

# PHYSICS (PHYS)

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## Course Descriptions

### **PHYS 503 Electricity & Magnetism 3 Credit Hours**

The study of electrostatics, magnetostatics, and electrodynamics using Maxwell's equations. The course focuses on the development of Maxwell's equations from observation and experiment and on the application of these equations to electromagnetic phenomena. Additional reading assignments and/or projects will distinguish this course from its undergraduate version PHYS 403. Students cannot receive credit for both PHYS 403 and PHYS 503. (W)

**Prerequisite(s):** (MATH 205 or MATH 215) and PHYS 151

**Restriction(s):**

Can enroll if Class is Graduate

### **PHYS 522 Biomedical Imaging 3 Credit Hours**

Biomedical imaging technologies provide noninvasive ways to capture the structure and function of the human body for the diagnosis and treatment of disease or physiological abnormality. The major goal of this course is to introduce the fundamentals of microscopy imaging techniques, data visualization, image processing, and analysis with hands-on lab experience. Three hours lecture, three hours laboratory. Every fourth semester. (F, W).

**Prerequisite(s):** PHYS 126 or PHYS 151

**Restriction(s):**

Can enroll if Class is Graduate

### **PHYS 553 Quantum Mechanics 3 Credit Hours**

A course in non-relative quantum mechanics emphasizing the basic postulates of quantum theory, the concepts of eigenstates and eigenvalues, and the role and use of operators and commutation relations in the development of the subject. Application of the Schrodinger and Heisenberg formalisms to the solution of single-particle systems subject to a variety of potential functions, including simple step/barrier potentials, the harmonic oscillator potential and the Coulomb potential, will be made. Additional reading assignments and/or projects distinguish this course from its undergraduate version PHYS 453. Students cannot receive credit for both PHYS 453 and PHYS 553.

**Prerequisite(s):** MATH 228 and PHYS 305

**Restriction(s):**

Can enroll if Class is Graduate

\*An asterisk denotes that a course may be taken concurrently.

### Frequency of Offering

The following abbreviations are used to denote the frequency of offering: (F) fall term; (W) winter term; (S) summer term; (F, W) fall and winter terms; (YR) once a year; (AY) alternating years; (OC) offered occasionally