

7. Laboratories

7.1 Lab Facilities

The IIIT R K Valley has developed modern laboratory facilities in all disciplines of engineering and sciences with latest and advanced equipment to expose the students to gain best of practical knowledge in their respective discipline. These laboratories play key role in achieving the objective of RGUKT-AP “Learning by Doing”. From the beginning of the academic year 2016-17, emphasis is given to bring much equipment into working condition on war-foot basis. Place is allocated for many instruments for the installation. Just by spending mere amount and providing man power many sophisticated equipment brought into working condition. The details of the equipment available in engineering branches are given below.

Department of Mechanical Engineering

Table: Mechanical Engineering

S.No.	Name of the laboratory	Major Equipment
1	Computer Aided Design Lab	Software based lab with Hypermesh, hyper view, Radioss, motion solve, motion view
2	Instrumentation Lab	Industrial PLC trainer, vibration measurement trainer, optical radiation pyrometer
3	Manufacturing process lab	High precision lathe, universal milling machine, TIG & MIG welding machines, wire EDM, piezo electric dynamometer
4	Metrology lab	Coordinate measuring machine
5	IC engine Lab	Single cylinder petrol engine, single cylinder diesel engine, four cylinder petro cum diesel engine, heat exchangers

Workshop in the department of Mechanical Engineering



Figure: Lathe Machines



Figure: Welding machines



Figure: CMC machine

Laboratories in Civil Engineering

Table: Civil Engineering

S No	Name of the Laboratory	Major equipment
1	Fluid Mechanics Lab Mechanics of Solids Lab	Universal Testing machine, Microprocessor based Pendulum Impact testing machine
2	Surveying Lab	Trimble m3 Total Station
3	Soil Mechanics Lab	Resonant column Apparatus
4	Transportation Lab	Brooke Field Viscometer, Jaw crusher
5	Concrete Technologies Lab	Digital Ultrasonic concrete tester, compression testing machine, vibrating table
6	Environmental Engineering Lab	COD Digester, GAS cromotograph, UV Visible spectrophoto meter, Atomic absorption spectrophotometer, Micro wave digestive system
7	Advanced Hydraulics Engineering Lab	Hydrology system unit, Impact of Jet, Tilting flow channel, computer controlled pelton wheel and Francis turbine

Major Laboratory equipment in the Department of Civil Engineering



Consolidation Test set up



Laboratories in Metallurgical and Materials Engineering

Table: Metallurgical and Materials Engineering

S No	Name of the Laboratory	Major equipment
1	Physical Metallurgy Lab	Optical Microscope
2	Corrosion Metallurgy Lab	Electrochemical Workstation
3	Material Characterization Lab	Field Emission Scanning Electron microscope, X-Ray diffractometer
4	Materials Testing Lab	Fatigue testing machine, Creep testing machine, micro hardness tester, Instrumented Impact tester, Universal Testing machine
5	Non-destructive Testing lab	Ultrasonic Flaw detector

The major equipment available in the Department of MME



Figure: Field Emission Scanning Electron Microscope



Figure: X-Ray Diffractometer

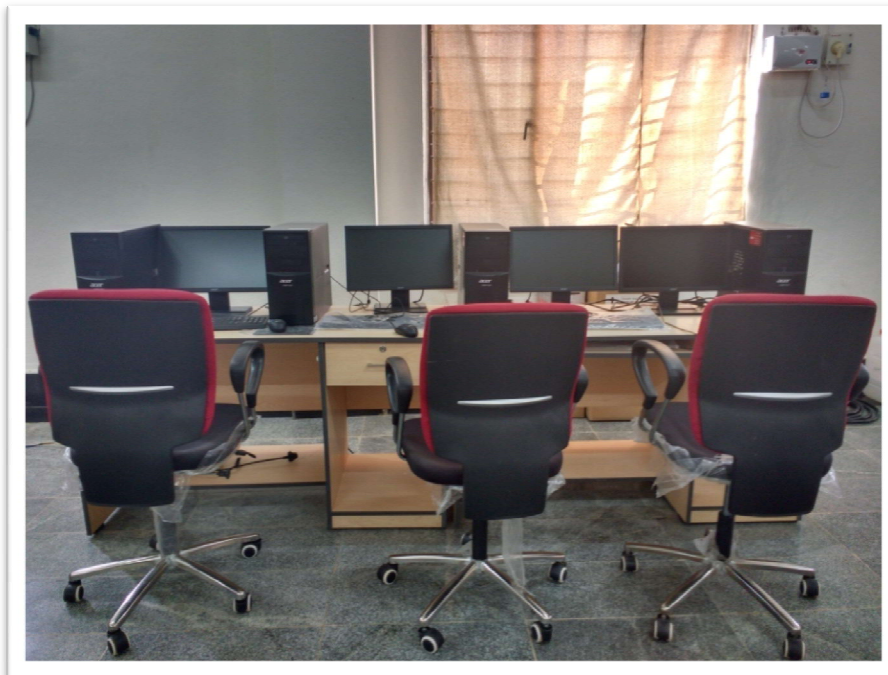


Figure: Personal Computers for XRD and FESEM Data Analysis



Figure: Fatigue system



Figure: Creep systems

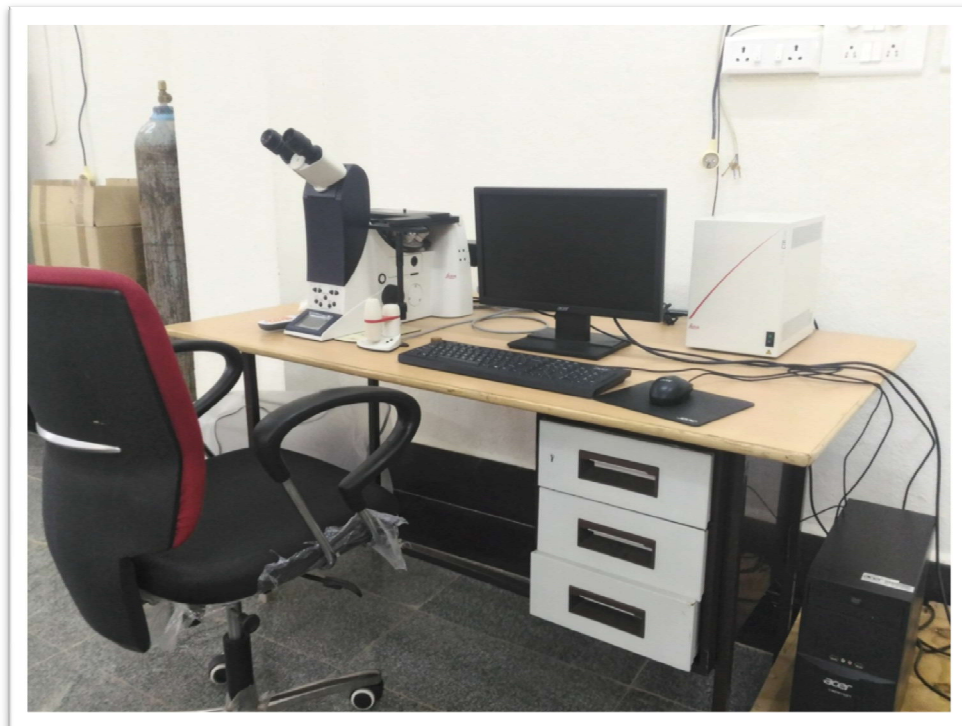


Figure: Leica Optical Microscope



Figure: Microwave furnace and MIG welding Machine



Figure: Various Furnaces

Table: Chemical Engineering

S No	Name of the Lab	Major equipment
1	Spectroscopy Lab	Master cycler Nexus Gradient, UV Visible spectrophotometer
2	Mechanical Unit Operations Lab	Orbital Shaker
3	Instrumentation and Process control Lab	Flow control Trainer, Pressure control trainer
4	Mass Transfer Operations	Absorption unit, adsorption unit
5	Chemical Reactions Engineering	Continuous Distillation column, Tubular reactor, Isothermal CSTR, Gaseous Diffusion Apparatus, Fixed bed Catalysis, Industrial PLC, Cooling tower

The major Lab equipment in the Department of Chemical Engineering



Figure: Orbital shaker