

# INTERMEDIATE LABORATORY - PHYX 3870-3880

## List of Experiments

### MECHANICS

- M1. Kater Pendulum
- M2. Coupled Pendulum
- M3. Cavendish Balance
- M4. Acoustics of Loudspeakers

### OPTICS

- O1. Microwaves
- O2. Polarization
- O3. Geometrical Optics & Computer Ray Tracing
- O4. Holography
- O5. Fresnel & Fraunhofer Diffraction
- O6. Michelson & Fabry-Perot Interferometry
- O7. Spatial Filtering
- O8. Index of Refraction of Gases
- O9. Measurements of Beam Profiles
- O10. Fiber Optics

### THERMODYNAMICS/STATISTICAL MECHANICS

- T1. Velocity & Gravitational Distributions
- T2. Avagadro's No: Electrolysis & Brownian Motion
- T3. Blackbody Radiation
- T4. Thermionic Emission

### NUCLEAR PHYSICS

- N1. Statistical Methods in Radiation Physics
- N2. Particle Detectors
- N3. Gamma Spectroscopy
- N4. Compton Scattering

Experiment Under Development  
Shown in Purple

### ELECTRICITY & MAGNETISM

- E1. Millikan's Oil Drop Experiment
- E2. Thompson's e/m Experiment
- E3. Measurement of Plasma Parameters

### ELECTRONICS

- L0. Basic Electronics
- L1. The Diode and Its Applications
- L2. The Transistor and Its Applications
- L3. Operational Amplifiers & Their Applications
- L4. Digital Electronics
- L5. Computer Interfacing
- L6. Transducers and Interfacing
- L7. Electronics Project
- L8. Schematic Design and Circuit Analysis

### ATOMIC PHYSICS

- A1. Franck-Hertz Experiment
- A2. Photoelectric Effect
- A3. Speed of Light
- A4. Atomic Spectra

### SOLID STATE PHYSICS

- S1. Hall Effect
- S2. Electron Diffraction from a Crystal Lattice
- S3. High Temperature Superconductivity
- S4. Electron Paramagnetic Resonance
- S5. Reflection Spectroscopy
- S6. X-ray Diffraction
- S7. Scanning Tunneling Microscopy
- S8. Adsorption of Monolayers–Vapor Pressure Isotherms
- S9. Solid State Simulations and Modeling
- S10. Temperature Variation of Resistivity
- S11. Vibrating Magnetometry