introduction to three-dimensional parametric solid modeling with SolidWorks.

### **ENE-30 Computer Aided Drafting (3 units)**

Two-dimensional computer aided drafting class for drafters.

### **ENE-51 Blueprint Reading (2 units)**

Beginning course in the study of blueprints and their interpretation, types of projection, symbols and abbreviations.

### **MAN-35 Computer Aided Manufacturing-Mastercam (5 units)**

A course in computer aided manufacture of parts and assemblies using Mastercam software.

### **MAN-56 CNC Machine Setup and Operation (4 units)**

Fundamental skills related to setup and operation of CNC (Computer Numerically Controlled) machine tools.

### **MAN-57 CNC Program Writing (3 units)**

Introduction to manual CNC program writing.

### **MAN-55 OSHA Standards for General Industry (2 units)**

Covers OSHA policies, procedures, and standards as well as safety for general industry and health principles.

### **ENE-60 Math for Engineering Technology (3 units)**

Mathematical problems commonly used by students enrolled in the trade and industrial and engineering programs.

**-OR-**

### **MAT-36 - Trigonometry (4 units)** Prerequisite: MAT-35 and 53 or qualifying placement level

The study of trigonometric functions, their inverses and their graphs; identities and proofs related to trigonometric expressions.

The CNC Programming program teaches how to design and carry out the operations needed to make machined products that meet precise specifications. Computer control programmers and operators use computer numerically controlled (CNC) machines to cut and shape precision products, such as automobile, aviation, and machine parts. CNC machines include machining tools such as lathes, multi-axis spindles, milling machines, laser cutting machines, and wire electrical discharge machines.

\*This class transfers towards one or more CSUSB or CalPoly majors. Visit [www.assist.org](http://www.assist.org) or the Counseling office for details.

## SUGGESTED SEMESTER SEQUENCE

FALL 1

ENE-51  
ENE-60 or  
MAT-36  
ENE-30

SPRING 1

MAN-55  
ENE-42

FALL 2

MAN-56  
MAN-57  
ENE-52

SPRING 2

MAN-35

For more information regarding certificate program, course sequencing or scheduling:  
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Norco College  
Counseling Department  
(951) 372-7101

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## Jobs & Wages

Computer-controlled machine tool operators, metal and plastic  
\$11.07 - \$28.08

Numerical tool and process control programmers  
\$18.35 - \$42.32

Drilling and boring machine tool setters, operators, and tenders  
\$10.55 - \$25.89

Lathe and turning machine tool setters, operators and tenders  
\$10.79 - \$27.84

Machine Setter  
\$10.33 - \$28.39

Manufacturing Production Technician  
\$17.78 - \$47.26

Maintenance Machinery Worker  
\$12.10 - \$33.54

Machinist  
\$10.60 - \$32.79

Tuition  
\$2,530

Books & Supplies  
\$467

Duration of Study  
20 months

Total Estimated Certificate Cost

**\$2,997**

as of 2016. Subject to change.

2016

NAS655/NAS655B/  
NAS655C/NCE655

An Associate of Science Degree in Computer Numerical Control Programming will be awarded upon completion of the required courses (27-28 units) plus the General Education requirements. Please refer to the Norco College Catalog or visit the Counseling Center.

This project was funded fully or in part by Carl D. Perkins CTE Act of 2006 grant no. 16-C01-045 awarded to Riverside Community College District (RCCD) and administered by the California Community Colleges Chancellor's Office. RCCD complies with all federal and state rules and regulations. RCCD does not discriminate, and harassment of any employee or student is strictly prohibited, on the basis of ethnic group identification, national origin, religion, age, gender, gender identity, gender expression, race or ethnicity, color, ancestry, genetic information, sexual orientation, physical or mental disability, pregnancy, military or veteran status, or any characteristic listed or defined in Section 11135 of the Government Code or contained in the prohibition of hate crimes of Section 422.6 of the California Penal Code, or any other status protected by law. This holds true for all students interested in participating in any educational and/or extracurricular program. Limited English speaking skills will not be a barrier to admission or participation in any programs. For alternate formats of this material for individuals requiring disability accommodation, contact Career & Technical Education at (951) 739-7811. For inquiries regarding compliance or grievance procedures, contact the District's Title IX Officer/Section 504/ADA Coordinator, 3801 Market St., Riverside, CA 92501, (951) 222-8039.