

DEPARTMENT OF MECHANICAL ENGINEERING	
<u>LIST OF LABS & EQUIPMENT</u>	
Name of Lab	Fluid Mechanics & Hydraulic Machines Lab
Area (sq.m)	993
Lab No. 1	a) Fluid Mechanics Lab
Facilities / Instruments	1. Circular Orifice setup
	2. Triangular Notch setup
	3. Rectangular Notch Setup
	4. Hydraulic Coefficient Apparatus
	5. Venturimeter Setup
	6. Setup for Pipe Friction
	7. Setup for Determining Metacentric height - 2 Nos.
	8. Orifice meter Setup
	9. Bernoulli's apparatus open type
	10. Bernoulli's apparatus closed type
	11. Apparatus for Experiment of Impact of Jet - (open type & closed type)
	12. Reynolds Apparatus
	13. Tilting Flume
	14. Micro Manometer
	15. Doppler flow meter
	16. Subsonic wind tunnel with accessories such as hot wire anemometer, probe transversing mechanism, pitot tube etc.
	17. Mouth piece apparatus
	18. Computerized Pelton Wheel testing
b) Hydraulic Machines Lab	
Facilities / Instruments	1. Kaplan Turbine - 3 Nos.
	2. Pelton Wheel - 2 Nos.
	3. Variable Speed Centrifugal Pump
	4. Francis Turbine test rig
	5. Pipe test rig
	6. Gear pump
	7. Hydraulic ram
	8. Disc friction apparatus
	9. Turbine pump
	10. Plunger pump
	11. Centrifugal Pump
	12. Drilling machine
	13. Grinding machine
	14. Cavitation apparatus
	15. Martin 3 throw pump
	16. Mono pump
c) Computational Fluid Dynamics Lab	
Facilities / Instruments	1. ANSYS multi physics software Academic Teaching Introductory version 13.5 user
	2. ANSYS Academic Research Version 13 - 1 user
	3. Open Foam open source computational tool
	4. Graphic work stations - 5

Facilities / Instruments	5. HP 2840 Workstation - 3 No.s
	6. 5 KVA UPS - 1 No.
	7. Optical Bench
	8. Laser light
	9. Lens
Name of Lab: Software Lab	
Area (sq.m)	184
Lab No. 2	
Facilities / Instruments	1. KVA UPS - 5 Nos
	2. Desktop computers - 67 Nos
	3. 10 KVA UPS - 2 No
	4. Laptops -52 Nos
	5. Fluent software
	6. Laser jet Printer - 1 No
	7. HP ML 350 G4 server
	8. Arena software - Academic Version
	9. Auto CAD 2019
	10. LCD projectors - 26 Nos
	11. IBM I LOG CPLEX Optimization Studio
	12. ANSYS Multiphysics 17.0
	13. IBM SPSS
	14. IBM SPSS AMOS
	15. Eviews
	16. Simio
Name of Lab	Computer Integrated Manufacturing Lab
Area (sq.m)	72
Lab No 3	
Facilities / Instruments	1. Trainer CNC Milling Machine with ATC
	2. Trainer CNC lathe with 8 station programmable turret
	3. Machine vision inspection system
	4. Six axis robot
	5. Trainer CNC Milling Machine
	6. UPS - 10 KVA
	7. Ni DAQ & Sensors
Name of Lab	CNC Production Laboratory
Area (sq.m)	72
Lab No 4	
Facilities / Instruments	1. CNC Milling Machine with ATC
	4. Servo stabilizer - 25 KVA
	5. Servo stabilizer - 15 KVA
	6. Compressor - 3 HP, 300 LPM
Name of Lab	Industrial Engineering Lab
Area (sq.m)	250
Lab No 5	a) WORK SYSTEM DESIGN LAB
	1. Flicker Fusion Tester Fusion frequency- 5 to 70Hz, Frequency in Ascending and Descending mode, LCD Display for frequency counts

Facilities / Instruments	2.Audio Visual Reaction Timer Modes of Operation- light and sound., LCD display for counting of Reaction Time
	3.Dexterity Test Board Set Test facility to test hand dexterity with tweezers and pins
	4. Kinect Sensor Bar (for windows SDK 2.0) - an RGB colour video camera, Depth sensor, and a multi-array microphone
	5. Sound Level Meter Measuring range 30 – 130 dbs with LCD screen for Digital display
	6. Anthropometric Set Contain large and small anthropometer, Skinfold caliper(0-100 mm scale), Chest Depth Caliper, 60 inch Anthropometric Tape, Extendable Goniometer, Finger Circumference Gauge, Flexible measuring tape and height gauge.
	7. Motion economy workplace Setup with bench vices on a workbench and fixtures
	8. Digital Hand Evaluation Kit Contains Digital hand grip, Dynamometer, Digital Pinch Dynamometer and Finger Goniometer.
	9. Key Hole Test Board Set Hinged box board with key-holes to test visual-motor coordination.
	10. Light Meter Measuring range up to 4,00,000Lux and color correction filter, RS-232/USB interface
	11. Heart Rate Monitor Consist of Training Computer (wrist unit), Chest Belt with transmitter, Stride Sensor, Data transfer facility(USB/Bluetooth) and rechargeable battery.
	12. Motorised Treadmill 3.0 HP continuous duty DC motor, 50 x 18 inches Running Surface, 0.8 - 16.8 kmph speed, upto 130 kg user weight, LCD/LED display with USB facility.
	b) Quality Control Lab & NDT Lab
	1. Implements for the study and construction of control charts and acceptance sampling experiments
	2. Ultrasonic Flaw Detector-1
	3. Magnetic Yoke -1
	4. Portable Magnetic Particle Testing Machine-1
	5. Bench Type Magnetic Particle Testing Machine-1
	6. Dye Penetrant Kit-2
	7. NDT TEST SPECIMEN, ACCESSORIES & GUAGES
	8. Test specimen set for Ultrasonic Testing with flaws having dimension (4 Plates of 0.500"T x 4"W x 8"+ 4 Plates of 0.250"T x 4"W x 8" + 1 Pipe 4" Dia. x 0.337" wall x 8" + 1 Tee 0.250"T x 4"W x 4"H x 8"L) - 1 set

Facilities / Instruments	ACCESSORIES	
	a. AWS- DC Block (IIW V-1 reference block)- 1 No	
	b. AWS Resolution block- 1 No	
	c. Field Indicator - 1 No	
	d. Pie gauge- 1 No	
	e. Burmah Castrol Strips -1 set	
	f. Hand held gauss meter 10-0-10 or 20-0-20- 1 No	
	g. UV Lamp Set	
	GAUGES	
	a. Digital Micrometer- LCD screw guage (0-25mm) Make Mitutoyo- 5 No.s	
	b. Digital Vernier Calipers (150 mm) Make Mitutoyo -7 No.s	
	c. Ketos ring for Bench Type Machine- 1 No	
	d. Industrial Radiographic Film Viewer SS 207 LED Body : Stainless Steel-1	
Name of Lab	Engineering Workshop	
Area (in Sq.m)	1925	
Lab No. 7	a) Smithy	
Facilities/ Instruments	1. Smithy furnace - 4 Nos.	
	2. Anvil - 10 Nos.	
	3. Electric blower	
	b) Welding	
Facilities/ Instruments	1. Arc welding machine	
	2. Gas welding machine	
	3. Submerged arc welding machine	
	4. TIG welding machine - 2 Nos.	
	5. MIG welding machine - 2 Nos.	
	c) Carpentry	
Facilities/ Instruments	1. Circular saw	
	2. Bench grinder machine	
	3. Band saw	
	d) Fitting & Sheet Metal	
Facilities/ Instruments	1. Drilling machine - 1 Nos.	
	2. Shearing machine	
	3. Bench grinder machine	
	4. Power press	
	e) Foundry	
Facilities/ Instruments	5.Bottom pouring type Stir casting Furnace	
Name of Lab	Machine shop	
Area (in Sq.m)	875	
Lab No. 8		
Facilities/ Instruments	1. Centre lathe - 13 Nos.	
	2. Precision Centre lathe - 5 Nos.	
	3. Pillar drilling machine	
	4. Radial drilling machine	
	5. Surface grinding machine	
	6. Vertical milling machine	
	7. Universal milling machine - 3 Nos.	
	8. Shaping machine - 13 Nos.	
	9. Planning machine	

	10. Slotting machine - 1 Nos.
	11. Power hack saw - 1 Nos.
	12. Surface grinding machine(Hydraulic)
Name of Lab	Heat Engines Lab
Area (in Sq. m)	966
Lab No.9	a) IC Engine Lab
Facilities / Instruments	1. Single cylinder 4 stroke petrol engine
	2. Ruston marine engine (Horizontal)
	3. Cooper diesel engine
	4. Marshal diesel engine
	5. Pollution testing equipment
	6. Atul diesel engine
	7. Data acquisition system
	8. Flash and fire point experimental setup
	9. Redwood visco meter
	10. Bomb calorie meter
	11. CRDI Test Rig
	12. 4 Cylinder 4 Stroke Petrol Engine Test Rig
	13. Smokemeter
	14. Five gas analyzer
	15. Pressure Gauge Comparator
	b) Thermal Engineering Lab
Facilities/ Instruments	1. Natural convection apparatus
	2. Emissivity apparatus
	3. Heat transfer through composite wall
	4. Test rig on Centrifugal blower
	5. Forced convection apparatus
	6. Lagged pipe apparatus
	7. Parallel and counter flow heat exchanger
	8. Refrigeration and Air Conditioning Test Rig
	9. Critical heat flux apparatus
	10. Heat transfer through pin - FIN
	11. Heatpump Apparatus
	12. Stefan- Boltzmann apparatus
	13. Insulating powder apparatus
	14. Reciprocating air compressor - 2 Nos.
	15. Rotary air compressor
	16. Vacuum Pump