![Aambit logo] **Aambit**
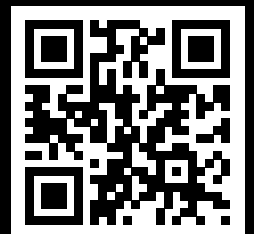DREAM BIGGER, SHINE BRIGHTER

CNC
PROGRAMMING
& OPERATIONS

CNC PROGRAMMING & OPERATIONS

**INTRODUCTION/GENERAL AWARENESS
GENERAL MACHINE TOOLS
MACHINE SPECIFICATION AND CAPACITIES
TYPES OF CUTTING TOOLS
NOMECLATURE AND GEOMETRIES
DESCRIPTION OF CNC MACHINES,
ADVANTAGES,MAIN WORKING PARTS
DESCRIPTION OF CONTROL PANNEL(FANUC)**

CNC LATHE

**MODE SELECTOR,SWITCHES & ITS FUNCTIONS
IN CNC LATHE
TOOL OFFSET,WORK OFFSET,GEOMETRY OFFSET
G CODES AND M CODES AND THEIE EXPLANATIONS
PROGRAMME STRUCTURE
ABSOLUTE AND INCRIMENTAL PROGRAMMING
TOOL NOSE RADIUS COMPANSATION**

TYPES OF CANNED FIXED CYCLES

**STOCK REMOVAL TURNING CYCLE
STOCK REMOVAL FACING CYCLE
PATTERN REPETATIVE CYCLE
OD/ID GROOVING CYCLE
DRILLING CYCLE
MULTIPLE THREADING CYCLE**

PRACTICAL SECTIONS

**MAKING PROGRAMME FOR
SIMPLE SKETCHES**

PRACTICAL TOOL OFFSET,WORK OFFSET USING SIMULATION

TOOL OFFSET
WORK OFFSET
NEW PROGRAMME SETTING AND EDITING

PRACTICAL SECTIONS

APPLICATION OF CNC PROGRAMMES IN MACHINE USING SIMULATION

ASSIGNMENT

MODEL EXAM

CNC MILLING

MODE SELECTOR,SWITCHES AND ITS FUNCTIONS IN CNC MILLING
TOOL OFFSET,WORK OFFSET,GEOMETRY OFFSET
G CODES AND M CODES AND THEIE EXPLANATIONS
PROGRAMME STRUCTURE
ABSOLUTE AND INCRIMENTAL PROGRAMMING
CUTTER COMPANSATION
MAKING A SUB PROGRAM
STEP MILLING PROGRAM
DIFFERENT PLANES
RADIUS PROGRAM WITH 'R', 'I,J,K, & USING COMMA (,)
THREAD MILLING

TYPES OF CANNED FIXED CYCLES

NORMAL DRILLING CYCLE
HIGHSPEED DRILLING
PECK DRILLING
SPOT DRILLING CYCLE
COUNTER BORE CYCLE
ROUGHBORE CYCLE
FINE BORE CYCLE
NORMAL TAPPING CYCLE
REAMING CYCLE
POLAR COORDINATE SYSTEM PROGRAMME
LOCAL COORDINATE SYSTEM PROGRAMME
COORDINATE ROTATION PROGRAMME

PRACTICAL SECTIONS

MAKING PROGRAMME FOR
SIMPLE SKETCHES
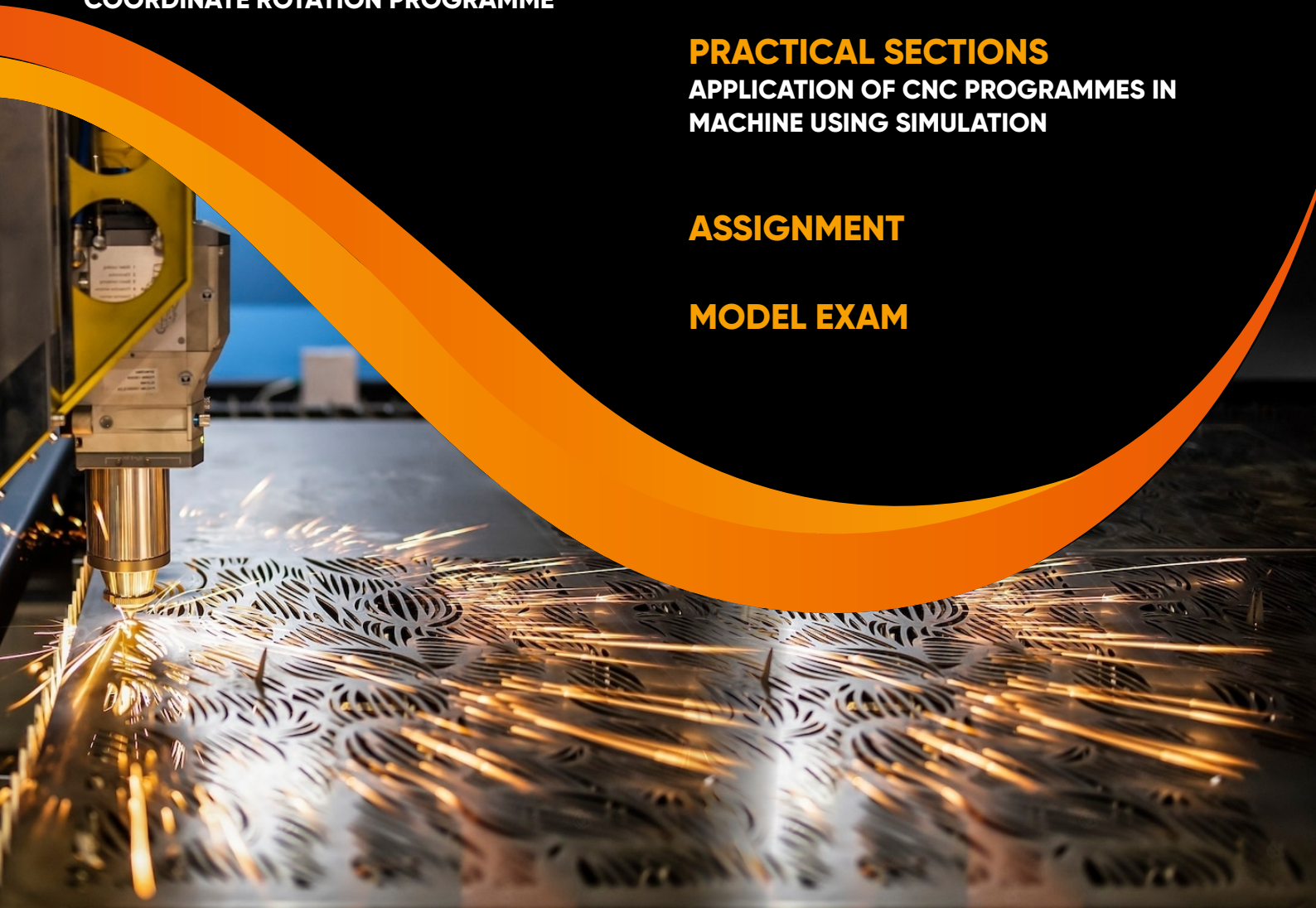
PRACTICAL TOLL OFFSET, WORK OFFSET USING SIMULATION

TOOL OFFSET
WORK OFFSET
NEW PROGRAMME SETTING AND EDITING

PRACTICAL SECTIONS

APPLICATION OF CNC PROGRAMMES IN
MACHINE USING SIMULATION

ASSIGNMENT

MODEL EXAM

AUTOCAD

INTRODUCTION & GENERAL USE OF AUTOCAD
COMMON USES OF AUTOCAD IN MECHANICAL ENGINEERING AND CNC
TYPE OF TOOLS AND ITS APPLICATIONS
LAYOUTS AND PLOTING
SHORT KEYS OF DIFFERENT TOOLS
DRAWING STUDY IN 1ST AND 3RD ANGLE PROJECTION
ASSEMBLY DRAWING
ASSIGNMENT
FINAL EXAM

MASTER CAM

SKETCHING (2 DIMENSIONAL DESIGNING)

CREATE 2 DIMENSIONAL DRAWINGS
LINE,ARC,RECTANGLE,SPILNE,TRINE,BREAK etc.
POINT,LETTERS, CHAMFER, RADIUS, CIRCLE,SPLINE,BOUNDARY BOX
TRANSLATE,ROTATE,COPY,MOVE,MIRROR
DINAMIC TRANSALATE,MOVE TO ORIGINE, STRETCH, SCALE ,AUTO CURSOR
LEVELS,GRAFIC VIEWS,ZOOM,PAN FIT
ANALYZE ENTRY,ANALIZE DISTANCE, DRAFTING,HATCH

PRACTICAL SECTIONS

CREATE 2 DIMENSIONAL DRAWINGS USING DIFFERENT TOOLS

SOLID MODELING (3 DIMENSIONAL DESIGNING)

EXTRUDE, REVOLVE, SWEEP, OFFSET, CHAMFER, FILLET
BOOLEAN, LOFT, SHELL, THICKEN, DRAFT, LAYOUT
CONVERT SOLID TO SURFACE, IMPRESSION ETC
TRANSLATE, ROTATE, COPY, MOVE, MIRROR
DINAMIC TRANSALATE, MOVE TO ORIGINE, STRETCH, SCALE

MODEL PREPARATION
PUSH / PULL, SPLIT, MOVE, MODIFY FEATURE, MODIFY FILLET
REMOVE FACE, REMOVE FILLET, REMOVE HISTORY, DISASSEMBLE, POSITION, CHANGE FACE, SET FEATURE

SURFACE MODELING
EXTRUDE, REVOLVE, SWEEP, OFFSET, CHAMFER, FILLET, DRAFT, NET, TRIM TO CURVE, FILL HOLES LOFT, FLAT BOUNDERY, CHECK MODEL, TRIM, EXTEND ETC. CREATE SURFACE FROM SOLID AND DELETE, BLEND, UNTRIM, REMOVE BOUNTRY, SPLIT TRANSLATE, ROTATE, COPY, MOVE, MIRROR DINAMIC TRANSALATE, MOVE TO ORIGINE, STRETCH, SCALE, AUTO CURSOR

PRACTICAL SECTIONS
CREATE 3 DIMENSIONAL DRAWINGS USING SOLID AND SURFACE TOOLS

ASSIGNMENT

MANUFACTURING
(MASTER CAM MILLING PROGRAMMING)

PRGRAMMING 2 D

POCKET, CONTOUR,REMATCHING
DRILL, DYNAMIC, FACEMILL
DYNAMIC COUNTOUR, PEEL MILL, AREA MILL
BLENDMILL, SLOT MILL, ENGRAVING
SWEPT 2D, SWEPT 3D, REVOLVED
LOFTED, ROULED, TAPPING
CIRCLE MILL, TREAD MILL, THREAD MILL
AUTO DRILL, START HOLE, TRANSFORM
TRANSFORM TRANSLATE, TRANSFORM ROTATE,
TRANSFORM MIRROR

PROGRAMMING 3 D

POCKET, ROUGH CONTOUR
PARALLEL, SCALLOP, RADIAL, SHALLOW
PROJECT, PLUNGE, AREA ROUGHING, MULTI
SURFACE POCKET
WATER LINE, RASTER, HYBRID, PENCIL
BLEND,HORIZONTAL AREA,FLOWLINE
SPIRAL,FINISH CONTOUR

ASSIGNMENT

MANUFACTUARING (MASTER CAM LATHE PROGRAMMING)

FACING, OD ROUGHING, OD FINISHING
FACE GROOVE, OD GROOVE, ID GROOVE,
PROFILE GROOVE, CUTOFF
DRILLING, ID ROUGHING, ID FINISHING
OD THREAD, ID THREADING, TAPER THREAD,
MULTISTART THREAD, INCH THREAD, METRIC
THREAD
CANNED CYCLE- OD /ID ROUGHING AND
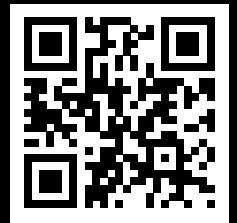FINISHING, PATTERN REPEATING
ID GROOVE,FACE GROOVE,OD GROOVE

ASSIGNMENT

MODEL EXAM
FINAL EXAM

CNC
OPERATION &
PROGRAMMING

AMBIT AUTOMATION

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