

**VEER NARMAD SOUTH GUJARAT UNIVERSITY**  
**M.Sc(Tech) - I**  
**Instrumentation**

**LABORATORY WORK**

( 09 Hours / week)

Group - A : 3 Hours / week

1. Experiments to familiarise the use of instruments and techniques for measurement, double ended plug gauge, plain ring gauge, plug gauge in a
2. Experiments to familiarise the use of instruments and techniques for measurement of temperature, pressure etc.
3. Workshop practice. Simple exercises in workshop practice in sheet metal work, lathe jobs, shaping machine, milling machine, and grinding machine jobs.

Group – D Project work

Group – B : 3 Hours / week

1. Familiarization with various active and passive components.
2. Development of soldering skill and making of PCB.
3. To design, build and test two stages R C Coupled amplifier.
4. To design, build and test astable multivibrator.
5. To design, build and test Colpitt's oscillator.
6. Operational amplifier I
7. Operational amplifier II
8. To design, build and test adder, subtractor.
9. To design, build and test A to D converter
10. To design, build and test D to A converter
11. To design build and test (i) a 4 bit up counter using JK flip-flops (ii) a Modula N counter using JK flip flops and other gates.
12. Writing and testing different assembly language programmes.

Group – C : 3 Hours / week

1. Experiments with laser kit
2. Experiments with fibre optics kit.
3. Experiments with analytical and environmental instruments.
4. Experiments on vacuum system; case study of design of a High vacuum system, vacuum evaporation and preparation of Mirror conductance and speed of rotatory pump at the vessel measurement of vacuum.
5. Experiments with transducers, L.V.D.T. strain gauge etc.
6. P.I.D. Controller, P.I.D. simulator.