

CNC MACHINE PROGRAMMER, ASSOCIATE IN SCIENCE DEGREE

Banner Code: 1_AS_MTMP
Financial Aid Eligible

The CNC Machine Programmer certificate includes courses designed to upgrade the skills and knowledge of the machinist or the CNC machine operator to the level of the CNC machine programmer. If you are a machinist and have minimal experience with CNC machines or machine language programming, you will first want to complete the CNC Machine Operator Professional Upgrade Certificate. If you have both machining experience and CNC experience, the software used for the Machine Technology A133 and A134 courses provides excellent experiences in computer-assisted CNC programming. All of our programming courses require the use of a personal-type computer. If you have no computer experience, we strongly suggest you enroll in a basic computer use type course first (Computer & High Technology A100 or Computer Information Systems A100).

Complete the CNC Machine Programmer Certificate of Achievement and the Associate in Science graduation requirements as outlined in the Graduation Requirements section of the catalog.

Program Outcomes

1. Machine precision manufactured parts using conventional lathes and milling machines and perform necessary measurements.
2. Set-up and operate CNC Lathes and Milling Machines.
3. Write part machine programs for controlling CNC lathes and milling machines.
4. Manufacture precision tooling for Dies, Molds, and Prototype tooling.
5. Write advanced CAD/CAM programs for CNC LATHE and Milling Machines.
6. Write part machine programs for controlling CNC lathes and milling machines."

Review Graduation Requirements (<https://catalog.cccd.edu/orange-coast/graduation-requirements/associate-degree/>) and General Education (<https://catalog.cccd.edu/orange-coast/general-education-patterns/>).

Required Prerequisites

Machinist Certificate of Achievement (24 Units)

Course	Title	Units
MACH A100	Introduction to Machine Shop	3
MACH A105	Lathe	5
MACH A110	Milling Machine	5
MACH A115	Production Machining Techniques	2
MACH A120	Measurement and Blueprint Reading	3
MACH A121	Computations for Machinists	3
MACH A130	Introduction to CNC and Manual Programming	3
Total Units		24

Required Courses

Course	Title	Units
MACH A125	CNC Machine Operation 1	3
MACH A126	CNC Machine Operation 2	2
MACH A134	CNC Programming-Mastercam 2	3
MACH A141	Mastercam Lathe	1.5
MACH A142	Mastercam Solids	2
Total Units		11.5

Requirement	Units
Program Major Units	35.5
AS General Education Option 1, 2, or 3	Varies
Transferable electives to satisfy unit requirement	Varies
Total Minimum Degree Units	60

Program Sequence

These sequences at Orange Coast College are general course curriculum maps for students to finish all major and general education requirements for two-year completion of degrees, and/or fulfillment of transfer requirements. The course sequence may include course prerequisites and other placement requirements. **Students are advised to meet with an Orange Coast College Counselor to review course selections and sequences to ensure that completion of this program will meet a student's transfer and career goals.**

Some courses in this program may be offered once per academic year.

Course	Title	Units
Year 1		
Semester 1		
MACH A100	Introduction to Machine Shop	3
MACH A105	Lathe	5
MACH A120	Measurement and Blueprint Reading	3
MACH A121	Computations for Machinists	3
Units		14
Semester 2		
MACH A110	Milling Machine	5
MACH A130	Introduction to CNC and Manual Programming	3
OCC AS GE AREA A1 - CHOOSE ONE		3
OCC AS GE AREA C1 - CHOOSE ONE		3
Select one of the following or satisfy Math competency (completion of High School Algebra 2 with a "C" or better):		0-4
MATH A030 or MATH A045	Intermediate Algebra ¹ or Combined Elementary and Intermediate Algebra	
Units		14-18
Year 2		
Semester 1		
MACH A125	CNC Machine Operation 1	3
MACH A115	Production Machining Techniques	2
MACH A133	CNC Programming-Mastercam 1	3
MACH A141	Mastercam Lathe	1.5
OCC AS GE AREA A2 - CHOOSE ONE ²		3-4

Course	Title	Units
OCC AS GE AREA D - CHOOSE ONE		3
Units		15.5-16.5
Semester 2		
MACH A126	CNC Machine Operation 2	2
MACH A134	CNC Programming-Mastercam 2	3
MACH A142	Mastercam Solids	2
OCC AS GE AREA B - CHOOSE ONE		3-4
OCC AS GE AREA C2 - CHOOSE ONE		3
ELECTIVE (DEGREE APPLICABLE) ³		3.5
Units		16.5-17.5
Total Units		60-66

¹ Math A030 or higher; *100-level Math courses satisfy AS Math Requirement and OCC AS GE AREA A2

² OCC AS GE AREA A2 - Required if 100-level MATH will not be taken to meet Math competency. If MATH A100 or higher will be taken, then needs to take 3-4 degree applicable elective units

³ VARIES TO REACH MINIMUM 60 DEGREE APPLICABLE UNITS