

# **ADVANCED CAD/CAM & CNC PROGRAMMING IN MASTERCAM 2024**

**(MASTERCAM AUTHORISED TRAINING CENTRE)**

**(MILLING & LATHE).**

**ELIGIBILITY :- (B.TECH / DIPLOMA)**

**SYLLUBUS:- [MILLING]**

## **COMPUTER AIDED DESIGN (CAD)**

INTRODUCTION OF MASTERCAM DESIGN TOOLS

CONFIGURATION DETAILS

WIREFRAME FEATURES: - CREATION OF LINES, CIRCLES, ARCS, RECTANGLES, SPLINES, CURVE FEATURES ETC.

EDITING FEATURES: - TRIMMING, DIVIDING, BREAKING, JOINING, FILLETS, CHAMFERS, OFFSET, PROJECTIONS, AND EDITING SPLINES ETC.

TRANSFORM FEATURES: - POSITION FEATURES, DYNAMIC POSITIONING, TRANSLATIONS, ROTATION, PROJECTION, MOVE TO A POINT, MIRROR OPTIONS, OFFSETTING, LAYOUT, SCALING ETC.

VIEW FEATURES:-CONSTRUCTION PLANES, TOOL PLANES, WCS, GRID OPTIONS, APPEARANCE, GRAPHICS VIEW, TOOL PATH VIEWS ETC.

SOLID FEATURES:-DIRECT 3D MODELING TOOLS, BLOCK, CYLINDER, CONE ETC.

EXTRUDE, REVOLVE, LOFT, SWEEP ALONG GUIDE, BOOLEAN OPERATIONS, IMPRESSION HOLE, RECTANGULAR AND CIRCULAR PATTERN, CREATION OF BODY FROM SURFACES ETC.

EDITING FEATURES OF 3D MODELS:-CONSTANT AND VARIABLE FILLETS, CHAMFER, TRIM BY AND TO PLANE, DRAFTING OPTIONS,

MODEL PREPARATION FEATURES:-HOLE AXIS CREATION, DIRECT EDITING OF MODELS, MODIFY OR EDIT FILLETS, OR PROJECTIONS, BASIC LAYOUT FEATURES, COLOR CHANGING OPTIONS.

SURFACE FEATURES:-CREATION OF SIMPLE SURFACES, EXTRUDED SURFACES, DRAFTED SURFACES, REVOLVED SURFACES, OFFSET SURFACES ETC.

MODIFY FEATURES:-TRIMMING OPTIONS. FILL HOLES, EXTENDED EDGES ETC.

DRAFTING FEATURES:-DIMENSIONING FEATURES, ORDINATE FEATURES, ANNOTATIONS, REGENERATIONS, MODIFICATIONS ETC.

## **COMPUTER AIDED MANUFACTURING (CAM)**

MACHINE FEATURES:- TOOL PATH CREATIONS

2D TOOL PATHS:-CONTOUR, DYNAMIC, FACEMILLING, POCKET MILLING, AREA MILLING, ENGRAVING, DRILLING, CIRCLE MILL, SLOT MILLING ETC.

3D TOOL PATHS:-OPTI ROUGH, POCKET ROUGHING, AREA ROUGHING, SCALLOP TOOLING, BLEND MACHINING ETC.

SIMULATION OF BOTH 2D AND 3D TOOL PATHS

POST PROCESSING.

EDITING OF GCODES IN PROGRAM EDITOR (CIMCO EDIT)

## **CNC PROGRAMMING-MANUAL**

CONCEPTS OF CNC PROGRAMMING, CO-ORDINATE SYSTEMS, PART PROGRAMMING, MAIN PROGRAM AND SUB PROGRAMMING, G-CODES AND M-CODES, LINEAR AND CIRCULAR INTERPOLATIONS, DRILLING CYCLES, SPOT DRILLING, PECK DRILLING, THREADING, REAMING, AND FINE BORING CYCLES.

### **[ LATHE ]**

G-CODES AND M-CODES

LINEAR INTERPOLATION :- TAPER & CHAMFER.

CIRCULAR INTERPOLATION :- CW & CCW

SPOT DRILLING, PECK DRILLING, THREADING. (SINGLE START & MULTI START THREADING)

FACING CYCLE. TURNING CYCLE. ROUGHING CYCLE FINISHING CYCLE.

TRANSVERSE AREA CLEARANCE CYCLE. FINISHING CYCLE. GROOVING CYCLE DWELL

FUNCTION BORING CYCLE PRACTICAL SESSION COORDINATE SYSTEMS. TOOL / WORK OFFSET.

TOOLS, WORK / MACHINES DEMO.

### **PRACTICAL SESSION:**

WORK COORDINATE SETTING, MACHINE COORDINATE SETTING, TOOL OFFSETTING, WORK OFFSETTING, JOB SETTING, JOG MODE, MDI MODE, DRY RUN ETC.

### **VALUE ADDED COURSES**

FOREIGN LANGUAGE OPTIONS:- FRENCH/GERMAN/IELTS/TOFEL

INTERVIEW TRAINING, FUNDAMENTAL TRAINING IN INDUSTRIAL AND LABOUR LAW.

COMPUTER COURSE:- MS OFFICE & ADVANCED EXCEL

ADVANCED ENGLISH (LEVEL 2& 3)

SELF DEFENCE CLASSES / MEDIATION / ENTERTAINMENT

### **PROJECT WORK:-**

**Individual 2D and 3D model creation, job setting, tool setting, and machining on VMC / TURNING CENTRE.**