Government College of Engineering and Technology, Jammu
Mechanical Engineering Department

Laboratories Staff:

Sr. No.	*Name of Staff Member*	*Designation*	*Staff In-Charge Lab*
1.	*Mr. Vijay Kumar*	*Lab. Supervisor*	*Strength of Material* *Theory of Machine* *Material Science & Metallurgy*
2.	*Mr. Rajinder Rajwal*	*Lab. Supervisor*	*Engineering Mechanics* *Mechatronics*
3.	*Mr. Gourav Khajuria*	*Senior Lab. Technician*	*CAM/CAM* *CNC Centre* *Fluid Mechanics and Machinery* *Engineering Metrology*
4.	*Mr. Sumit Kumar*	*Senior Lab. Technician*	*Heat Transfer* *Thermal Engineering* *Automotive* *Industrial Engineering* *3 D Printing*

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Name of the Laboratories/Class Room:

S. No	Name of the Laboratory/Class Room	Name of Equipments/Machines
1.	**Strength of Materials Lab**	1. Computerized Universal Testing Machine (UTM), 2. Impact Testing Machine 3. Charpy & Izod test rig, 4. Brinell Hardness Tester, 5. Rockwell Hardness Tester, 6. Vickers Hardness Tester (with optical microscope), 7. Horizontal Tensile Testing m/c.
2.	**Fluid Machinery Lab**	1. Kaplan Turbine Test Rig, 2. Pelton Wheel Turbine test rig. 3. Francis Turbine Test Rig., 4. Centrifugal Pump (Test Rig.), 5. Centrifugal Pump Series & Parallel. 6. Impact of Jet Apparatus 7. Reciprocating Pump Test Rig
3.	**Engineering Mechanics Lab**	1. Jib crane apparatus 2. Single Purchase Winch Crab, 3. Double Purchase Winch Crab, 4. Parallelogram Law of Forces, 5. Bending Moment Apparatus, 6. Worm & Worm wheel
4.	**CAD/CAM Lab**	1. Desktop Computers 2. Online UPS 3. Interactive Device Panel 4. Projector
5.	**CNC Centre**	1. CNC – VMC 300 Machine 2. Servo Stabilizer
6.	**Heat Transfer Lab**	1. Stefan-Boltzmann Apparatus, 2. Cooling Tower 3. J.P Pin fin set 4. Natural Convection Apparatus 5. Thermal conductivity of Metal Rod 6. Concentric Tube Heat Exchanger Test Set Up
7.	**Instrumentation and Measurement Control lab**	1. Strain Measurement Gauge 2. Load Measuring System. 3. Digital Multi-meter 4. Strain Measurement System. 5. Digital Tachometer. 6. Digital Stroboscope.

Government College of Engineering and Technology, Jammu
Mechanical Engineering Department

8.	**Theory of Machines lab**	**1.** Gyroscope Apparatus, **2.** Whirling of Shafts demonstrator, **3.** Brake Model Set-Up, **4.** Universal Governor, **5.** Two Speed Epicyclic gear Apparatus, **6.** Universal Vibrator Apparatus, **7.** Screw Jack. **8.** Four bar mechanism (oscillating, scotch yoke, crank and slotted link)
9.	**Mechatronics Lab.**	**1.** Arduino Kits
10.	**Automotive/ IC Lab**	**1.** Petrol engine Test Rig **2.** Diesel engine Test Rig **3.** Differential Gear Box **4.** Clutch setup **5.** Triple Twin Cylinder Diesel Engine test
11.	**Industrial Engineering Lab**	**1.** P chart, Gantt chart, String Diagram, SIMO chart, Control chart
12.	**Engineering Graphics / Machine Drawing Lab.**	**1.** Drawing Board
13.	**Thermal Engineering Lab**	**1.** Air compressor test rig **2.** Air conditioning test rig **3.** Refrigeration test rig **4.** Bomb Calorimeter **5.** Separating and Throttling Calorimeter
14.	**Material Science and Metallurgy Lab**	**1.** Muffle Furnace. **2.** Stress Relieving oven. **3.** Metallurgical Microscope **4.** Ultrasonic Flaw Detector M/C **5.** Inverted Microscope
15.	**3D Printing Lab.**	**1.** FDM (Fused deposition Modeling)Machine **2.** SLA (Stereo lithography) Machine
16.	**Smart Class Room**	**1.** Interactive Panel Device

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APPLIED THERMODYNAMICS LAB.:

Applied Thermodynamics *deals with energy and temperature to reversibility and entropy, the first and second laws of thermodynamics, and the properties of ideal gases.*

Government College of Engineering and Technology, Jammu
Mechanical Engineering Department

CNC Centre:

*CNC – A **CNC machine** is a motorized maneuverable tool and often a motorized maneuverable platform, which are both controlled by a computer, according to specific input instructions.*

Government College of Engineering and Technology, Jammu
Mechanical Engineering Department

STRENGTH OF MATERIALS LAB.:

The strength of materials *considers the relationship between the* ***external loads*** *applied to a material and the resulting* ***deformation*** *or change in material dimensions.*

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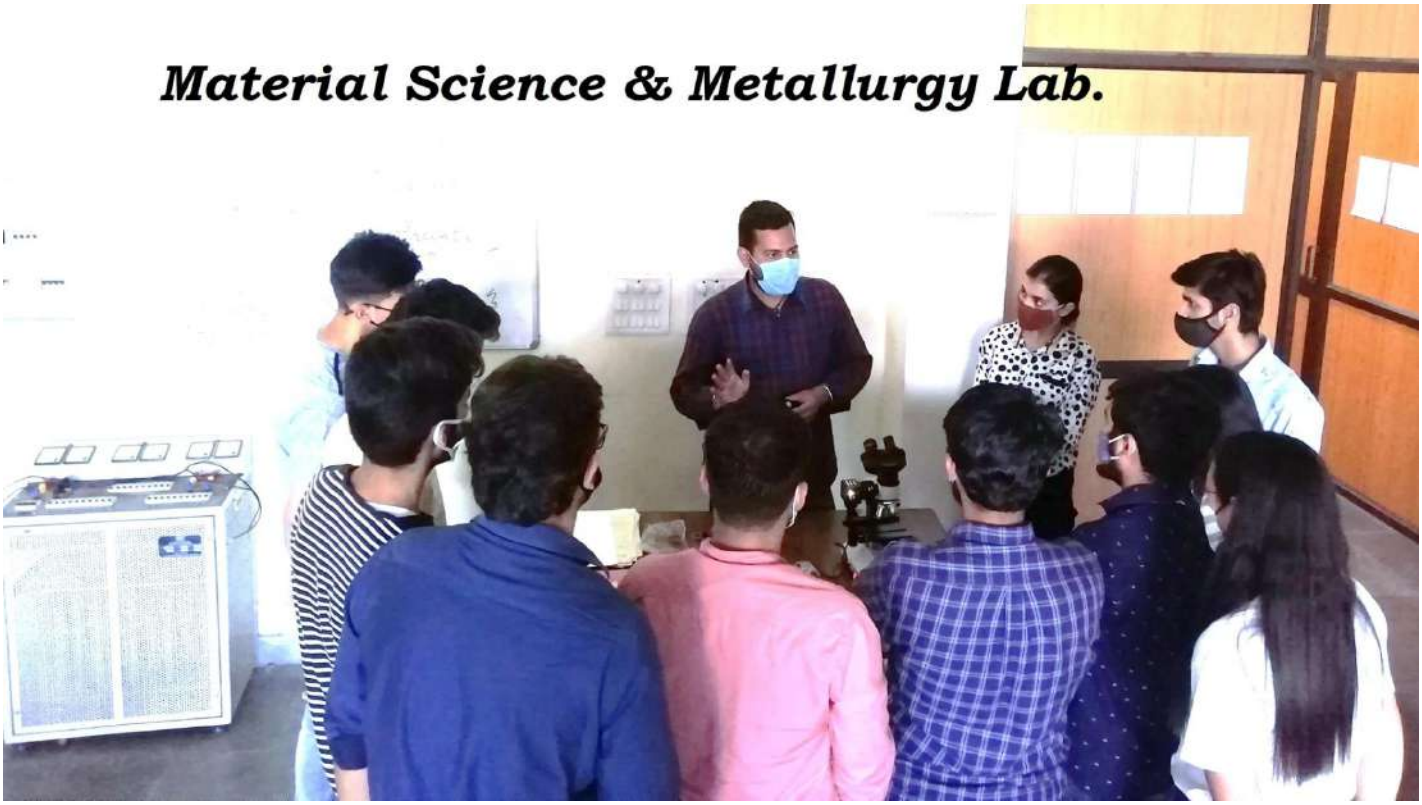
Material Science & Metallurgy Lab.:

Material Science and Metallurgical Engineering is the study of materials, their processing and their transformation which including their mechanical behaviour, physical metallurgy, thermodynamics, kinetics, etc.



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3 D Printing Lab.:

3D printing or additive manufacturing is the construction of a three-dimensional (3D) object from a CAD model or a digital 3D model. It can be done in a variety of processes/techniques in which material is deposited, joined or solidified under computer control, with material being added together (such as plastics, liquids or powder grains being fused), typically layer by layer.

Photographs of students (Scheme A – Group 1) of 8th semester – Batch 2018

3 D Printing Machine – FDM (Fused Deposition Modeling)

Photographs of students (Scheme A – Group 2) of 8th semester – Batch 2018

3 D Printing Machine – SLA (Stereolithography)

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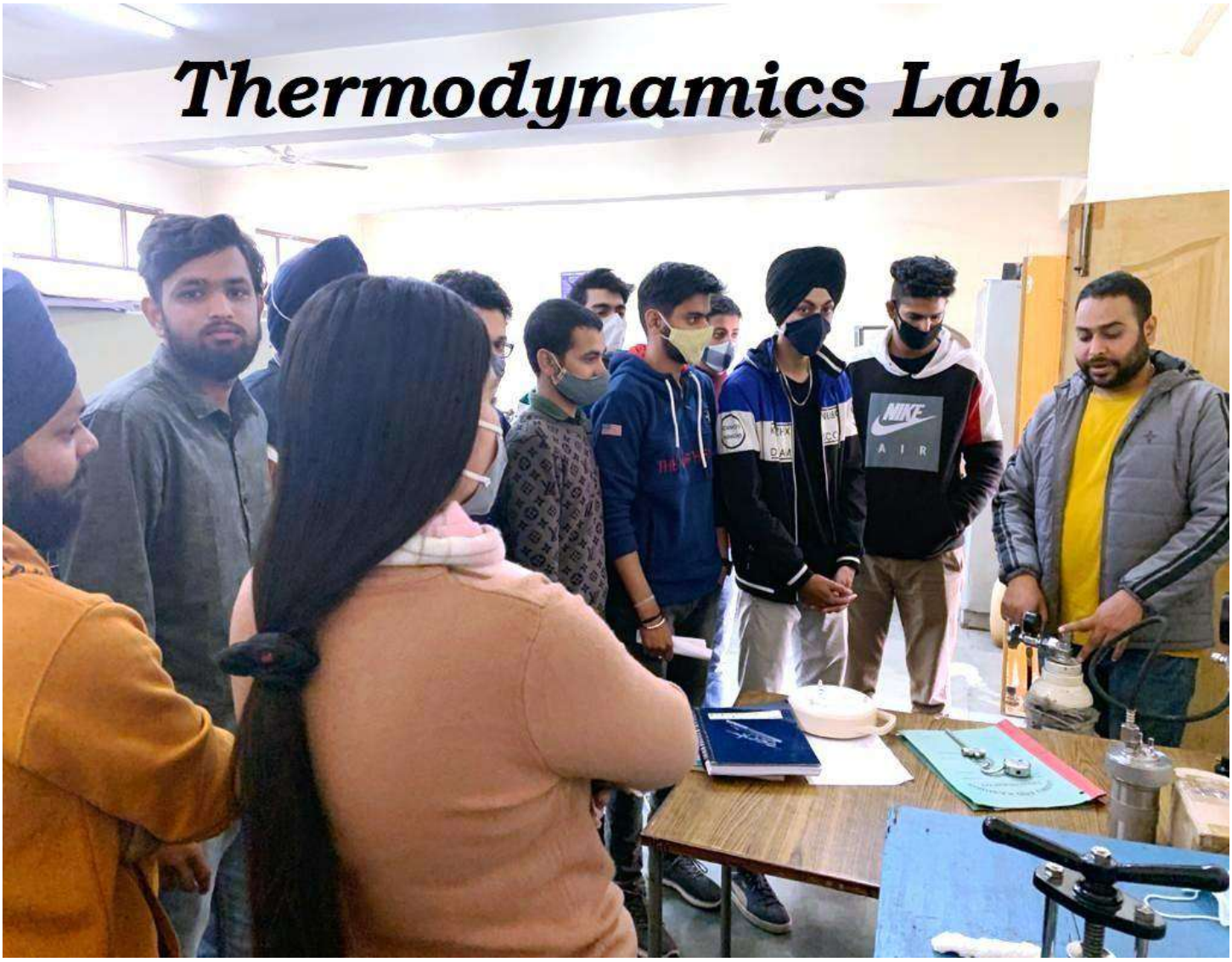
Thermal Engineering Lab.:

Thermal engineering is a specialized sub-discipline of mechanical engineering that deals with the movement of heat energy and transfer. The energy can be transferred between two mediums or transformed into other forms of energy.



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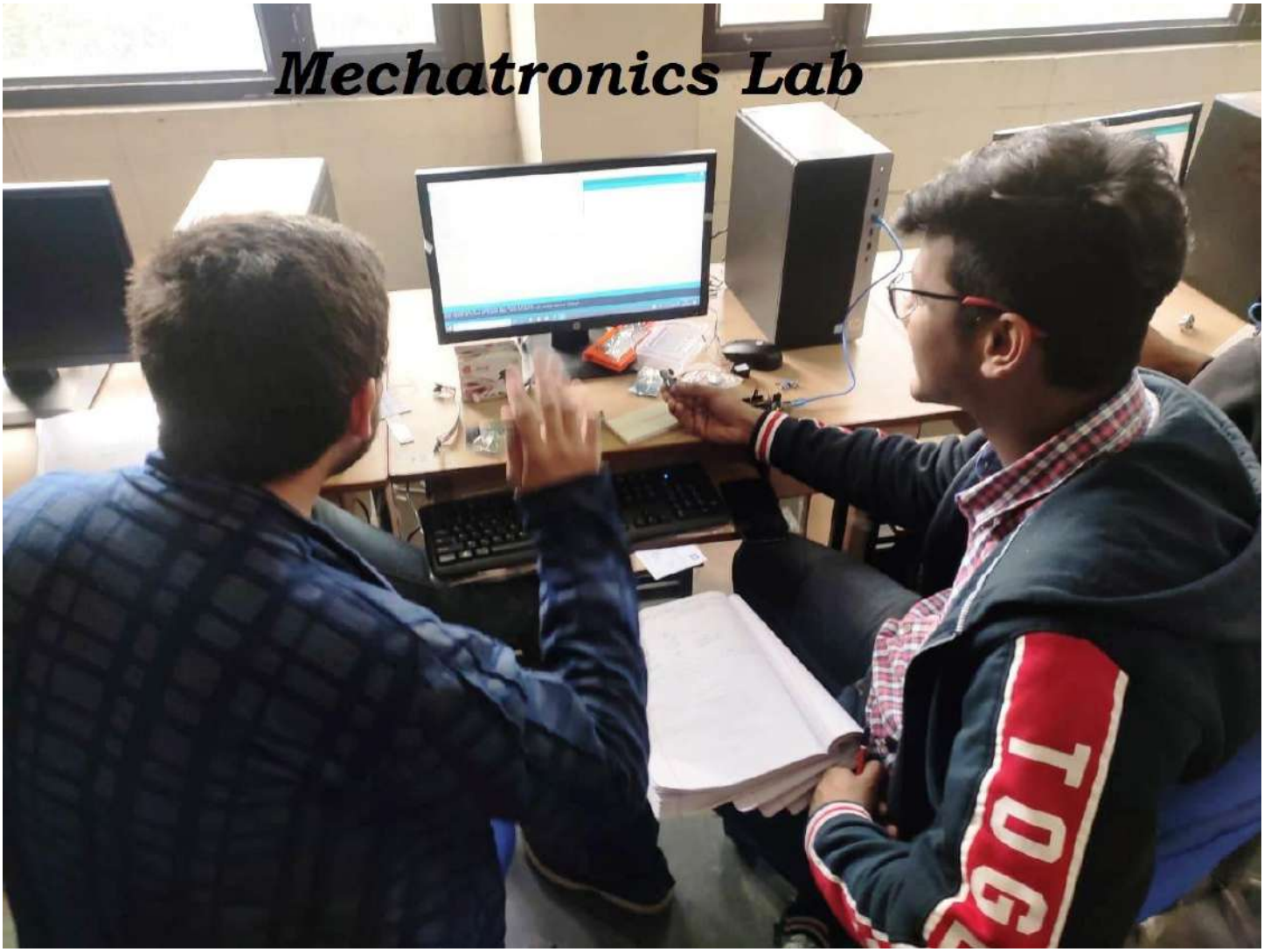
Mechatronics Lab.:

Mechatronics is a multidisciplinary field that refers to the skill sets needed in the contemporary, advanced automated manufacturing industry. At the intersection of mechanics, electronics, and computing, mechatronics specialists create simpler, smarter systems.



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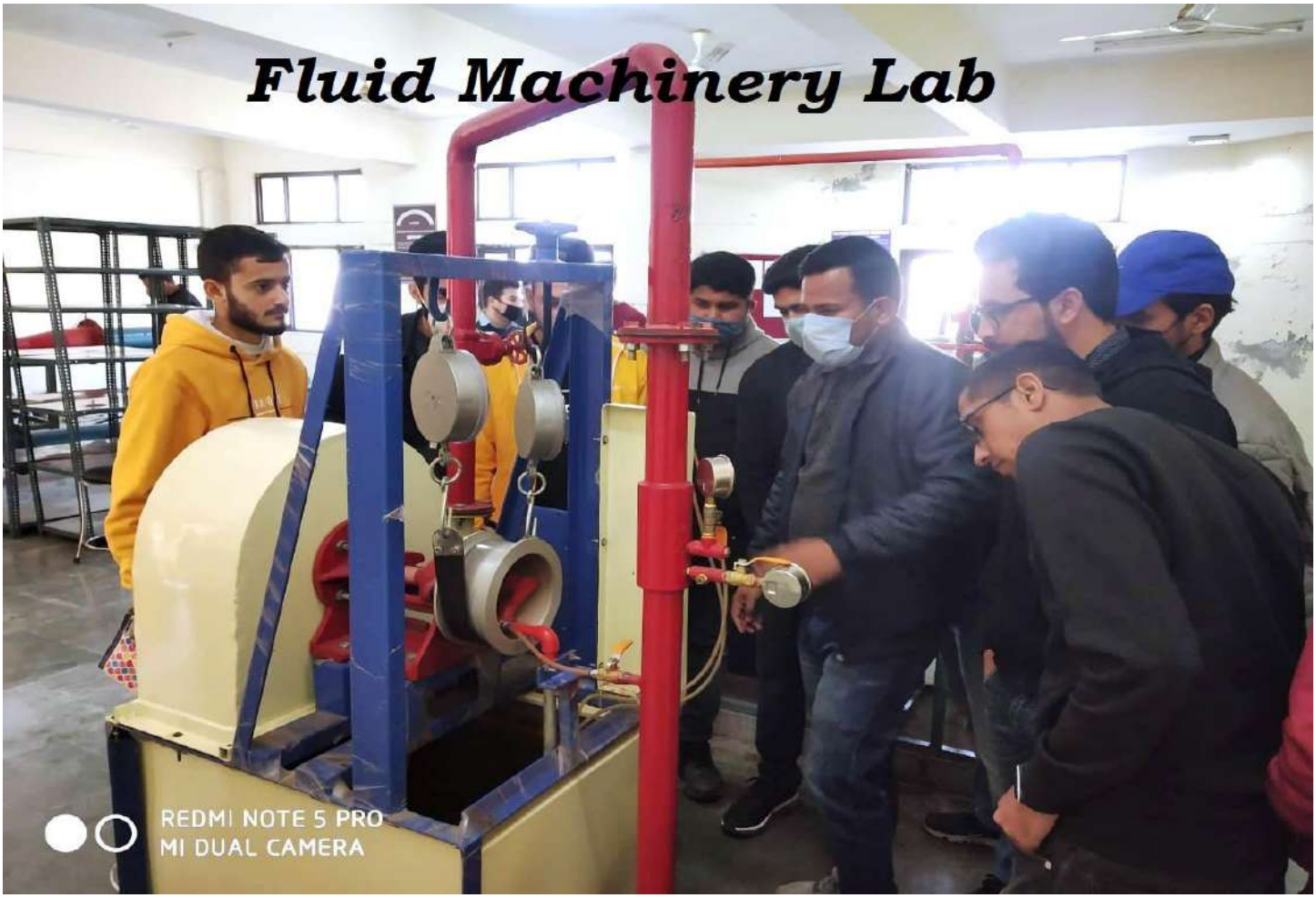
Mechanical Engineering Department

Fluid Machinery Lab.:

Fluid machines are devices that convert the energy of the fluid that passes through them or transfer energy to the fluid.



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Automotive Lab.:

Automotive engineering *is a branch of vehicle engineering, incorporating elements of mechanical, electrical, electronic, software, and safety engineering as applied to the design, manufacture and operation of motorcycles, automobiles, and trucks and their respective engineering subsystems.*

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CAD/CAM Lab.:

CAD stands for Computer-Aided Design and CAM stands for Computer-Aided Manufacturing, both of which are used to make things. CAD/CAM software is used to design and manufacture prototypes, finished products, and production runs of products.