

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

DEPARTMENT OF MECHANICAL & PRODUCTION ENGINEERING

a) List of Laboratories and Class Rooms

1. Heat Engine Lab., RAC Lab
2. Heat Transfer Lab.
3. CAD & Simulation Lab.
4. Dynamics of Machines Lab.
5. Metallurgy and Heat Treatment.
6. Hydraulics Machines lab.
7. Fluid Mechanics Lab.
8. Mechanical Measurement & Metrology Lab.
9. Machine Tool & Machining Science Lab
10. Metal Forming Lab
11. Industrial Automation and Robotics Lab
12. Industrial Engineering Lab
13. CGL Lab
14. Manufacturing Research Lab.
15. Pump Testing Lab.
16. Department Computer Centre.
17. Computation lab
18. G9, G10, F109, F110, F112, F113, F114, S203, S204, S207, S208

b) List of major equipments available lab-wise.

1. Heat Engines, Ref. & AC Lab.

Major Equipments

- Cochran Boiler
- Compound Steam Engine
- Vertical Steam Engine
- Reader Vertical Steam Engine
- Steam Condense
- Impulse Steam Turbine
- Lister Diesel Engine
- Krimo Two Stroke Diesel Engine
- Cooper Diesel Engine
- Kirloskar/Cummins Diesel Engine
- Coventry Petrol Engine
- Two Stage Reciprocating Compressor
- Aero Engine
- Multistage Reciprocating Compressor Test Rig
- Computerised test rig for vapour compression cycle.
- Computerized AC trainer
- Mascool Desert Room Cooler
- Accaire Room Air Conditioner

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- Frigidaire Refrigerator
- Computerized Air – Conditioning Test Rig
- Ice Plant Trainer

2. Heat Transfer Lab.

Major Equipments

- Combustion Laboratory Unit
- Heat Pipe Demonstration
- Dropwise & Filmwise Condensation App.
- Boiling Heat Transfer Unit
- Fluidized Bed Heat Transfer Unit
- Rod Fins Apparatus
- Circumferential Fin Apparatus
- Thermal Conductivity Liquid Apparatus
- Thermal Conductivity Sand Apparatus
- Emissivity Apparatus
- Analogue Field Apparatus
- Reaction of combustion Apparatus
- Thermal Conductivity of Rod (Series Method)
- Thermal Conductivity Of Rod (Parallel)
- Forced Convection Apparatus.

3. CAD and simulation Lab.

Major Equipments:

- Solid Works – 2009
- Unigraphics NX-3
- MathCAD R14
- MIAS 4.0
- AutoDesk Inventor 5.0
- SYSTAT

4. Kinematics and Dynamics of Machines Lab.

Major Equipments:

- Vibration meter
- Proving ring
- Techno lab channel
- Strain measuring bridge
- Portable pot meter
- Audio oec
- CRO
- Torque transducer
- Load transducer
- Pressure transducer
- Sound level meter

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- Vibration generator
- Solid state power amplifier
- Hand tachometer
- Magnetic sensor
- Photo pickup
- Vibration analyzer
- Base plate or vibration
- Balancing machine
- Balancing machine upto 100 kg
- Kosha vibration meter and
- balancing analyzer type mv – 410
- Computer based fast data acquisition system with printer hp 6l
- Facility for motion analysis of mechanism
- Constant voltage transformer
- Dynamic balancing

5. Fluid Mechanics Lab.

Major Equipments:

- Hydraulic Ram
- Bernoulli's Theorem Setup
- Venturimeter
- Notches
- Friction Through Pipes Setup
- Orifice Plate For Hydraulic Coefficient
- Adjustable Channel

6. Hydraulic Machines Lab.

Major Equipments:

- Pelton Turbine
- Francis Turbine
- Turbo Impulse Turbine
- Kaplan Turbine
- Centrifugal Pump Testing Setup
- Reciprocating Pump
- Open Circuit Wind Tunnel
- Adjustable Tilting Flume
- Centrifugal Blower Testing Rig

7. Heat Treatment & Metallurgical Lab.

Major Equipments:

- Specimen Cutting Machine
- Muffle Furnace
- Double Disc Polishing Machine – 2 No.s
- Specimen Mounting Machine

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- Belt Sanding Machine
- Jommy end Quenching Machine
- Metallurgical Microscope – 2 No.s
- Salt bath Furnace

8. Metrology Lab.

Major Equipments:

- Universal Horizontal Metroscope
- Roundness Tester
- Height Micrometer
- Auto Collimator
- Salt Test Equipment
- Shadow Master
- Tool Maker Microscope
- Dead Weight Pressure Gauge Tester
- Mechanical Comparator

9. Machine Tool & Machining Science Lab

Major Equipments:

- Radial Drilling Machine
- Tool & cutter Grinding Machine
- Surface Grinder
- Pantograph
- Lathe Machine
- Lathe Machine
- Capstan Lathe
- Lathe tool dynamometer
- Drill tool dynamometer

10. Metal Forming Lab

Major Equipments:

- Metal Spinning Machine
- Cuping Test Machine
- Sheet Rolling Machine
- Wire Pointing Machine
- Descaling Machine
- Wire drawing Machine
- Bar Drawing Machine
- Bar Straightening Machine
- Injection Moulding Machine
- Hydraulic Press
- Universal Testing Machine

11. Industrial Automation and Robotics Lab

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Major Equipments:

- Computerized Pneumatic Trainer
- Computerized LSM Trainer
- Sensor Technology Kit
- Five Axis Robotic Arm
- Electro-Hydraulic Trainer
- Mechatronic Training Kit
- CNC Trainer
- CNC Milling Trainer
- LSM Controller

12. Industrial Engineering Lab

Major Equipments:

- Tread Mill
- ECG unit
- Television with set top box
- TMT machine
- Spirometer

13. CGL Lab

Major Equipments:

- 30 Computers

14. Manufacturing Research Lab

Major Equipments:

- U-Print(Fused Deposition Modeling)
- Vickers Hardness Tester
- Microscope
- U.T.M.
- Melt Flow Tester
- Hot Oven
- Wire Extruder
- Smoothing Station
- Barrel Finishing Station
- Ultrasonic Tank
- Moulding Machine
- Pin on Disk
- Diamond Cutter
- Air jet Erosion Test Rig