

# Computer Numeric Control (CNC)

## **Degree Type** Certificate

The goal of this program is to prepare students to work as CNC operators in facilities using metal and plastic. The first semester starts with 8-week courses that build foundational knowledge. Students apply that knowledge for the next 8-weeks as they learn hands-on how to operate multi-axis milling and turning machines, making them ready to work as a CNC operator. The second semester is designed to advance your career with computer-aided design(CAD), computer-aided manufacturing(CAM), coordinated measuring machines (CMM), Lean process improvement, and more. Students interested in taking their career even further as supervisors, managers, or business owners should ask us about dual enrollment in the Technical Studies Associate Degree.

## **Program Outcomes**

After completing this certificate students will be able to:

- Demonstrate skills and knowledge required for jobs as CNC machine operators/programmers.
- Demonstrate ability to inspect, test, or measure materials, products, or work for conformance to specifications.
- Apply critical thinking skills to use logic and reason to identify the strengths and weaknesses of alternative approaches to problems.
- Safely operate a 3-axis milling machine, set up and maintain probes and cutting tools, perform basic machine maintenance, and apply tolerance specifications.
- Monitor operation/performance to make sure a machine is working properly, make improvements or take corrective action.

## **Admissions Requirements**

- Complete an application for the program.
- Provide proof of high school completion or equivalent.
- Provide an official copy of prior college transcripts, if appropriate

## **Health, Safety, and Internship Considerations**

This program includes work in a manufacturing lab where potentially hazardous materials are used. Students will be taught industry standards for safety and will be expected to follow all safety procedures for material handling. Personal protective equipment must be worn. Students will provide their own safety boots or shoes.

## **Technical Standards**

This program includes work in a manufacturing lab and requires participants to physically perform functions that require the following:

- Normal vision for reading instructions and for performing tasks, including inspecting parts for quality (corrective vision is acceptable).
- Mobility and strength for performing tasks that require reaching, walking, standing, and safely lifting up to 20 lbs.
- Ability to hear sounds of equipment, for equipment operation and safety.

## **Transfer Credit Policy**

- Students with certificates in technical fields (in areas in which Great Bay does not offer a degree) may complete the Associate's Degree in Technical Studies.
- Students enrolled in the CNC Certificate program may elect to enroll in the Associate Degree in Technical Studies. Dual enrollment is contingent upon current matriculation or completion of the certificate. Completing the CNC Certificate satisfies the 21 credits required for the technical specialty core of the Technical Studies degree.

## Certificate Requirements

### Fall Semester

Item #	Title	Theory Hours	Lab Hours	Credits
MANF120G	Technical Blueprint Reading	1	2	2
MANF135G	Technical Math for Manufacturing	3	0	3
MANF255G	CNC Milling and Set-up Operator	4	4	6
<b>Sub-Total Credits</b>		<b>8</b>	<b>6</b>	<b>11</b>

### Spring Semester

Item #	Title	Theory Hours	Lab Hours	Credits
MANF254G	Quality Inspection and CMM Operator	2	2	3
MANF225G	Solid Modeling (CAD/CAM)	2	2	3
MANF230G	Manufacturing Ethics	1	0	1
MANF112G	Topics in Manufacturing	2	2	3
<b>Sub-Total Credits</b>		<b>7</b>	<b>6</b>	<b>10</b>
<b>Total Credits</b>				<b>21</b>