



Phys 1602L	PHYSICS LAB-II	(CR2)
Courses	Phys 1003, 1004	

Objectives

To enable students in performing experiments related to electricity, magnetism and thermodynamics.

Syllabus

Calibration of an Ammeter and a Voltmeter by potentiometer, Charge sensitivity of a ballistic galvanometer and comparison of capacities by ballistic galvanometer, To study the B.H. curve and measure the magnetic parameters, Measurement of low resistance coil by a Carey Foster Bridge, Study of the parameter of wave i.e. amplitude, phase and time period of a complex signal by CRO., Measurement of self/mutual inductance, To study the network theorems (Superposition, Thevenin, Norton), To study the application of Lorentz force by CRO (e/m by J. J. Thomson method), Determination of temperature coefficient of resistance of a given wire, Determination of Stefan's constant, Calibration of thermocouple by potentiometer, Electric fields and potential in the plate capacitors, Magnetic field outside a straight conductor, Magnetic field of a pair of coils in the Helmholtz configuration, To study the Acceptor and Rejecter circuits, The principle of thermocouple, thermoelectric *emf* and temperature diagram, Verification of Stephen-Boltzmann's law of radiation, Determining the specific heat capacities of solids, Thermal expansion of solids and liquids, Thermal and electrical conductivity of metals, To determine thermal *emf* and plot temperature diagram, To determine the Thermal conductivity of good and bad conductors using Lee's and Searl's apparatus, Determination of "J" by Callender – Barnes method

(At least eight experiments must be performed by individual department of affiliated colleges covering all subject areas of the lab course.)

Recommended Books

1. *Physics laboratory experiments* by J. D. Wilson, Cengage Learning (2014)
2. *General Physics Laboratory I Experiments* by K. Clara Castoldi, Kendall Hunt, (2015)
3. *Physics Lab Experiments* by M. French, Mercury Learning & Information, (2016)
4. *Experiments And Demonstrations In Physics: Bar-ilan Physics Laboratory* by Kraftmakher Yaakov, World Scientific (2014)