

PHYSICS (PHY)

PHY 100 - Basic Concepts in Physics (3 Credits)

3 lecture, 3 total contact hours

Examines basic topics in physics including motion, force, energy, electricity and magnetism, waves and particles, and atomic structure. Course is intended for non-science majors fulfilling non-laboratory science requirements. IAI P9 900L Prerequisite: Placement into college-level mathematics without support. <https://www.harpercollege.edu/testing/mathplacement.php>

Typically offered: Fall, Spring, Summer

PHY 110 - Introduction to Physics (4 Credits)

3 lecture, 2 lab, 5 total contact hours

Examines topics from physics including motion, structure of matter, electricity and magnetism, waves and particles, and atomic structure. This course is intended for non-science majors fulfilling laboratory science requirements. IAI P1 900L Prerequisite: Placement into college-level mathematics without support. <https://www.harpercollege.edu/testing/mathplacement.php>

Typically offered: Fall, Spring

PHY 112 - Energy and Society (4 Credits)

3 lecture, 2 lab, 5 total contact hours

Introduces non-science majors to topics from various sciences as they relate to energy resources and energy consumption. Connects the theory of energy to its practical applications. Examines the connection between science and economics, politics and other social issues, using energy as a focus. (Meets laboratory science requirements for non-science majors). (formerly PHS 105) IAI P1 901L Prerequisite: Placement into college-level mathematics without support. <https://www.harpercollege.edu/testing/mathplacement.php>

Typically offered: Fall, Spring

PHY 121 - Introductory Physics I (5 Credits)

4 lecture, 3 lab, 7 total contact hours

Covers mechanics, heat, fluids, and sound. Intended for students in life science, architecture, and technology. Students pursuing degrees in engineering, physics or chemistry should enroll in PHY 201. Knowledge of high school trigonometry assumed. IAI P1 900L Prerequisite: MTH 140 with a grade of C or better, or placement options into MTH 200 (Calculus I, IAI M1 900-1, IAI MTH 901). Click here for Math placement information: <https://www.harpercollege.edu/testing/mathplacement.php>

Typically offered: Fall, Spring, Summer

PHY 122 - Introductory Physics II (5 Credits)

4 lecture, 3 lab, 7 total contact hours

Continues PHY 121. Topics in electricity, magnetism, light and modern physics. Prerequisite: PHY 121 with a grade of C or better.

Typically offered: Spring, Summer

PHY 201 - General Physics I-Mechanics (5 Credits)

4 lecture, 2 lab, 6 total contact hours

Introduces mechanics using calculus. Topics include force and motion, work and energy, rotation, oscillations, and fluids. For students in chemistry, engineering, mathematics and physics. IAI P2 900L, IA PHY 911 Prerequisite: MTH 200 (Calculus I, IAI M1 900-1, IAI MTH 901) with a grade of C or better. Recommend concurrent enrollment in MTH 201 (Calculus II, IAI M1 900-2, IAI MTH 902).

Typically offered: Fall, Spring, Summer

PHY 202 - General Physics II-Electricity and Magnetism (5 Credits)

4 lecture, 2 lab, 6 total contact hours

Introduces electricity and magnetism using calculus. Topics include charge; electric field and potential; resistance, capacitance, and inductance; DC and AC circuits; magnetic fields; laws of Gauss, Ampere and Faraday; Maxwell's equations and electromagnetic waves; geometric optics, lenses and mirrors, interference and diffraction, and polarization. For students in chemistry, engineering, mathematics and physics. IAI PHY 912 Prerequisite: MTH 201 and PHY 201 with grades of C or better.

Typically offered: Fall, Spring, Summer

PHY 203 - General Physics III-Thermal and Quantum Physics (5 Credits)

4 lecture, 2 lab, 6 total contact hours

Introduces thermodynamics and quantum physics. Topics include temperature and heat, ideal gas law, first and second law of thermodynamics, kinetic theory of gasses, entropy, relativity, quantization, the atom, solid state physics and conduction, nuclear and elementary particle physics. For students in chemistry, engineering, mathematics and physics. IAI PHY 915A Prerequisite: MTH 201 and PHY 201 with grades of C or better.

Typically offered: Spring