



## Physics Courses

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### **PHYS 5300 Thermal and Statistical Physics (3 credits)**

Principles of thermodynamics and statistical mechanics. Topics include temperature, the laws of thermodynamics, entropy, heat engines and refrigerators, free energy, and Boltzmann and quantum statistics. Prerequisites: Licensed Physics Teacher or B.S. Degree in Physics.

### **PHYS 6030 Survey of Electronics (3 credits)**

A broad survey of the principles of electronics. Topics include series and parallel circuits, Kirchhoff's rules, capacitors and inductors, and digital ICs. Prerequisites: Licensed Physics Teacher or B.S. Degree in Physics.

### **PHYS 6040 Survey of Optics (3 credits)**

An introduction to modern optics, with emphasis on geometric optics. Wave optics will be introduced sufficiently to enable interpretation of diffraction, interference, and laser effects. Prerequisites: Licensed Physics Teacher or B.S. Degree in Physics.

### **PHYS 6050 Modern Physics (3 credits)**

A qualitative and quantitative overview of physics developments in the 20th century, with an emphasis on special relativity and quantum mechanics. Topics include Lorentz transformations, space-time intervals, relativistic energy and momentum, the Heisenberg uncertainty principle, and solutions to Schrödinger's wave equation involving free particles, quantum harmonic oscillators, and the hydrogen atom. Prerequisites: Licensed Physics Teacher or B.S. Degree in Physics.

## All-University Courses

The course numbers listed below, not always included in the semester class schedule, may be registered for by consent of the advisor, instructor, or department chair, or may be assigned by the department when warranted. Individual registration requires previous arrangement by the student and the completion of any required form or planning outline as well as any prerequisites.

1910, 2910, 3910, 4910 DIRECTED INDEPENDENT STUDY  
1920, 2920, 3920, 4920 DIRECTED GROUP STUDY  
1930, 2930, 3930, 4930 EXPERIMENTAL COURSE  
1940, 2940, 3940, 4940 IN-SERVICE COURSE  
1950, 2950, 3950, 4950 WORKSHOP, INSTITUTE, TOUR  
1960, 2960, 3960, 4960 SPECIAL PURPOSE INSTRUCTION  
1970, 2970, 3970, 4970 INTERNSHIP  
1980, 2980, 3980, 4980 RESEARCH  
1990, 2990, 3990, 4990 THESIS