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| Phys 1602L | PHYSICS LAB-II | (CR1) |
| 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)