



School of Automotive and Mechanical Engineering

Department of Mechanical Engineering

Laboratories and its available major equipment details

S.No	Programme	Name of the Laboratory	Area (m ²)	Total cost of the equipments in Laboratory
1.	B.Tech (Other than First year)	Heat Transfer Laboratory	167	5,29,691.00
2.		Dynamics and Vibration Laboratory	100	3,62,620.00
3.		Vibration lab (M.Tech)	100	
4.		Special Machine Laboratory	432	12,96,791.00
5.		Machine Drawing Practice Laboratory	66	63,05,952.00
6.		Simulation Lab	66	
7.		Analysis and Simulation lab (M.Tech)	66	
8.		IC Engine Laboratory	200	17,93,242.00
		Metrology Laboratory	100	12,71,179.00
9.		CAM Laboratory	140	33,11,039.00
10.	B.Tech (First year)	Workshop Laboratory	1000	3,48,910.00
11.	M.Tech	Industrial Safety Laboratory	66	5,65,223.50

Heat Transfer Laboratory



Major Equipments Available

- Lagged pipe apparatus
- Emissivity measurement apparatus
- Apparatus for measurement of heat transfer through pinfin
- Stefan Boltzmann apparatus
- Vapour compression refrigeration test rig.



Vapour Compression Test Rig



Stephon Bolzman Apparatus

Dynamics and Vibration Laboratory



Major Equipments Available

- Porter governor
- Whirling of shaft
- Balancing of rotating masses
- Motorized gyroscope
- Hartnell governor



Motorized Gyroscope



Universal Governor

Special Machine Laboratory



Major Equipments Available

- Shaping Machine – 26' Stroke Heavy Duty – Lark Brand
- Planing Machine – 4 Ft stroke length
- Milling Machine
- Surface Grinding Machine
- Tool and Cutter Grinder
- Cylindrical Grinding Machine
- Universal Milling Machine*
- Bench Grinder – 1 HP Rhythm Brand
- Pillar Drilling Machine



Universal Milling Machine



Planing Machine

Machine Drawing Practice Laboratory



Major software's used

- ANSYS 5.71
- Auto CAD 2012
- PRO/Engineer Wild fire 4.0 Educational university plus site license

IC Engine Laboratory



Major Equipments Available

- Multi cylinder engine eddy with current dynamometer test rig
- 2 stage reciprocating air compressor
- Single stage reciprocating air compressor
- Blower Test Rig (Constant Speed)



2 Stage Reciprocating Air Compressor



Constant Speed Air Blower

Metrology Laboratory



Major Equipments Available

- Coordinate measuring machine
- Tool Makers Microscope
- Floating Carriage Micrometer
- Metzer Profile projector



Coordinate Measuring Machine



Floating Carriage Micrometer

CAM Laboratory



Major Equipments Available

- CNC Lathe – Kirloskar Make
- CNC Lathe – Hytech CLT 100
- CNC Mill – MLT 250



CNC Lathe Machine



CNC Milling Machine

Workshop Laboratory



Major Equipments Available

- Fitting Bench vice
- Carpentry vice
- Power hacksaw

Industrial Safety Laboratory



Major Equipments Available

- Sound level meter
- Fire Extinguisher



Fire Extinguisher



Sound Level Meter

Research centre facility

Faculties and students are using the entire research laboratories for their research work as well as project work. These laboratories also provide consultancy services for outside scholars and researchers.

- Centre for composite materials and Materials processing Laboratory
- Machine dynamics and condition monitoring Laboratory
- CO2 Sequestration Lab
- Advanced machining laboratory
- Bio composite Laboratory
- Centre for surface Engineering Laboratory

Centre for Composite Materials and Materials Processing Laboratory

Facilities available:

- Compression Moulding Machine
- Computerized Universal testing Machine
- Stereo Zoom Trinocular Microscope
- Pin-on-disc wear tester
- Flammability Tester
- Digital Impact tester
- Fatigue tester
- Creep tester
- Corrosion analyzer
- Injection Moulding Machine
- Stir casting machine with melting furnace
- Centrifugal casting



Compression Moulding Machine



Injection Moulding Machine



Creep Indentation Tester

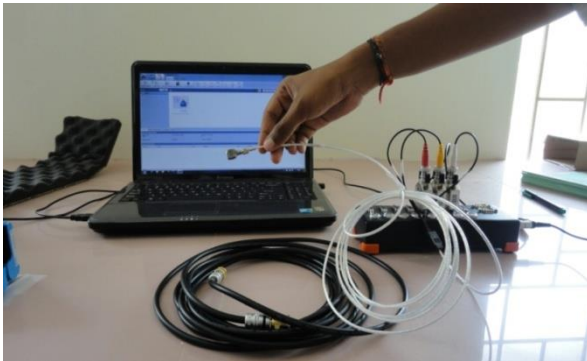


Stereo Zoom Trinocular Microscope

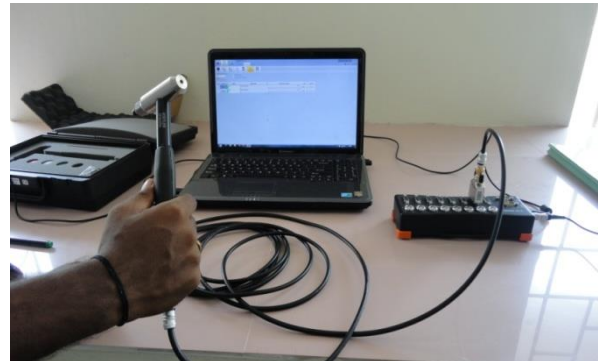
Machine dynamics and condition monitoring laboratory

Facilities available:

- Electrical units
- Sound and vibration measurement system
- Tri axial accelerometer
- Single axis accelerometer
- Impact force hammer
- Acoustic emission sensor
- Data acquisition board and software
- Digital tool tip temperature recorder
- Digital tool tip temperature recorder
- Electrical units
- Sound and vibration measurement system



Tri axial accelerometer



Impulse Force Hammer and accessories

CO₂ Sequestration Laboratory

Facilities available:

- Ultrasonic flow meter
- Velocity anemometer
- Infrared thermometer
- Data logger
- Flue gas analyzer
- Lux meter
- Taco meter/Stroboscope
- 3- Phase Clamp Power Analyser
- Pressure meter



Pressure Meter



3- Phase Clamp Power Analyser

Advanced machining laboratory

Facilities available:

- Electrical Discharge Machine
- Abrasive water jet machining
- Lathe tool dynamometer
- Drilling tool dynamometer
- Air jet erosion tester (TR 470)



Electrical Discharge Machining



Abrasive Water Jet Machining

Bio composite Laboratory

Facilities available:

- Magnetic Stirrer 2ML H Unibloc Top Loading Balance
- Ultrasonicator
- Cooling Centrifuge
- Double distillation unit
- Mechanical Stirrer
- Dynamic Mechanical Analyzer
- Thermal Analysis System (DMA7100 (220-240V))



Thermal Analysis System (DMA7100 (220-240V))



Mechanical Stirrer

Centre for surface Engineering Laboratory

Facilities available:

- Electro chemical corrosion analyzer
- High Temperature Tubular furnace
- Vacuum pump
- Disc Polishing machine



High Temperature Tubular furnace (Temp: up to 1200°C, Tolerance: $\pm 1^\circ\text{C}$)

Department Library

Department Library is intended for the faculty as well as students for immediate reference. It has a total number of 2495 Books in the areas of Mechanical, Automobile, Production, Aeronautical, Design, Thermal, Composite and Industrial Engineering etc. In addition to that competitive exams as well as GATE books are available in Department Library. The department Library also subscribes the international journals (SAGE, ISTE, SAE), project reports, magazines and regularly stocks its volumes.

