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**Course Name** : **CNC MILLING Programming & Machining**

**Course Duration** : **40 Hrs.**

#### **Course Overview**

- **Course Description**
  - This course teaches the use of the CNC Milling Programming & Machining using Sinumerik 828D Controller.
- **Intended audience**
  - This course is intended for Manufacturing Engineers, Process planners.
- **Prerequisites**
  - Education: Diploma 3 year Students or Degree 2<sup>nd</sup> year completed in any one of following Streams.
    - Aeronautical, Automobile, Industrial, Marine, Mechanical, Mechatronics, Metallurgy, Production and Manufacturing Engineering.
  - Software: None

#### **Course Objectives**

- Elements of CNC machine
- Introduction To CNC Programming
- Introduction to SIEMENS 828D controller
- Cutting Tools and Parameter selection in Milling
- Milling Work holding & Tool Holding Devices
- Basics of Milling Programming
- Programming using Siemens standard cycles for Milling
- Hands on practice – All standard Cycles of 828D Milling

#### **Course Contents**

- Up milling
- Down Milling
- Cutting Tools in Milling
- Facing Operation
- Chamfer & Radius Operations
- Contour Cycle
- Facing Cycle
- Drilling Cycle
- Reaming Cycle
- Boring Cycle
- Rectangular Pocket Milling



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- Circular Pocket Milling
  - Spigot Milling Cycle
  - Groove Milling Cycle
  - Threading Cycle
  - High Speed Milling
  - Step by Step Programming Procedure & Safety

<b>Course out come</b>
CNC Milling Machine Operation, Tool Offset, Wear & Work Offset, Setting of the CNC for workpiece Loading unloading, Daily maintenance of CNC Machine, monthly & Annual maintenance of CNC machine, tool path creating, part programming preparation.