ONLY FOR 200 LEVEL ENGINEERING STUDENTS (General Engineering Courses & Workshop Practices)

Mechanical Engineering - List of Laboratories & Equipment

Common Facilities

Laboratories/Workshops

The Basic Labs/Workshops for 200 level Engineering students:

1. General Workshop, Drawing and Design Studio.
2. Strength of Materials.
3. Thermodynamics Fluid Mechanics.

General Workshop Equipment

Fitting & Machining Section

1. Tool boxes containing hand tools such as screw drivers, wrenches, hammers, hacksaws, files, centre punch, chisel, scrapers, etc. ---------- **(Available already)**
2. Lathe machines. ---------- **(Available already)**
3. Drilling machines. ----------**(Available already)**
4. Vernier Calipers and Micrometer Screw Gauges. ---------- **(Available already)**
5. Work benches with vices for metal work.
6. Sheet metal folding machine.
7. Milling machines.

8. Dovetailing machine.

9. Grinding machines.

Welding & Fabrication Section

1. Safety goggles, eye and ear protectors. -------- **(Available already)**

2. Pop riveting machine. …… **(Available already)**

3. Spot welding machines. ---------- **(Available already)**

4. Arc welding machines and accessories.

5. Gas welding facilities.

6. Rolling machine, etc.

Carpentry & Woodwork Section (Wood processing machines and equipment)

1. Jack planes, smooth planes. ------**(Available already)**

2. Other hand tools such as tri square, claw hammer, pincer, marking gauge, mortise gauge, spirit level, flat chisel, wood rasp, round chisel, wood mallet, spoke shave, screw drivers, tape rule, scraper. --------**(Available already)**

3. Band saw, radial arm saw and circular saw.

4. Surfacing machine.

5. Mortise machine.

6. Thicknessing/Planing machine.

7. Wood Lathe machine.

8. Portable sander machine.

9. Jig saw, rip saw, cross-cut saw, panel saw, tennon saw, compass saw.

10. Drilling machine.

11. Chest drill.

12. Spraying machine.

SCHOOL OF ENGINEERING
We Design, We Build

13. Oil stone.

14. Wood workbenches with vices.

15. G clamp, F clamp, Sash clamp.

Drawing and Design Studio

1. Drawing tables and chairs. **(Available already)**

2. Drawing boards, T-squares and instruments. **(Available already)**

3. Automatic drafting machine.

4. Drafting gadgets, stencils, etc.

5. Automatic stencil cutter.

6. Computer graphics and design hall with necessary design software (e.g. Fusion 360 (AutoCAD) software, SolidWorks, Solid Edge or equivalent.

7. 3-D printer.

Strength of Materials Laboratory

1. Elastic behaviour of thin- and thick-walled pressure vessels.

2. Helical springs.

3. Share the Rest with CIVIL ENGINEERING Laboratories.

Thermodynamics Laboratory

1. Temperature measurement apparatus.

2. Power measurement apparatus (compressor, dynamometer etc).

3. Pressure measurement apparatus.

4. Equilibrium of mixtures of air and steam, quality of wet steam.

5. Calorific values of fuels.

6. Analysis of products of combustion.

AUN SCHOOL OF ENGINEERING
We Design, We Build

7. Gas and steam turbine apparatus.

8. Thermal conductivity apparatus.

9. Apparatus for the determination of radiative properties of materials.

10. Vapour power cycles.

11. Share the rest with Chemical ENGINEERING Laboratories.

Fluid Mechanics Laboratory (Share with Chemical ENGINEERING Laboratories)

1. Manometry.

2. Hydrostatic forces on plane and curved surfaces.

3. Forced vortex apparatus.

4. Stability of floating bodies.

5. Meter calibration and flow test set up.

6. Hydraulic test benches.

7. Nozzle and orifice flow apparatus.

8. Heat losses in pipe fittings.

9. Flow visualisation apparatus.

10. Flow of fluid round bodies.

11. Hydraulic power circuitry and measurement units.

12. Reciprocating pump system.

13. Centrifugal pump system.

14. Pelton wheel.

15. Resistance to motion of air through banks of finned and unfinned tubes.

16. Calibration and performance of flow measurement devices.

17. Subsonic wind tunnel and accessories.

18. Supersonic flow apparatus.

19. Share the rest with Chemical ENGINEERING Laboratories.

SCHOOL OF ENGINEERING
We Design, We Build