


## Overview

The term CNC stands for **Computer Numerical Control**. This is a system where, in this case, a machine utilizes 3-axis of operation to selectively remove material from a stock board such as timber. This process is particularly useful in the working environment to produce highly accurate shapes and forms from basic two-dimensional objects.

In this course we will look at basic operations of a CNC routing machine, all the tool requirements, different utilizations such as routing and laser cutting, material setup etc., the fundamental approaches to material removal for accurate production capabilities and all the industries where this might apply.

## Features and Benefits

1. Delegates will learn to utilise a CNC router towards reductive form making and fabrication. An in-depth overview of the machining process, tooling, safety and software to machine interface will be explored here.
2. Machine Operation, Servicing & Troubleshooting
3. Materials
4. Design planning
5. Cut path setup and machine setup
6. Take full advantage of our new **Hybrid Learning** by attending on **campus** or **virtually**. Have all your classes ready to be **downloaded** and **watched**, anytime, anywhere.  

7. Attendees will **gain confidence** and enhance their practical skills and knowledge in this field.
8. The delegates will have learned how CNC milling machines operate, how tools function and are set up, how to troubleshoot and how to cut with material and tolerances in-mind.

## Course Prerequisites

- Delegates should have a working knowledge of basic computer literacy

## Course Outline

### Module 1: Machine Interface & Setup

- Machine Language
- Machine Capabilities
- Material selection
- Tool types and usage

### Module 2: Part design and considerations

- Inception
- The overall thought process and considerations to be made
- Transferring designs to a CAD software
- Machine path setup

## Duration

**In Class/Virtual Class**, Hybrid Learning

**1 Day** (08:30 – 16:00) Classes are presented via our **Hybrid Learning** allowing learners the **flexibility** to attend on campus or in the comfort of their home or workplace.

## What you get

On completion the learner will earn:

- **Certificate of Completion** from **The Academic Institute of Excellence**

*Note: All certificates are electronically issued.*

## Delivery Methods

- Full Time

### **Module 3: Machine utilization**

- Operational Health & Safety
- Machine Preparation
- Material Setup
- Tool Selection and Setup
- Selecting appropriate tool tips based on requirements

### **Module 4: Utilizing external slicing software in preparation for CNC Machining**

- What is the purpose of software that translate G-Code
- Baseline user interface
- Understanding machine thinking and capabilities

### **Module 5: Using filters**

- Using Noise and Rendering filters
- Using Brush Stroke filters
- Using Texture filters
- Using the Liquify filter

### **Module 6: Automating tasks**

- Using actions
- Using Automate commands

### **Module 7: Preparing graphics for print and the web**

- Preparing graphics for print
- Preparing graphics for the Web

## **Outcomes & Skills**

Upon completion of this course, learners will have acquired these skills

- Learn to utilize a CNC router towards reductive form making and fabrication
- Machine Operation, Servicing & Troubleshooting
- Materials
- Design planning
- Cut path setup and machine setup