



LABORATORY EQUIPMENTS FOR ENGINEERING AND TECHNICAL EDUCATION

IEICOS is a leader in manufacturing and supply of engineering and technical education laboratory equipments and training systems since 1973. IEICOS has been involved in modernization of engineering and technical education and has actively participated in the growth of student knowledge and understanding of various technical concepts with its indigenously developed proprietary advanced laboratory equipments. Our products are updated regularly to match with the needs of the growing world and to be relevant to the current educational standards. IEICOS products are currently in use in various engineering, technical and R&D institutions all over India and abroad.

We present list equipments and training systems we cater to for laboratories in different departments for both undergraduate (B.E./B.Tech/B.S.) and post-graduate (M.E./M.Tech./Ph.D.) engineering education. These laboratory equipments are also suitable for and are being used in Diploma and ITI institutions.

We are well equipped to undertake any special project or development for any laboratory in your department.

We are also registered with NSIC under single point purchase scheme for all government purchases. We request you to kindly register our name in the list of suppliers and look forward to receiving your enquiries in the future.

Please circulate this brochure to all your departments and staff to help them in sending their requirements to us.

MECHANICAL ENGINEERING/ INDUSTRIAL AND PRODUCTION ENGINEERING

METAL CUTTING AND PRODUCTION LAB

Over 37 experiments including

- Lathe Tool Dynamometer, Drill Tool Dynamometer, Milling Tool Dynamometer, Grinding Tool Dynamometer
- Tool Tip Temperature, Online Tool Wear Monitoring

MECHANICAL MEASUREMENTS AND INSTRUMENTATION LAB

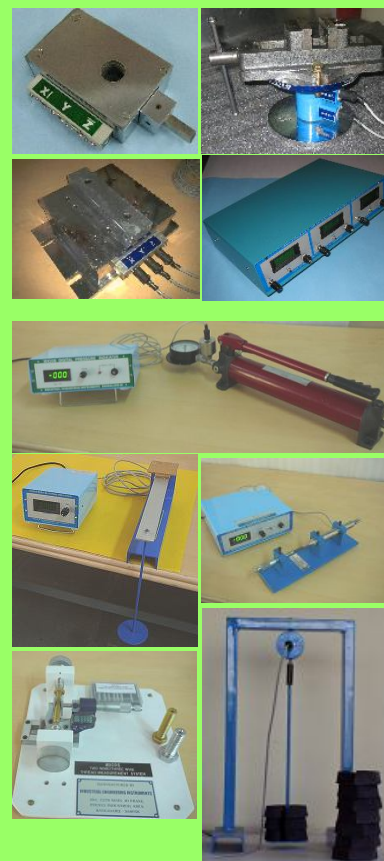
Over 37 experiments including

- measurement of Load/Force, Pressure, Torque, Strain, LVDT, Temperature, Vibration, Sound, Flow, Level,
- study of LDR, photo diode, photo transistor, photo voltaic cell
- characteristics of capacitance, inductance, humidity, pH, conductivity

METROLOGY LAB

Over 20 equipments including

- measurement of Load, Pressure, Torque, Displacement, Temperature, Vibration, Two wire/ Three wire method for screw thread measurement.
- Electronic, mechanical and pneumatic comparators, Floating Carriage Micrometer, Profile Projector, Autocollimator



THEORY OF MACHINES

Over 25 equipments

- Study of Four Bar Mechanisms, Links, Couplers, Gears
- Motorized Gyroscope, Governors, Balancing of reciprocating masses, Flutter Studies on Bluff Bodies and Aerofoils using wind tunnel

VIBRATION LAB

Over 25 equipments

- Vibration Experiments – Free and Forced Vibrations, Longitudinal Vibrations, Transverse Vibrations, Torsional Vibrations, Spring Mass Systems, Dunkerley's rule
- Universal Vibration Apparatus
- Whirling of Shafts, Cam Analysis, FFT Analyser with Vibration Generator

ADVANCED VIBRATION AND NOISE ENGINEERING LAB

Over 15 experiments including

- Vibration of box on flexible springs, Absorber System and tuning of fixed-fixed beam, natural frequencies and mode shapes of free-free beam, Estimation of internal damping.
- Noise mapping of machine, inverse square law of sound, transmission loss of sound through panel

FLUID MECHANICS LAB

Over 20 equipments

- Wind Tunnel, Aerofoils, Strain Gauge Balance, Manometers for pressure distribution and lift drag studies
- Study of Orifice, Venturimeter, Notches, weirs
- Losses in Pipes, Pipe Friction, Pipes in Parallel and Series
- Flow Visualization, Heleshaw Apparatus

FLUID MACHINERY LAB

Over 12 equipments

- Pump Test Rigs – Centrifugal, Reciprocating, Propellor, Jet Pump, Submersible, Self Priming
- Study of Cavitation, Fluid coupling

HEAT TRANSFER LAB

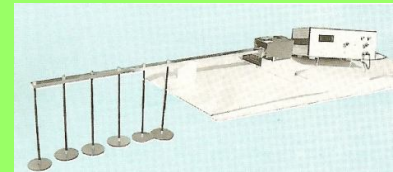
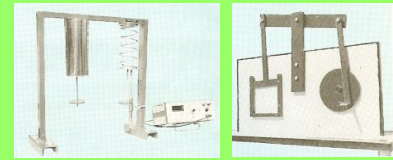
Over 20 equipments

- Thermal Conductivity experiments, Emissivity, Radiation
- Heat Exchanger and Heat Transfer experiments

REFRIGERATION AND AIR-CONDITIONING LAB

Over 25 equipments

- Refrigeration – Conventional, Cascade, Vapour Absorption and Adsorption
- Air Conditioning – Conventional, Window, Split, Automobile, Indirect



- Cooling – Ice Plant, Cooler, Chillers, Evaporative coolers, Vortex tube, Natural and Forced Draught
- Heat Pipe, Heat Pump

IC ENGINE LAB

Over 25 equipments

- Petrol Engine Test rigs, Diesel Engine Test Rigs
- Biogas Engine Test rigs
- Variable Compression Ratio Engine

TRIBOLOGY LAB

Over 25 equipments

- Wear and Friction Tester – Pin-on-disc, Reciprocating
- Journal Bearing, Sliding/Rolling Traction Force, Stick slip Friction
- Hertzian Contact, Mitchell Pad

STRENGTH OF MATERIALS LAB

Over 25 equipments

- Digital Spring Testing Machine, Digital Torsion Testing Machine, Digital Impact Testing Machine
- Digital Hardness Testing Machine, Digital Micro-hardness Tester
- Digital Compression Testing machine
- Strain Indicators, Strain Gauges, Strain Gauge Tool kit

PNEUMATICS AND HYDRAULICS LAB

Over 25 equipments

- Basic Pneumatics Trainer, Advanced Pneumatics Trainer, PLC Based Pneumatics Trainer
- Basic Hydraulics Trainer, Advanced Hydraulics Trainer, PLC Based Hydraulics Trainer
- Understanding of Pneumatics and Hydraulics Components

ERGONOMICS/WORK DESIGN LAB

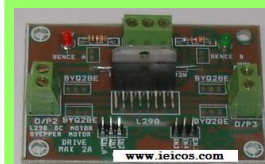
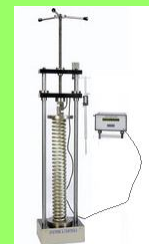
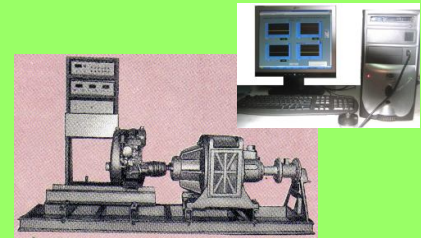
Equipments including

- Dynamometers – Hand Grip, Back and Leg Muscle, Shoulder Arm Push-Pull, Finger Torque, Elbow Torque, Pinch Gauge
- Goniometers, Inclonometers
- Thread Mill Ergometer, Bicycle Ergometer
- Advanced work design equipments

MECHATRONICS LAB

Equipments including

- Microcontrollers, Motor Drive Circuits
- Sensors, transducers, actuators
- Data Acquisition Systems
- Dynamic Experiments, Motion Control Experiments



STRUCTURAL ENGINEERING LAB

Equipments including

- Loading Frame, Hydraulic loading jacks
- Load Cells, LVDT Displacement Sensors and Digital Indicators
- Strain Gauges, Strain Data loggers, Strain Gauge Tool Kit and accessories
- Proving Rings, Extensometers

EARTHQUAKE ENGINEERING LAB

Equipments including

- Shake Tables – Horizontal and Vertical
- Building Frames with multiple storeys with and without stiffeners
- Vibration Absorber/isolator setups

WIND ENGINEERING LAB

Equipments including

- Wind Tunnels,
- Anemometers, Pitot Tubes, Strain Gauge Balance - Lift and Drag Measurement
- Manometers
- Models – Aerofoils, Building Models, Geometric Shapes

STRENGTH OF MATERIALS LAB

Over 25 equipments

- Digital Spring Testing Machine, Digital Torsion Testing Machine, Digital Impact Testing Machine
- Digital Hardness Testing Machine, Digital Micro-hardness Tester
- Digital Compression Testing machine
- Strain Indicators, Strain Gauges, Strain Gauge Tool kit

EXPERIMENTAL STRESS ANALYSIS LAB

Over 25 equipments

- Loading Frame, Load Cell and Load Indicators
- Strain Indicators, Strain Gauges, Strain Gauge Tool kit
- Polariscope

SOIL MECHANICS LAB

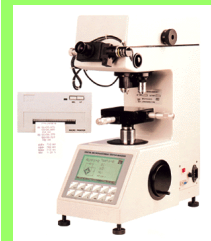
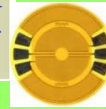
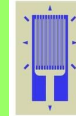
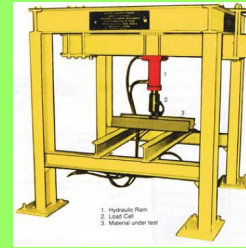
Equipments including

- Tri-axial Test Apparatus
- Consolidation Test Apparatus
- Plate Test Apparatus

CONCRETE LAB

Equipments including

- Tile Abrasion
- Vibration Tables



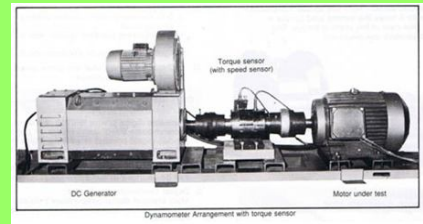
ELECTRONICS/INSTRUMENTATION/ CHEMICAL ENGINEERING

ELECTRICAL ENGINEERING

ELECTRICAL MACHINES LAB

Equipments including

- Electrical Motor Test Bench, AC/DC Machines, Electrical Measuring Instruments
- AC Circuits – Single Phase/Three Phase



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AERODYNAMICS LAB

Equipments including

- Wind Tunnels – subsonic, transonic, supersonic
- Anemometers, Pitot Tubes, Strain Gauge Balance - Lift and Drag Measurement
- Manometers, Models – Aerofoils, Building Models, Geometric Shapes

AIRCRAFT STRUCTURES LAB I

Experiments including

- Deflection Tests – Cantilever Beam, Simply supported Beam, Over-hanging Beam
- Influence Line Diagrams, Buckling Test, shearing strength

AIRCRAFT STRUCTURES LAB II

Experiments including

- Strain Measurement, Bending Test – Maxwell's Theorem, Castigliano's Theorem, Unsymmetrical Bending – C Section, Z Section
- Natural and Forced Vibrations, Young's Modulus

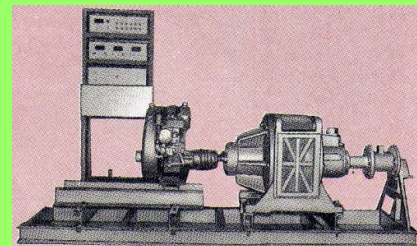


AUTOMOBILE ENGINEERING

ENGINE AND VEHICLE TESTING LAB

Equipments including

- Petrol Engine Test rigs, Diesel Engine Test Rigs, Biogas Engine Test rigs
- Variable Compression Ratio Engine
- Engine cooling – air cooling, water cooling
- Lubrication Systems - Petroil system, Splash system, Pressure system, Dry sump system
- Shock Absorber Test Rig, Chain Test Rig, Transmission System Test Rig, Chassis Dynamometer



FUELS AND LUBRICANTS LAB

- Ramsbottom Carbon Residue Apparatus, Bomb Calorimeter Apparatus, Junkers Calorimeter
- Saybolt Viscometer, Redwood Viscometer
- Cloud and Pour Point Apparatus, Ables flash point Flash a



**WE CATER TO OTHER ENGINEERING DEPARTMENTS ALSO
CONTACT US WITH YOUR REQUIREMENTS**



M/s INDUSTRIAL ENGINEERING INDUSTRIES

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Due to continuous improvement, specifications, dimensions, look, color, feel and features subject to change without notice.