Set-Up and Operation of the 3-Axis CNC Mill   28 hrs.

In this course, you will learn the fundamentals of the Tooling and Operational Characteristics on the CNC Milling Machine. Learning components include:

1. ***Cutting Tools used on the CNC Mill:*** Center drills, drill bits, reamers, taps, countersinks, counterbores, spot drills, thread mills, face/shell mills, flat end mills, bull and ball nosed end mills, and precision boring heads.

2. ***Cutting Tool Fundamentals:*** Spot/center drilling, creating internal/external threads, Pocket roughing and finishing, contouring, cutter compensation, hole-making, and facing.

3. ***Fixturing:*** Sub-plates, machine vises, chucking (3-jaw) and riser, soft jaws versus hardened steel jaws on the machine vise jaws, other complex set-up components such as V-Blocks, 1-2-3 and 2-4-6 blocks, and parallels

4. ***Tool Holders:*** CAT40V-Flange tool holders and adapters such as: Straight-shank holders, precision drill chucks, ER-16 collet holders, ER-32 collet holders, and face mill arbors.

5. ***Machine and Tooling Set-Up***: Using the proper techniques for setting up tooling and installing in the CNC Mill carousel. Tramming the machine vise. Following a shop "*Run Book*" typical set-up instructions for a job. Selecting stock material for a job (non-production). Setting up stock material and creating a Work Coordinate System (WCS). Using an edge finder. Setting each individual tool height offset.

6. ***CNC Machine Operational Characteristics:*** Powering up the machine, "homing" each of the three axes. Understanding MCU features (controller), overrides, switching readouts, and parameters access. Edit, memory, MDI, Handle Jog, Zero Return, and List Program modes of operation.

7. ***Installing/Uploading a Numerical Control program (G and M code):*** Debugging on the machine post code evaluation software (Vericut/Cimco Edit). Running the 2-D simulation tool. Using the Dry Run feature before running first article.

Who Should Attend? Anyone who is interested in learning about CNC machine operation.

ETI Instructor Paul Montgomery has more than 30 years' experience in manufacturing, specializing in CNC mill and lathe programming, set-up and operation, CAM programming, CAD design with SolidWorks and CATIA, manual machining in a prototype/tool making capacity with expert level on all manual engine lathes and other related machining equipment and tools. In addition, Paul is an experienced instructor and has been manager of training and development for a major aerospace manufacturing company. Paul continues to create and deliver engaging and effective training programs in most machining topics.

Employment Training Panel – State-Funded Training Cost: $350.00
Non-ETP Cost: $994.00

WHEN:
Mondays
May 5, 2025 – June 23, 2025
5:00 pm to 9:00 pm
No class May 26

WHERE:
In-Person
Location TBD

For more information or to register, please contact Jocey Hogan at 661.362.5657 or
jocey.hogan@canyons.edu

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