CNC PROGRAMMING SYLLABUS

NC Machine Types

- CNC Lathe (Turning Center)
- CNC Milling Machine
- CNC Machining Center (VMC / HMC)
- 3-Axis, 4-Axis & 5-Axis Machines

CNC Machine Construction

- Machine Bed
- Spindle
- Tool Turret
- Guideways
- Ball Screws
- Servo Motors

CNC PROGRAMMING SYLLABUS

Zero Setting & Offsets

- Machine Zero
- Workpiece Zero
- Tool Offsets
- Wear Offsets

G-Codes (Preparatory Functions)

- G00 – Rapid Positioning
- G01 – Linear Interpolation
- G02 / G03 – Circular Interpolation
- G04 – Dwell
- G28 – Return to Home
- G40, G41, G42 – Cutter Compensation
- G54 – G59 Work Offsets

CNC PROGRAMMING SYLLABUS

CNC Program Structure

- Program Number
- Sequence Numbers
- Tool Call
- Spindle Speed & Feed
- End of Program

Tooling & Cutting Parameters

- Cutting Tools (Turning & Milling)
- Tool Geometry
- Cutting Speed
- Feed Rate
- Depth of Cut