Great Bay Community College

BUSINESS TRAINING CENTER
COURSE OUTLINE

COURSE TITLE: CNC Set-up Operator Fundamentals

COURSE SCHEDULE: 20 Hours (2.5 hours/day, 1 days/week, 8 weeks)

COURSE DESCRIPTION: This hands-on course prepares students for jobs where they will successfully operate a milling machine with a FANUC and Siemens controller, under the direction of the CNC supervisor. Focus is on developing the fundamental skills needed to use computer numerical control (CNC) to run a milling machine efficiently and within required quality standards. They will maintain cutting tools dedicated to manufacturing and perform machine maintenance.

COURSE OBJECTIVES:

The objective of this course is to prepare students to safely and accurately operate a CNC mill using a FANUC or Siemens control. Students will be able to support engineers in setting up of the programs, checking tool path and CMM results. They will be qualified for an entry-level position as operator in manufacturing.

1. Be able to operate a milling machine with a FANUC or Siemens control, under the direction of an engineer or production supervisor;
2. Identify different types of tools and explain use;
3. Set up and maintain probes;
4. Maintain and set-up cutting tools for machining;
5. Compare and contrast tool holding methods;
6. Understand and apply tolerance specifications;
7. Perform basic machine maintenance;
8. Perform the following tasks: milling, de-burring, bench operations;
9. Check tool path, using simulator;
10. Maintain work area and equipment in clean orderly condition;
11. Follow established procedures and explain why variation is not permitted;
12. Inspect stock to verify size and report to supervisor;
13. Inspect and verify machine part meets print requirements;
14. Comply with all OSHA regulations related to these operations;

Demonstrate competencies in the following CNC functions:

   a. CNC Power Up
   b. Control Layout
   c. Safety Features
   d. Setting Tool Offsets
   e. Setting Work Datums/work Shifts
   f. Calling up Programs,
   g. CNC Modes (Run, Jog, Program Manager)
   h. Ability to edit programs
   i. Basic understanding of G&M Codes