



NARSIMHA REDDY ENGINEERING COLLEGE

(Permanently affiliated to JNTU Hyderabad- Approved by AICTE, New Delhi)

Maisammaguda Secunderabad, Hyderabad – 500100



Department of Mechanical Engineering

Details of Class Rooms and Laboratories

S.No.	Content	No. Available
1	No. of Class rooms	6
2	No. of Tutorial rooms	1
3	No. of Computer labs	1
4	No. of Current labs	14
5	No. of Physical labs	15

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S.NO	<u>NAME OF THE LAB</u>
1	Engineering Workshop Laboratory
2	Fuels and lubricants lab
3	Production and Technology lab
4	Mechanics of solids lab
5	Metallurgy and Material science lab
6	Fluid Mechanics and Hydraulic Machinery lab
7	Kinematics and Dynamics lab
8	Heat Transfer lab
9	Thermal Engineering lab
10	Engineering Metrology lab
11	Manufacturing Technology lab
12	Instrumentation and control system lab
13	CAD/CAM lab
14	Analysis and Simulation lab
15	Computational Methods lab

Engineering Workshop Laboratory

S. No.	Name of the Equipment	Quantity Available
1.	Fitting Vice	10
2.	Carpentry vice (fitted in work bench)	12
3.	Standard wood working tools	06
4.	Arc welding transformer with cables and holders	01
5.	Grinding Machine	1 No.
6.	Welding accessories like welding shield, chipping hammer, wire brush, etc.	3 Sets
7.	Wood working lathe Machine	1 No.
8.	Hearth furnace, anvil and smithy tools	1 Sets
9.	Assorted Electrical components for making circuits	4 Sets.
10.	Assorted components for plumbing consisting of metallic pipes, plastic pipes, flexible pipes, couplings, unions, elbows, plugs and other fittings.	1 Sets
11.	Bench Vice for sheet metal work(fitted in work bench)	10 Sets
12.	Sheet metal working tools	6 Sets
13.	Power Hacksaw Machine	1 No.
14.	Drilling Machine	2 Nos.

Fuels and Lubricants Laboratory

S.No.	Name of the Equipment	Quantity available
1	Abels Apparatus	1 No.
2	Pensky Martens Apparatus	1 No.
3	Carbon residue test	1 No.
4	Saybolt Viscometer	1 No.
5	Redwood Viscometer	1 No.
6	Engler Viscometer	1 No.
7	Junkers Gas Calorimeter	1 No.
8	Bomb Calorimeter	1 No.
9	Drop point and Penetration Apparatus	1 No.
10	ASTM Distillation Test Apparatus	1 No.
11	Cloud and Pour point Apparatus	1 No.

Production Technology Laboratory

S.No.	Name of the Equipment	Quantity Available
1	Moulding Table	3 Nos.
2	Moulding boxes, tools and patterns	4 Sets
3	Spot welding machine	1 No.
4	Arc welding machine	1 No.

5	TIG welding machine	1 No.
6	Plasma welding machine	1 No.
7	Gas welding machine	1 No.
8	Injection moulding machine	1 No.
9	Blow moulding machine	1 No.
10	Hydraulic press	1 No.
11	Fly press	1 No.
12	Wood turning lathe	1 No.
13	Induction furnace	1 No.
14	Sand strength machine	1 No.
14	Permeability tester	1 No.

Mechanics of solids Laboratory

S. No.	Name of the Equipment	Quantity Available
1	Universal Testing Machine (100 Ton Capacity) with double Sheer attachments	1 No.
2	Torsion Testing Machine (60 Nm Capacity)	1 No.
3	Impact Testing Machine (300 J Capacity)	1 No.
4	Brinell Hardness Testing Machine	1 No.
5	Rockwell Hardness Testing Machine	1 No.
6	Spring Testing Machine for tensile and Compressive loads (2500N)	1No.
7	Deflection of beam apparatus	1 No.

Fluid Mechanics and Hydraulic Machines Laboratory

S. No.	Name of the Equipment	Quantity Available
1	Venturi meter setup	1 No.
2	Friction loss in Pipe setup	1 No.
3	Centrifugal pump setup	1 No.
4	Reciprocating pump setup	1 No.
5	Impact of jets	1 No.
6	Kaplan Turbine	1No.
7	Francis Turbine	1 No.
8	Pelton Wheel	1 No.

9	Orifice meter	1 No.
10	Multi Stage Centrifugal Pump	1 No.
11	Bernoulli's Theorems setup	1 No.
12	Loss of head due to sudden contraction and sudden expansion setup	1 No.

Kinematics and Dynamics Laboratory

S.No.	Name of the Equipment	Quantity available
1	Determination of moment of inertia of the connecting rod.	1 No.
2	Motorized Gyroscope apparatus setup	1 No.
3	Governors (Watt, Porter, Proell, Hartnell) to study performance characteristic	1 Each
4	Cam & Follower setup for determination of motion curves & Jump speed	1 No.
5	Spring Mass System	1 No.
6	Torsion Vibration setup- Single rotor and two rotor system	1 Each
7	Vibration table setup for determination of transmissibility ratio	1 No.
8	Whirling speed of shaft apparatus	1 No.
9	Transverse vibration - Free beam set up for determination of natural frequency by free and forced vibration test	1 Each
10	Multi degree freedom setup	1 No.

Heat Transfer Laboratory

S.No.	Name of the Equipment	Quantity available
1	Composite Walls apparatus with data acquisition	1 No.
2	Lagged pipe apparatus	1 No.
3	Natural convection – vertical cylinder apparatus	1 No.
4	Pin – Fin apparatus	1 No.
5	Stefan – Boltzmann apparatus	1 No.
6	Emissivity measurement apparatus with data acquisition	1 No.
7	Parallel . counter flow heat exchanger apparatus with data acquisition	1 No.
8	Data acquisition system for Heat transfer through fins	1 No.
9	Shell and tube heat exchanger	1 No.

CAD.CAM Laboratory

S. No.	Name of the Equipment	Quantity available
1	SYSTEMS Computer(Intel Core 2 Duo @ 2.40GHz, 4GB RAM, 5000GB HDD, GRAPHIC CARD 2GB)	30 Nos.

	Optical Mouse,USBKeyboard, 18.5” Wide Screen LCDMonitor)	
2	CATIA SOFTWARE V5-6 R2018	30 Nos.
3	ANSYS 17.0 SOFTWARE	25 Nos.
4	AUTO CAD 2018(AICTE FREE VERSION)	30 Nos.
5	CNC TRAINER LATHE CLT-100 WITH PC	1 No.
6	VERNIER CALIPERS	1 No.
7	Printer-BROTHER.Dot Matrix	1 No.
8	UPS	1 No.

Analysis and Simulation Laboratory

S.No.	Name of the Equipment	Quantity available
1	SYSTEMS Computer(Intel Core 2 Duo @ 2.40GHZ, 4GB RAM, 5000GB HDD, GRAPHIC CARD 2GB Optical Mouse,USBKeyboard,18.5” Wide Screen LCDMonitor)	30 Nos.
2	ANSYS 17.0 SOFTWARE	30 Nos.
3	Printer-BROTHER.Dot Matrix	1 No.
4	CFD 19 VERSION	25 Nos.

Engineering Metrology Laboratory

S.No.	Name of the Equipment	Quantity Available
1.	Micrometer	3 No.
2.	Vernier calipers	3 No.
3.	Bore Dial Gauge	1 No.
4.	Tools Makers Microscope	1 No.
5.	Internal Micrometer	1 No.
6.	Vernier height gauge	1 No.
7.	Surface plate	1 No.
8.	Bevel protractor	1 No.
9.	Sinebar	1 No.
10.	Slip gauge box	1 No.
11.	Gear tooth vernier	1 No.
12.	Tooth pitch gauge	1 No.
13.	Filler gauge	1 No.
14.	Optical flat	1 No.
15.	Spirit level	02
16.	Magnifying glass	02
17.	Monochromatic light rays source	01
18.	2 or 3 wire method apparatus	01
19.	Dial test indicator with magnetic stand	01
20.	Angle plate	01

Thermal Engineering Laboratory

S. No.	Name of the Equipment	Quantity Available
1	I.C. Engines Valve . Port Timing Diagrams	1 No.
2	I.C. Engines Performance Test for 4 Stroke SI engines	1 No.
3	I.C. Engines Performance Test for 2 Stroke SI engines	1 No.
4	I.C. Engines Morse, Retardation, Motoring Tests	1 No.
5	I.C. Engine Heat Balance – CI.SI Engines	1 No.
6	I.C. Engines Economical speed Test on a SI engine	1 No.
7	I.C. Engines effect of A.F Ratio in a SI engine	1 No.
8	Performance Test on Variable Compression Ratio Engine	1 No.
9	IC engine Performance Test on a 4S CI Engine at constant speed	1 No.
10	Volumetric efficiency of Air – Compressor Unit	1 No.
11	Dis-assembly . Assembly of Engines	1 No.
12	Study of Boilers	1 No.

Instrumentation and control systems Laboratory

S. No.	Name of the Equipment	Quantity Available
1	Pressure Measurement	1 No.
2	Force Measurement	1 No.
3	Torque Measurement	1 No.
4	Temperature Measurement	1 No.
5	Displacement Measurement	1 No.
6	Vibration Measurement	1 No.
7	Mcleod gauge	1 No.
8	Rota meter for flow measurement	1 No.
9	Photo and magnetic speed pickups for the measurement	1 No.
10	Automatic level control unit using PID with SCADA software.	1 No.
11	Automatic Temperature Control Unit using PID with SCADA Software.	1 No.
12	Automatic Flow Control unit using PID with SCADA Software	1 No.

13	Automatic Pressure Control unit using PID with SCADA Software	1 No.
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Material Science & Metallurgy Laboratory

S. No.	Name of the Equipment	Quantity Available
1	Binocular Metallurgical Microscopes	8 No.
2	Trinocular Metallurgical Microscope	1 No.
3	Muffle Furnace with digital indicator	1 No.
4	Jominy End Quench Test for Hardenability	1 No.
5	Standard Metallographic samples	12 No.
6	Colour image capture system with USB camera	1No.
7	Polishing machine-Dual Disc polisher	1 No.
8	Belt grinder of 1.4HP single phase motor	1 No.

Manufacturing Technology Laboratory

S.No.	Name of the Equipment	Quantity available
1.	Lathe	15
2.	Drilling Machine	01
3.	Milling Machine	02
4.	Shaping Machine	02
5.	Gear Hobbing Machine	01
6.	Surface Grinding Machine	01
7.	Centreless Grinding Machine	01

Computational methods Laboratory

S.No.	Name of the Equipment	Quantity available
1	SYSTEMS Computer(Intel Core 2 Duo @ 2.40GHz, 4GB RAM, 5000GB HDD, GRAPHIC CARD 2GB Optical Mouse,USBKeyboard, 18.5" Wide Screen LCDMonitor)	30 Nos.
2	Printer	1 No.
3	ANSYS,CFX,MAT LAB,FLUENT	1 No.

