

PHYS 2611 - General Physics 2

Fall 2026 Syllabus, Section 02, CRN 41366,

Credit hours: 4

Instructor

Donald Priour

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Public Instructor Information

Instructor Title: Associate Professor

Instructor Professional Qualifications: B.A., Physics, Rice University (1995); M.A., Physics, Princeton University (1997); Ph. D., Physics, Princeton University (2000)

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Course Description

2611. General Physics 2. Study of electric and magnetic fields and their effects; introduction to electric circuits; light as an electromagnetic wave; introduction to geometrical and physical optics. Prereq.: PHYS 2610. Prereq. or concurrent: MATH 1572. 4 s.h.

Course Readings

Group	Title	Author	ISBN
Optional	Any Calculus based General Physics text, but this is optional.		

Handwritten notes spanning the course as a whole will be provided at regular intervals. No external textbook is required though any previous version of the Calculus based general Physics text by Serway and Jewitt may be used), and homework sets will be sent to you via email and posted on the Blackboard site.

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

Schedule of Topics and Assignments

Day	Date	Proposed Topic	Due/To Prepare for Class
Mon	8/24		Segment 1: Introductory Comments and overview of course; electric effects, magnetic effects, and electromagnetism
Tue	8/25		Segment 1: Vector mathematics review including vectors in 3D, the scalar and cross products, and the right hand rule
Wed	8/26		Segment 1: Coulomb's Law and electric forces
Fri	8/28		Segment 1: Coulomb's Law and the Superposition Principle; vector valued electric forces
Mon	8/31		Segment 2: Electric Fields of point charges; electric lines of force
Tue	9/1		Segment 2: One dimensional arrangements are considered, and we locate positions where the electric field vanishes in the case of pairs of charges.

Wed	9/2	Segment 2: Continuum charge distributions are discussed. We consider semi-infinite line charges.
Fri	9/4	Segment 2: We calculate the electric field along the axis of symmetry in the case of a uniformly distributed ring of charge.
Mon	9/7	Class is not scheduled due to the Labor Day Recess
Tue	9/8	Segment 2: Gauss's Law is motivated with physical intuition.
Wed	9/9	Segment 2: We continue to apply Gauss's Law to a variety of continuum charge distributions, including thin spherical shells, uniformly dense spherical charge distributions, infinite line charges, and charged surfaces. We draw a distinction among insulators and conductors.
Fri	9/11	Segment 3: The definition of work is revisited and used to motivate a relation for the potential energy among two point charges. With the superposition principle, we calculate the energy needed to assemble charge configurations.
Mon	9/14	Segment 3: The concept of electric potential is developed.
Tue	9/15	Segment 3: The concept of electric potential is used to gain further insight into the behavior of conductors. The Van de Graff Generator is demonstrated.
Wed	9/16	Segment 3: Capacitance is defined, and the capacitance of parallel plate and spherical capacitors is evaluated.
Fri	9/18	Segment 3: Series and parallel arrangements of capacitors are considered; the enhancement of capacitance due to the presence of a dielectric is discussed; we pause to review for the first midterm exam.
Mon	9/21	First Midterm Exam
Tue	9/22	Segment 4: Electric current is defined, and electric current density is discussed.
Wed	9/23	Segment 4: Batteries are discussed, and the macroscopic version of Ohm's law is developed from the microscopic counterpart. Resistance is discussed.
Fri	9/25	Segment 4: We analyze series and parallel resistor configurations and show cases in which compound configurations may be reduced to equivalent resistances.
Mon	9/28	Segment 4: Kirchhoff's First and Second Law are motivated and applied to nodes as well as single and multi-loop configurations of resistors and DC sources.
Tue	9/29	Segment 4: The RC phenomenon is discussed.

Wed	9/30	Segment 5: Magnetic forces on charges are discussed in tandem with a review of the right hand rule.
Mon	10/19	Second Midterm Exam
Mon	11/16	Third Midterm Exam
Mon	12/7	Final Exam 10:30 am - 12:30 pm

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.