

Name of the Department: Mechanical Engineering

Semester: III rd Semester

Laboratory Name: Manufacturing Process- I

List of Practical as per the syllabus:

1. Study of Cupola furnace.
2. Study of Moulding techniques.
3. Study of Casting process.
4. Study of Pattern making.
5. Study of Joining process.
6. Study of Forming process.
7. Study of Drawing process.
8. One job – Pattern making.
9. One job- Casting.
10. One job – Welding.

Laboratory Name: Engineering Metallurgy

List of Practical as per the syllabus:

1. Preparation of samples for metallographic examination.
2. Study of optical microscope.
3. Study of microstructures of steel specimen.
4. Study of microstructures of cast iron samples.
5. Study of microstructures of non ferrous alloys.
6. Study of heat treatment of tool steel.
7. Study of heat treatment of stainless steel.
8. Study of heat treatment of steel sample.
9. Mechanical testing of metallic samples.
10. Study of effect of alloying elements on properties of steel.

Laboratory Name: Machine Drawing lab.

List of Practical as per the syllabus:

1. Conversion of pictorial views.
2. Sectional views of machine component.
3. Drawings of standard components.
4. Drawings of standard assemblies with components.
5. Drawings of small assemblies with components.
6. Detailed drawings of assembly.

7. Drawing of large assembly with components drawings assembly and sub assembly drawings.
8. Preparation and explanation on production drawings.
9. Process sheet for a component with maximum five operations.
10. Computer print out on 3D modelling using CAD.
11. Reading Blue prints.

Semester: IVth Semester

Laboratory Name: Machining Process

List of Practical as per the syllabus:

1. Study of single point cutting tool.
2. Study of various forces on single point cutting tool.
3. Study of multi point cutting tool (milling , drilling).
4. Study of lathe machines.
5. Study of shaper mechanism.
6. Study of broaching machines.
7. One job on milling.
8. One job on drilling and boring.
9. One job on thread cutting, taper turning.
10. One job on surface grinding.
11. One job on shaper.

Laboratory Name: Hydraulic machines.

List of Practical as per the syllabus:

1. To calculate Cd value of venturimeter.
2. To calculate Cd of orifice meter.
3. To calculate Cv of pitot tube.
4. To calculate loss of heat in a pipe flow.
5. To calculate Critical velocity in a Reynold's experiment.
6. Verification of Bernoulli's theorem.
7. Impact of jet.
8. To calculate meta-centre of a floating body.
9. Calculate the overall efficiency of a pelton turbine.
10. To calculate overall efficiency of francis turbine.
11. To calculate the efficiency of Reciprocating pump.

Laboratory Name: Mechanics of materials.

List of Practical as per the syllabus:

1. Study of Universal testing machine.
2. Tension test on metal.
3. Compression test on materials.
4. Cut test on metal.
5. Impact test on metal.
6. Hardness test on metal.
7. Torsion test on metal.
8. Study of deflection of beams.
9. Study of buckling of column.
10. Study of springs.

Semester: Vth Semester

Laboratory Name: Heat Transfer Lab.

List of Practical as per the syllabus:

1. To determine thermal conductivity of insulating powder.
2. To determine Stefan Boltzman's constant.
3. To determine emissivity of test plate.
4. To determine heat transfer coefficient in natural convection over vertical pipe.
5. To determine thermal conductivity of metal rod.
6. To determine heat transfer coefficient in dropwise and filmwise condensation.
7. To determine fin effectiveness and fin efficiency .
8. Study of temperature measuring equipments.

Laboratory Name: Mechanical Measurement Lab.

List of Practical as per the syllabus:

1. Calibration of pressure gauge by using dead weight tester.
2. Study of Stroboscope.
3. Study of sound level meter.
4. Study of vibration meter.
5. Study of strain gauge indicator.
6. Study of liquid level measurement system.
7. Measurement of speed using magnetic pick up and inductive pick up.
8. Measurement of temperature using Resistance temperature detector.(RTD)

Laboratory Name: Production Technology Lab.

List of Practical as per the syllabus:

1. Setting the sine bar for given angle using slip gauge.
2. Use of optical flats.
3. Calibration of micrometer / dial guage.
4. Setting the sine bar for given angle using Vernier height guage.
5. Measurement of effective diameter of screw thread using three wire method.
6. Study of GO-NOGO gauges for given fit.
7. Study of radius gauges.
8. Study of Tool-Maker's microscope for measuring angle of single point cutting tool.
9. Use of Auto – Collimeter for straightness and flatness measurement.
10. Setting of Electrical Comparator for inspection of component.
11. Setting adjustable gauges using slip gauges.

Semester: VI th Semester

Laboratory Name: Machine Drawing Lab.

List of Practical as per the syllabus:

1. Conversion of pictorial views.
2. Sectional views of machine component.
3. Drawings of standard components.
4. Drawings of standard assemblies with components.
5. Drawings of small assemblies with components.
6. Detailed drawings of assembly.
7. Drawing of large assembly with components drawings assembly and sub assembly drawings.
8. Preparation and explanation on production drawings.
9. Process sheet for a component with maximum five operations.
10. Computer print out on 3D modelling using CAD.
11. Reading Blue prints.

Laboratory Name: Industrial Electronics.

List of Practical as per the syllabus:

1. To study and verify the operation of logic gate.
2. To verify De- Morgan's theorem and to observe its simulation on computer.
3. To design and implement half and full adder circuit.

4. To study and verify the operations of S-R, J-K, T flip flop.
5. Study of memory input mapping and operating commands and function keys of microprocessor kit.
6. Execution of data transfer program.
7. To study execution of data bytes exchange.
8. Identification of D.C machine parts and its constructional details.
9. Study of squirrel case and slip ring induction motor construction.

Laboratory Name: Computer Application- II Lab.

List of Practical as per the syllabus:

1. To study client -server model.
2. To study Entity relation model.
3. To create table in database.
4. To create table with constraints.
5. Use of 'Alter' statement.
6. Use of 'Insert' statement.
7. Use of 'Select' statement.
8. Use of 'Update' statement.
9. Use of 'Delete' statement.
10. Use of built in aggregate function.
11. Use of Order by and Group by.

Semester: VII th Semester

Laboratory Name: Machine Design III.

List of Practical as per the syllabus:

1. Design of flywheel.
2. Design of journal bearing.
3. Design of selection of antifriction bearing.
4. Design of belt drive.
5. Design of chain drive.
6. Design of wire rope.
7. Design of gear drive.

Laboratory Name: Energy Conversion II .

List of Practical as per the syllabus:

1. Study of reciprocating compressor.
2. Study of coil ignition system.
3. Study of two stroke petrol engine.
4. Study of four stroke petrol engine
5. Study of Morse test.
6. Study of gas turbine.
7. Study of carburettor.
8. Study of cooling and lubrication system.

Laboratory Name: Management Information System .

List of Practical as per the syllabus:

1. To create database for employee of an industry.
2. To create database for inventory of an industry.
3. To create database for maximum retail price of product.
4. To study of the

Semester: VIIIth Semester

Laboratory Name: Energy Conversion III.

List of Practical as per the syllabus:

1. Study of house hold refrigerator.
2. Study of vapour compression system.
3. Study of air preparatory unit.
4. Study of various industrial pneumatic circuit.
5. Study of energy conservation opportunities in industry.
6. Study of hydraulic pumps and valves.
7. Study of desert coolers.
8. Study of air conditioning system.

Laboratory Name: Computer Aided Design..

List of Practical as per the syllabus:

1. Introduction to Autocad , Pro E and Ansys.
2. Bresenhem's algorithm for drawing alloy.
3. Program on Bresenhm algorithm for drawing a circle.

4. Program on Bresenhm algorithm for drawing an ellipse.
5. Program on 2D transformation.
6. Program on 3D transformation.
7. Program on 1D FEM.
8. FEM on trust.
9. Application of Autocad to draw a machine part assembly.

Laboratory Name: Automation

List of Practical as per the syllabus:

1. Study of Autoflow lines.
2. Study of Numerical control system.
3. Study of Robotics.
4. Study of Automated material handling system.
5. Study of Automated inspection system.
6. Study of Group technology.
7. Study of CAPP systems.

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