



सूक्ष्म लघु एवं मध्यम उद्यम

MICRO SMALL & MEDIUM ENTERPRISE

MSME - TOOL ROOM AHMEDABAD

MSME TOOL ROOM, AHMEDABAD

इन्डो जर्मन टूल रूम, अहमदाबाद

INDO GERMAN TOOL ROOM, AHMEDABAD



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भारत सरकार की संस्थान

Government of India Society

Ministry of Micro, Small & Medium Enterprise

ISO 9001

BUREAU VERITAS
Certification



IGTR/TRG/ 055 /12

14.07.2012

TO WHOM SO EVER IT MAY CONCERN

This is to certify that Indo German Tool Room, Ahmedabad is conducting 4 years Diploma programme in Tool & Die Making since the year 1995. The entry qualification for this course is 10th pass with English subject. The medium of instruction is English only.

M.P. Sutariya

(M.P. Sutariya)

Manager – Training



Plot 5003, Phase IV, GIDC, Mehmedabad Road, Vatva, Ahmedabad - 382 445. Gujarat.

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This is to certify that **Mr. Desai Lakheshkumar Baldevbhai**, Roll No. 06 DTM 04 has undergone In-Plant Training in Training department from July 2007 to July 2008 as a part of curriculum of the 4 years Diploma course in Tool & Die making.

He has undergone in-plant training in the following area :

CONVENTIONAL MACHINING

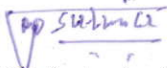
- BENCH SECTION
- TURNING SECTION
- MILLING SECTION
- GRINDING SECTION

CNC MACHINING

- CNC PROGRAMMING
- CNC LATHE
- CNC MILLING
- CNC WIRECUT

DESIGNING

- AUTOCAD
- MASTERCAM
- UNIGRAPHICS
- PRO-ENGINEER


(M.P. Sutariya)
Manager – Training



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TO WHOM SO EVER IT MAY CONCERN

This is certify that Mr. Desai Lakheshkumar Baldevbhai, Roll No. : 06 DTM 04 has successfully completed 4 years Diploma course in Tool & Die Making in the year 2008. During his 5th semester he had done group project of making PROGRESSIVE DIE PRESS TOOL FOR STAPLER PIN HOLDER under the guidance of Batch In-charge, Mr. R.B.Sutariya. It is successfully submitted and accepted.

to submit

(M.P.Sutariya)
Manager – Training



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This is certify that Mr. Desai Lakheshkumar Baldevbhai, Roll No. : 06 DTM 04 has successfully completed 4 years Diploma course in Tool & Die Making in the year 2008. During his 6th semester he had done group project of making PLASTIC MOULD FOR TAPERED GLASS under the guidance of Batch In-charge, Mr. R.B.Sutariya. It is successfully submitted and accepted.

(Signature)

(M.P.Sutariya)
Manager – Training



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6. (b) VERTICAL & HORIZONTAL ORGANIZATION OF CURRICULUM
4- YEAR DIPLOMA IN TOOL & DIE MAKING

Sr. No	Subjects	Effective from session 2003								No. of Hrs. Subject wise	No. of Hrs. Category wise
		Semesters									
		1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th		
1.	HUMAN SCIENCE										180
1.1	Communication Skills - I & II	60	60	-	-	-	-	-	-	120	
1.2	Computer Application - I	-	-		60	-	-	-	-	60	
2.	PHYSICAL SCIENCE										480
2.1	Mathematics - I, II & III	60	60	40	-	-	-	-	-	160	
2.2	Applied Physics - I & II	60	60	-	-	-	-	-	-	120	
2.3	Applied Chemistry - I & II	60	60	-	-	-	-	-	-	120	
2.4	Material Technology - I & II	-	40	40	-	-	-	-	-	80	
3.	ENGG. SCIENCE										440
3.1	Applied Mechanics	-	-	60	-	-	-	-	-	60	
3.2	Control Technology	-	-	-	-	60	-	-	-	60	
3.3	Engineering Metrology - I & II	40	-	-	-	40	-	-	-	80	
3.4	Electrical & Electronic Engg.	-	-	-	-	80	-	-	-	80	
3.5	Industrial Engineering	-	-	-	-	-	60	-	-	60	
3.6	Strength of Materials	-	-	-	40	-	-	-	-	40	
3.7	Computer Application - II	-	-	-	-	60	-	-	-	60	
4.	CORE TECHNOLOGY										1070
4.1	Workshop Technology-I, II & III	80	80	80	-	-	-	-	-	240	
4.2	CNC Technology	-	-	-	40	-	-	-	-	40	
4.3	Heat Treatment	-	-	-	40	-	-	-	-	40	
4.4	Engineering Drawing - I & II	140	140	-	-	-	-	-	-	280	
4.5	Tool Design Theory (Press Tools)	-	-	80	-	-	-	-	-	80	
4.6	Tool Design Theory (Jigs, Fixtures & Gauges)	-	-	50	-	-	-	-	-	50	
4.7	Tool Design Theory (Plastic Moulds - I & II)	-	-	20	140	-	-	-	-	160	
4.8	Tool Design Theory (Forging Dies)	-	-	-	-	40	-	-	-	40	
4.9	Tool Design Theory (Die Casting Dies)	-	-	-	-	40	-	-	-	40	
4.10	Computer Aided Design	-	-	-	100	100	-	-	-	200	
5.	TECHNOLOGY										3590
5.1	Workshop Practice-I, II, III, IV, V, VI	460	460	410	400	360	580	-	-	2770	
5.2	Production Planning & Cost Estimation	-	-	-	-	-	40	-	-	40	
5.3	Tool Design Practice (Press Tools-I & II)	-	-	100	40	-	-	-	-	140	
5.4	Tool Design Practice (Plastic Moulds-I, II & III)	-	-	-	100	100	-	-	-	200	
5.5	Tool Design Practice (Die Casting Dies)	-	-	-	-	-	100	-	-	100	
5.6	Tool Design Practice (Jigs, fixtures & gauges)	-	-	80	-	-	-	-	-	80	
5.7	Tool Design Practice (Forging Dies)	-	-	-	-	-	90	-	-	90	
5.8	Industrial Management	-	-	-	-	-	40	-	-	40	
5.9	Entrepreneurship Development	-	-	-	-	-	50	-	-	50	
5.10	Maintenance & Safety Engg.	-	-	-	-	80	-	-	-	80	
A.	Industrial Training & Project work	-	-	-	-	-	-	960	960	1920	1920
B.	No. of subjects per semester	8	8	10	9	9	7	1	1	-	-
C.	Total hours for theory	500	500	370	420	500	190	Nil	Nil	-	-
D.	Total hours for Practice	460	460	590	540	460	770	960	960	-	-
E.	Total no. of hours per semester	960	960	960	960	960	960	960	960	7680	7680

The management reserves the right to change the syllabus based on its need without prior intimation to any candidate



INDO GERMAN TOOL ROOM, AHMEDABAD – TRAINING CENTRE

COURSE CONTENT – DIPLOMA IN TOOL & DIE MAKING

I SEMESTER

1. **COMMUNICATION SKILL-1:**
 - PASSAGES FOR COMPREHENSION,*SHORT STORIES, *APPLIED GRAMMAR,*PARAGRAPH WRITING ON GENERAL INTEREST TOPICS.
2. **MATHEMATICS-1:**
 - ALGEBRA,*TRIGONOMETRY,*DIFFERENTIAL CALCULUS.
3. **APPLIED PHYSICS-1:**
 - PHYSICS & ITS IMPORTANCE IN TECHNICAL EDUCATION ,
* S.I.UNITS,*FORCE & MOTION,*CIRCULAR MOTION ,*PERIODIC MOTION,*WAVES & WAVEMOTION, *ULTRASONIC *GRAVITATION,
*MOLECULAR PHENOMENA IN SOLIDS,LIQUIDS&GASES,*KINETIC THEORY OF GASES, *SURFACE TENSION,*VISCOSITY,*HEAT&WORK,
*HYGROMETRY,*HEAT TRANSFER,*D.C. CIRCUITS.
4. **APPLIED CHEMISTRY-1:**
 - ATOMIC STRUCTURE & NUCLEAR CHEMISTRY,*COLLIGATIVE PROPERTIES & CHEMICAL ENERGITICS, *CHEMICAL EQUILIBRIUM, *PERIODIC CLASSIFICATION OF ELEMENTS, *REDOXIMETRY, *ELECTROCHEMISTRY, *THERMOCHEMISTRY SURFACE CHEMISTRY, *CHEMICAL PROCESS TECHNOLOGY ,*METALS & ALLOYS,*CORROSION OF MATERIALS AND ITS PREVENTION,LUBRICANT & LUBRICATION.
5. **ENGINEERING METROLOGY-1:**
 - SCOPE & NEED OF METROLOGY,*BASIC MEASURING INSTRUMENTS, *ERRORS, *LIMITS,FITS&GAUGES, *SCREW THREAD AND GEAR METROLOGY.
6. **WORKSHOP TECHNOLOGY-1:**
 - INTRO TO WORKSHOP TECHNOLOGY,*SAFETY PRECAUTIONS,*BASIC METAL WORKING TECHNIQUE WITH HAND TOOLS,*METAL WORKING TECHNIQUES –JOINING,* METAL WORKING TECHNIQUES –HOT FORMING, *DRILLING OPERATIONS AND DRILLING MACHINES, *SHAPING OPERATIONS & SHAPER,* SAWING OPERATION & POWER HACKSAW,* SAWING OPERATION & BAND SAW,*HAND GRINDING & PEDESTAL GRINDER,*TURNING OPERATIONS & LATHE,* MILLING OPERATIONS & MILLING.
7. **ENGINEERING DRAWING:**
 - INTRODUCTION,*BASICS OF DRAWING:LETTERING , SCALES,LINES, GEOMETRIC CONSTRUCTIONS , ORTHOGRAHPIC PROJECTIONS, DIMENSIONING *BASICS OF ISOMETRIC PROJECTION.



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COURSE CONTENT – DIPLOMA IN TOOL & DIE MAKING

II SEMESTER

1. COMMUNICATION SKILL-2:

- PASSAGES FOR COMPREHENSION, *TECHNICAL WRITING, *BUSINESS LETTERS, *DIRECT & INDIRECT SPEECH, *UNSEEN PASSAGE.

1. MATHEMATICS-2:

- CO-ORDINATE GEOMETRY, *VECTOR ALGEBRA, *INTEGRAL CALCULUS, *MATRIX.

2. APPLIED PHYSICS-2:

- HIGH TEMPERATURE MEASUREMENTS, *HEATING EFFECTS OF ELECTRIC CURRENT, *COMPARATIVE STUDY OF CELLS, BATTERIES AND THEIR MAINTENANCE, *MAGNETIC FIELD, *FORCE OF CURRENT CARRYING CONDUCTOR, *MOVING CHARGE IN MAGNETIC FIELD, *QUANTUM NATURE OF LIGHT PHOTO-ELECTRIC EFFECT, *RADIO ACTIVITY, MASS ENERGY, EQUIVALENT MASS DEFECT, BINDING ENERGY, FISSIONS AND FUSION, *REFRACTION OF LIGHT, *DEFECTS OF IMAGES, *OPTICAL INSTRUMENTS, *DISPERSION OF LIGHT AND SCALE OF ELECTRO MAGNETIC SPECTRUM, *MODERN PHYSICS

3. APPLIED CHEMISTRY-2:

- IONIZATION, PH, CORROSION AND PROTECTION, *FUEL UNCLEAR FUEL AND FUEL CELLS, *GLASS AND REFRACTORY, *CARBON CHEMISTRY, HIGH POLYMER, *INSUATORS, *GALVANIZING AND ELECTROPLATING, *PAINTS, VARNISHES AND LACQUERS, *POLLUTION AND CONTROL, *WATER, *BIOMASS AND WASTE RECYCLING, *SOAPS AND DETERGENTS.

4. MATERIAL TECHNOLOGY -1:

- CRYSTAL SYSTEM & IMPERFECTIONS, *MECHANICAL PROPERTIES, *DEFORMATION, *MANUFACTURING & APPLICATION OF STEEL & CAST IRON, *ALLOY STEEL & ALLOYING ELEMENTS, *DESTRUCTIVE & NONDESTRUCTIVE TESTING.

5. WORKSHOP TECHNOLOGY-2:

- DRILLING OPERATIONS & DRILLING M/C's-2, * DRILLING OPERATIONS & DRILLING M/C's-3, *PLANNING OPERATION & PLANER, *SLOTING OPERATIONS & SLOTTING M/C's, *TURNING OPERATION & LATHE-2, *TURNING OPERATION & LATHE-3, *MILLING OPERATIONS & MILLING M/C's-2, *GRINDING OPERATIONS & GRINDING M/C's-1, *PANTOGRAPH, *SINGLE LIP GRINDER.

7. ENGINEERING DRAWING-2:

- SURFACE TEXTURE, LIMITS, FITS & TOLERANCES, GEOMETRICAL TOLERANCES, *DEVELOPMENT OF SURFACES, *DRAWING OF ELEMENTS, *DRAWING OF SUBASSEMBLY & ASSEMBLY.



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COURSE CONTENT - DIPLOMA IN TOOL & DIE MAKING

III SEMESTER

1. **MATHEMATICS-3:.**
DIFFERENTIAL CALCULUS,*INTEGRAL CALCULUS
2. **MATERIAL TECHNOLOGY -2:**
 - NON-FERROUS METALS & ALLOYS, *CERAMICS & REFRACTORIES, *POLYMERS, *COMPOSITE MATERIALS, *CORROSION & OXIDATION, *POWDER METALLURGY, *DISPOSAL & RECYCLING OF MATERIALS.
3. **APPLIED MECHANICS:**
 - SCALAR & VECTOR QUANDITIES, SYSTEM OF UNITS, *COPLANAR CONCURRENT FORCES,*COPLANAR, PARALLEL &NONCONCURRENT FORCES, *CENTRE OF GRAVITY,* FRICTION, *RECTILINEAR MOTION,*CURVILINEAR MOTION, *ENGINEERING APPLICATION OF WORK,POWER & ENERGY, *SIMPLE MACHINES.
4. **WORKSHOP TECHNOLOGY-3:**
 - MILLING OPERATION & MILLING MACHINE-3, *GRINDING OPERATION & GRINDING MACHINE-2, *GRINDING OPERATION & GRINDING MACHINE-3, *PRECISION GRINDING AND GRINDING MACHINE, * GEAR AND GEAR CUTTING TECHNIQUES, * JIG BORING OPERATION & JIG BORING MACHINE, *JIG GRINDING & JIG GRINDER, * PROFILE GRINDING & PROFILE GRINDER, * COPY MILLING & MILLING MACHINE, * EDM PROCESS & MACHINE, * ECM, * USM, * AJM, * EBM, * CHEMICAL MACHINING, * ELECTRO CHEMICAL GRINDING, * IBM, * LBM, * PAM, * RAPID PROTOTYPING, * POLISHING, LAPING, HONING, * ELECTRO PLATING, * HARD CHROME PLATING, BLACKENING, * SHOT BLASTING, * GALVANIZING.
5. **TOOL DESIGN THEORY-(PRESS TOOLS-1):**
 - INTRODUCTION, *PRESTOOL OPERATIONS.*BASIC ELEMENTS OF PRESS TOOLS, *CLASSIFICATION OF PRESS TOOLS, * DESIGN PRAMETER, *CLASSIFICATION OF PRESSES..
 - CLASSIFICATION OF NONCUTTING DIES, DRAWING, DESIGN PARAMETERS, *CLASSIFICATION OF PRESS TOOLS-INTEGRATED DIES, *MATERIAL HANDELING, *ESTIMATION, *DIE MAINTENANCE SAFETY & STORAGE, *SPECIFICATION.
6. **TOOL DESIGN THEORY (JIGS, FIXTURES & GAUGES):**
 - INTRODUCTION, * BASIC ELEMENTS OF JIGS & FIXTURES, *LOCATING ELEMENTS, *CLAMPING ELEMENTS, *GUIDING ELEMENTS, *SUPPORTING ELEMENTS, *CLASSIFICATION OF JIGS, *DESIGN OF JIG, *TOOL SETTING ELEMENTS, *CLASSIFICATION OF FIXTURES, *DESIGN OF FIXTURE, *ESTIMATION, *MAITENANACE, SAFETY & STORAGE, *INTRODUCTION, *CLASSIFICATION OF GAUGES, *DESIGN PARAMETERS, *DESIGN OF GAUGE, *MAINTENANCE, SAFETY & STORAGE.



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COURSE CONTENT – DIPLOMA IN TOOL & DIE MAKING

7. TOOL DESIGN THEORY (PLASTIC MOULDS-1):

- INTRODUCTION, *MOULDING OPERATION, *ELEMENTS OF MOULD & THEIR FUNCTION, *CLASSIFICATION OF MOULD, *DESIGN PARAMETER FOR MOULD, MATERIAL & MACHINE.

8. TOOL DESIGN PRACTICE(PRESS TOOLS-1):

- ELEMENTS OF DESIGN PROCESS, *PRESS TOOL PARTS, *COMPONENTS/LAYOUTS, *DATA /WORKSHEET, *CONCEPTUAL DESIGN, *DESIGN OF PRESSTOOLS

9. TOOL DESIGN PRACTICE (JIGS ,FIXTURES & GAUGES):

- ELEMENTS OF DESIGN PROCESS, * ELEMENTS OF JIGS & FIXTURES, *CALMPING ELEMENTS, *CONCEPTUAL DESIGN OF JIG, *DESIGN AND DRAWING OF JIG, *CONCEPTUAL DESIGN OF FIXTURE, *DESIGN AND DRAWING OF FIXTURE, *CAD, *CONCEPTUAL DESIGN OF GAUGES, *DESIGN OF GAUGES

IV SEMESTER

1. COMPUTER APPLICATION-1:

- BASICS OF COMPUTER, *DATA REPRESENTATION & NUMBER SYSTEM, *COMPUTER LANGUAGE, *OPERATING SYSTEM, *M.S.WORD,* M.S.EXCEL, *M.S.POWERPOINT.

2. STRENGTH OF MATERIALS:

- *INTRODUCTION, *STRESSES & STRAINS,*SHEAR FORCE AND BENDING MOMENT, *STRESS IN BEAMS, *DEFLECTION, * COLUMN & STRUT, *TORSION, *SPRING.

3. CNC TECHNOLOGY:

- INTRODUCTION, *CLASSIFICATION OF NC SYSTEM, * FUNDAMENTAL OF PART PROGRAMMING, *TOOLING FOR CNC MACHINES, *SPECIFICATION OF CNC OPERATION AND MACHINES.

4. HEAT TREATMENT:

- *INTRODUCTION, *PHASE DIAGRAM WITH SPECIAL REFERENCES TO IRON & STEEL, *ISOTHERMAL TRANSFORMATION (T-T-T CURVE, *HEAT TREATMENT PROCESS FOR STEEL, *CASE HARDENING STEEL, *HEAT TREATMENT OF PLAIN CARBON STEEL, *HEAT TREATMENT OF TOOL STEEL, * HEAT TREATMENT OF CAST IRON, * FURNACE & EQUIPMENT, *DEFECTS CAUSES & PREVENTION DURING HEAT TREATMENT.

5. TOOL DESIGN THEORY (PLASTIC MOULD –2):

INTRODUCTION, *MOULDING OPERATION, *ELEMENTS OF MOULDS & THEIR FUNCTIONS, *CLASSIFICATION OF MOULDS, *DESIGN PARAMETERS FOR MOULD, MACHINE & MATERIALS, *SPECIFICATION, *INTRODUCTION TO SIMULATION PACKAGE.



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6. TOOL DESIGN PRACTICE (PRESS TOOLS-2):

- COMPONENTS/LAYOUT, *DATA/WORKSHEET, *CONCEPTUAL DESIGN, *DESIGN OF PRESS TOOLS, *PRESS TOOL DATA, *CAD.

7. TOOL DESIGN PRACTICE (PLASTIC MOULDS-1):

- ELEMENTS OF DESIGN PROCESS, *MOULD PARTS, *COMPONENTS & LAYOUTS, *WORK/DATA SHEET, *CONCEPTUAL DESIGN, *DESIGN OF MOULDS, *MOULD DATA, *CAD.

8. COMPUTER AIDED DESIGN & DRAWING-1:

- INTRODUCTION, * INTRODUCTION TO AUTOCAD EQUIPMENT, *INTRODUCTION TO LEARNING ASSISTANCE (LAB TALK), *CREATION/EDITING OF LINES, * CREATION/EDITING OF CURVES, * CREATION/EDITING OF SUBJECTS.

V SEMESTER

1. CONTROL TECHNOLOGY:

- INTRODUCTION, *FUNDAMENTAL PRINCIPLES, *ENERGY SUPPLY ELEMENTS, *VALVES, *OUTPUT ELEMENTS, *CIRCUIT DESIGN AND APPLICATION.

2. ENGINEERING METROLOGY -2:

- INTRODUCTION, *ADVANCED ENGG. MEASUREMENTS, *SURFACE FINISH, *NON DESTRUCTIVE TESTING, *COMPARATORS, *MACHINE TOOL TESTING, *ADVANCED MEASURING EQUIPMENT.

3. ELECTRICAL & ELECTRONICS ENGINEERING

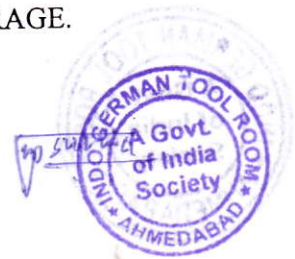
- INTRODUCTION TO ELECTRICITY & A.C. CIRCUITS., TRANSFORMER, MOTOR & GENERATOR, THREE PHASE AND SINGLE INDUCTION MOTOR, ALTERNATOR, ELECTRICAL WIRING INSTALLATION AND TESTING, ELECTRICAL HEATING AND WELDING, ELECTRICAL SAFETY AND EARTHING, ELECTRICAL MEASURING INSTRUMENTS, BASIC ELECTRONICS, POWER SUPPLY, AMPLIFIER, SERVO MOTOR AND STEPPER MOTOR, DIGITAL AND ANALOG PRINCIPLES.

4. COMPUTER APPLICATION -2:

- DATA BASE MANAGEMENT SYSTEM, *PROGRAMMING LANGUAGE, *VISUAL BASIC 6, *NETWORKING/COMMUNICATION.

5. TOOL DESIGN THEORY (FORGING DIES):

- INTRODUCTION TO FORGING DIES, *FORGING OPERATIONS, *ELEMENTS OF FORGING DIES, *CLASSIFICATION OF FORGING DIES, *TOOL DESIGN PARAMETERS, *SPECIFICATION AND ESTIMATION, *MAINTENANCE SAFETY AND STORAGE.



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COURSE CONTENT – DIPLOMA IN TOOL & DIE MAKING

6. TOOL DESIGN THEORY (DIE CASTING DIES):

- INTRODUCTION, *DIE CASTING OPERATIONS, *ELEMENTS OF DIE CASTING DIES & THEIR FUNCTION, *CLASSIFICATION OF DIE CASTING DIES, *DESIGN PARAMETERS RELATED MATERIAL MACHINES & DIES, *MATERIAL HANDLING, *ESTIMATION, *MAINTENANCE SAFETY & STORAGE, *SPECIFICATION, *COMPUTER AIDED DESIGN ANALYSIS.

7. COMPUTER AIDED DESIGN & DRAWING –2:

- CREATION/EDITING OF CURVES, *CREATION/EDITING OF OBJECTS, *CREATION AND EDITING OF 3D OBJECTS, *CREATION /EDITING OF SIMPLE ASSEMBLIES UP TO 6 ELEMENTS, *CREATION/EDITING OF SIMPLE ASSEMBLY OF PRESSTOOL

8. TOOL DESIGN PRACTICE (PLASTIC MOULDS-2 & 3)

- ELEMENTS OF DESIGN PROCESS, *MOULD PARTS, *COMPONENTS/LAYOUTS, *MOULD DATA, *CAD.
- COMPONENTS/LAYOUT, *WORK/DATASHEET, *CONCEPTUAL DESIGN, *DESIGN OF MOULDS, *MOULD DATA, *CAD.

9. MAINTENANCE & SAFETY ENGINEERING

- SIGNIFICANCE OF MAINTENANCE, *CONCEPT OF BASIC MAINTENANCE PRACTICES, *WEARS & ITS EFFECTS, *LUBRICATION & LUBRICATION SYSTEM, *FAULT TRACING, TROUBLE SHOOTING & REMEDIES, *LEAKAGES, *ASSEMBLY & DISASSEMBLY OF MACHINE PARTS, *MAINTENANCE OF HYDRAULICS & PNEUMATICS SYSTEMS, *PREVENTIVE MAINTENANCE, * SAFETY ENGINEERING.

VI SEMESTER

1. INDUSTRIAL ENGINEERING:

- INTRODUCTION, *PLANT LAYOUT, *PRODUCTIVITY AND WORK STUDY, *VALUE ANALYSIS, *NETWORK ANALYSIS, *QUALITY MANAGEMENT, *FACILITIES PLANNING, *INVENTORY CONTROL, *INTRODUCTION TO ENGG. ECONOMICS.

2. PRODUCTION PLANNING & CONTROL , ESTIMATION & COSTING:

- INTRODUCTION, *PRODUCTION PLANNING, *PRODUCTION CONTROL, *ELEMENTS OF COST, *COST ESTIMATION, *PROFIT & BUDGET.

3. TOOL DESIGN PRACTICE (DIE CASTING DIES):

- ELEMENTS OF DESIGN FOR CASTING DIES, *STANDARD PARTS OF DIES, *COMPONENT & LAYOUT, * WORK DATASHEET, *CONCEPTUAL DESIGN, *DESIGN OF DIE CASTING DIES, *DIE CASTING DIES, CAD.



INDO GERMAN TOOL ROOM, AHMEDABAD – TRAINING CENTRE

COURSE CONTENT – DIPLOMA IN TOOL & DIE MAKING

4. TOOL DESIGN PRACTICE (FORGING DIES):

- INTRODUCTION TO FORGING DIES, *FORGING OPERATIONS, *ELEMENTS OF FORGING DIES, *CLASSIFICATION OF FORGING DIES, *TOOL DESIGN PARAMETERS, *SPECIFICATION AND ESTIMATION, *MAINTENANCE SAFETY AND STORAGE.

5. INDUSTRIAL MANAGEMENT:

- INTRODUCTION, *HUMAN RELATION, *MOTIVATION, *ATTITUDE, *COMMUNICATION, *STRESS MANAGEMENT, *DECISION MAKING, *STRUCTURE OF INDUSTRIAL ORGANISATION, *SUPERVISION & LEADERSHIP, *INDUSTRIAL LEGISLATION, *WAGES & INCENTIVES, *ACCOUNTING & BUDGETING, *PURCHASE MANAGEMENT.

6. ENTREPRENEURSHIP DEVELOPMENT:

- INTRODUCTION, *INFORMATION GATHERING FOR IDENTIFICATION OF OPPORTUNITY, *PRODUCT & SERVICE DESIGN, *PROJECT FORMULATION FOR ESTABLISHING OWN BUSINESS, *MANAGING CRITICAL RESOURCES, *ACQUISITION OF RESOURCES REQUIRED FOR STARTING BUSINESS, *ESTABLISHING & RUNNING THE ENTERPRISE, *EVALUATION & QUALITY CONTROL, *PRESENTATION OF PROJECT REPORT FOR STARTING A NEW BUSINESS, *SSI & ITS PROMOTIONAL AGENCIES, *RISK MANAGEMENT, *CASE STUDIES.

VII SEMESTER

- LAST TWO SEMESTER ARE OCCUPIED FOR THE PROJECT WORK.
- DURING THE PROJECT WORK AND INPLANT TRAINING ALL THE TRAINEE ARE UNDERGOING TRAINING IN VARIOUS SECTIONS IN PRODUCTION DEPARTMENT AND TRAINING DEPARTMENT AS INPLANT TRAINEE.
- THE PROJECT WORK CONSISTS OF FOLLOWING DEPARTMENTS TO BE COVERED :

1. DESIGN DEPARTMENT.
2. PRODUCTION DEPARTMENT.
3. PRODUCTION AND PLANNING CONTROL DEPARTMENT.
4. MARKETING DEPARTMENT.
5. QUALITY CONTROL DEPARTMENT.
6. HEAT TREATMENT DEPARTMENT.
7. CNC DEPARTMENT.
8. ASSEMBLY DEPARTMENT.
9. CAD/CAM DEPARTMENT.



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COURSE CONTENT – DIPLOMA IN TOOL & DIE MAKING

- 10. TRAINING WORKSHOP.
- 11. TRAINING DEPARTMENT.

- THE TOTAL TOOLING CONCEPT AND PRODUCTION CONCEPT ARE VIRTUALLY DEVELOPED IN THIS TWO SEMESTER SO THAT A TRAINEE CAN TAKE AN EDGE OVER OTHERS IN THE ENGINEERING FIELD WHILE COMPETING WITH OTHERS.

SEMESTER WISE PRACTICAL CONTENTS

I SEMESTER:

- INTRODUCTION:
 - 1. PRESENTATION OF IGTR AS AN ORGANISATION.
 - 2. SAFETY GUIDELINES, WORKING ENVIRONMENT AND PROTECTION.
 - 3. IDENTIFICATION OF WORKPLACE, TOOLS, TIME TABLE ETC.
- BENCH SECTION:
 - ✓ SKILLS:
 - FILING, HACKSAWING, PUNCHING, MARKING, CENTER DRILLING, DRILLING, COUNTER BORING, COUNTER SINKING, REAMING, TAPING, SHEARING, REALIGNING, CURVING, FITTING AND ASSEMBLY OF COMPONENTS.
- TURNING:
 - ✓ SKILLS:
 - PLANE TURNING, STEP TURNING, FACING, TAPER TURNING, RECESSING, UNDER CUTTING, THREAD CUTTING PARTING, GROOVING.
- MILLING:
 - ✓ SKILLS:
 - FACE MILLING, STEP MILLING, PROFILE MILLING, SAWING OPERATION, SLOT MILLING, GROOVE MILLING, POLYGON MILLING.
- GRINDING:
 - ✓ SKILLS:
 - SURFACE GRINDING, EXTERNAL CYLINDRICAL GRINDING, INTERNAL CYLINDRICAL GRINDING.

II SEMESTER:

- HEAT TREATMENT AND HARDNESS TESTING, SHEET METAL WORKING, TOOL AND CUTTER GRINDING, DIMENSIONAL METROLOGY, STORE MANAGEMENT AND MATERIAL PREPARATION.



INDO GERMAN TOOL ROOM, AHMEDABAD – TRAINING CENTRE

COURSE CONTENT – DIPLOMA IN TOOL & DIE MAKING

III SEMESTER:

- MANUFACTURING OF HAND MOULD, MANUFACTURING OF GUIDE PLATE TOOL, BASIC PNEUMATICS AND BASIC HYDRAULICS, EDM, MIKRON, PANTOGRAPH, VERTICAL GRINDER.

IV SEMESTER:

- MANUFACTURING OF JIG AND FIXTURE, CNC MILLING PROGRAMMING AND HANDLING, CNC TURNING PROGRAMMING AND HANDLING, CNC WIRECUT PROGRAMMING AND HANDLING, CNC EDM PROGRAMMING AND HANDLING, PROGRAMMING AND SIMULATION ON SOFTWARES.

V SEMESTER:

- GROUP PROJECT WORK:
 - ❖ COMPONENT SELECTION , COMPONENT DESIGN, MATERIAL SELECTION OF COMPONENT, DESIGN OF PRESS TOOL FOR THE COMPONENT, DECIDING MATERIAL OF THE DIE AND PUNCH INSERTS, PREPARATION OF PART PROCESS SHEET, MANUFACTURING OF PRESS TOOL , PRESS TOOL ASSEMBLY, TOOL TRIAL, REWORK IF REQUIRED, COSTING AND ESTIMATION OF THE PRESS TOOL.

VI SEMESTER:

- GROUP PROJECT WORK:
 - ❖ COMPONENT SELECTION, COMPONENT DESIGN, MATERIAL TESTING AND SELECTION, DESIGN OF MOULD, DESIGN OF CORE AND CAVITY, DECIDING MATERIAL OF CORE AND CAVITY, PREPARATION OF PART PROCESS SHEET, MANUFACTURING OF MOULD, ASSEMBLY OF MOULD, TRIAL OF THE MOULD, REWORK IF REQUIRED, COSTING AND ESTIMATION OF THE MOULD, PROJECT REPORT ON MANUFACTURED MOULD.

[NOTE: THE SUBJECT CONTENT REMAINS THE SAME FOR ALL DIPLOMA BATCHES BUT IT MAY VARY IN THE SEMESTER PERIOD IN WHICH THEY ARE CONDUCTED.]

