

CNC MACHINE OPERATOR, ASSOCIATE IN SCIENCE DEGREE

Banner Code: 1_AS_MTMO
Financial Aid Eligible

The CNC Machine Operator certificate enhances the skills of students who have earned the Machinist certificate by providing that student with CNC machine operating skills and manual programming skills. The courses required for earning this certificate are designed to make the machine operator capable of setting up and manually programming a CNC machine tool. The CNC Machine Operator Professional Upgrade Certificate is specifically for the returning student with on-the-job machining experience.

Complete the CNC Machine Operator 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.
- OUTCOME 5: Write advanced CAD/CAM programs for CNC LATHE 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

Course	Title	Units
MACH A133	CNC Programming-Mastercam 1	3
Total Units		8

Requirement	Units
Program Major Units	32
AS General Education Option 1, 2, or 3	Varies
Transferable electives to satisfy unit requirement	Varies
Total 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.**

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
ELECTIVE (DEGREE APPLICABLE)		3
Units		17

Year 2		
Semester 1		
MACH A125	CNC Machine Operation 1	3
MACH A115	Production Machining Techniques	2
OCC AS GE AREA A2 - CHOOSE ONE ¹		3-4
OCC AS GE AREA C2 - CHOOSE ONE		3
OCC AS GE AREA D - CHOOSE ONE		3
Units		14-15
Semester 2		
MACH A126	CNC Machine Operation 2	2
MACH A133	CNC Programming-Mastercam 1	3
OCC AS GE AREA B - CHOOSE ONE		3-4
Select one of the following or satisfy Math competency (completion of High School Algebra 2 with a "C" or better):		3-4
MATH A030	Intermediate Algebra ²	
or MATH A045	or Combined Elementary and Intermediate Algebra	

Course	Title	Units
ELECTIVE (DEGREE APPLICABLE) ³		4
Units		15-17
Total Units		60-63

¹ 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

² Math A030 or higher OR take 3-4 degree applicable elective units if math competency was met through completion of High School Algebra 2 with a "C" or better; *100-level Math courses satisfy AS Math Requirement and OCC AS GE AREA A2

³ VARIES TO REACH MINIMUM 60 DEGREE APPLICABLE UNITS