

PHYS-PHYSICS (PHYS)

PHYS 1111. Introductory Computational Physics

3 Credits (2+2P)

Introduction to computational techniques for the solution of physics-related problems.

Prerequisite(s): a C- or better in MATH 1220G or MATH 1250G or MATH 1511G.

PHYS 1112. Introductory Physics for the Health Sciences

3 Credits (3)

Algebra-level introduction to topics required for the Health Sciences including basic mechanics (including sound, mechanical waves and fluids), heat and thermodynamics, electricity and magnetism, optics and electromagnetic waves, atomic and nuclear physics and applications to medical imaging. Restricted to Community Colleges campuses only.

Prerequisite(s): MATH 1215 or Equivalent.

PHYS 1115G. Survey of Physics with Lab

4 Credits (3+3P)

Overview of the concepts and basic phenomena of physics. This course provides a largely descriptive and qualitative treatment with a minimum use of elementary mathematics to solve problems. No previous knowledge of physics is assumed. Includes laboratory.

PHYS 1125G. Physics of Music

4 Credits (3+2P)

Introduction for non-science majors to basic concepts, laws, and skills in physics, in the context of a study of sound, acoustics, and music.

PHYS 1230G. Algebra-Based Physics I

3 Credits (3)

An algebra-based treatment of Newtonian mechanics. Topics include kinematics and dynamics in one and two dimensions, conservation of energy and momentum, rotational motion, equilibrium, and fluids.

PHYS 1230L. Algebra-Based Physics I Lab

1 Credit (1)

A series of laboratory experiments associated with the material presented in PHYS 1230G.

Prerequisite(s)/Corequisite(s): PHYS 1230G.

PHYS 1240G. Algebra-Based Physics II

3 Credits (3)

The second half of a two semester algebra-based introduction to Physics. This course covers electricity, magnetism and optics.

Prerequisite(s): a C- or better in PHYS 1230G or PHYS 2230G.

PHYS 1240L. Algebra-Based Physics II Lab

1 Credit (1)

A series of laboratory experiments associated with the material presented in PHYS 1240G.

Prerequisite(s)/Corequisite(s): PHYS 1240G.

PHYS 1241. Problems in Algebra-Based Physics II

1 Credit (1)

This is a supplemental course for Algebra-based Physics II.

Corequisite(s): PHYS 1240G.

PHYS 1310G. Calculus -Based Physics I

3 Credits (3)

A calculus level treatment of classical mechanics and waves, which is concerned with the physical motion concepts, forces, energy concepts, momentum, rotational motion, angular momentum, gravity, and static equilibrium. May be repeated up to 3 credits.

Prerequisite(s): a C- or better in MATH 1511G or higher.

PHYS 1310L. Calculus -Based Physics I Lab

1 Credit (3P)

A series of laboratory experiments associated with the material presented in Calculus-based Physics I. Students will apply the principles and concepts highlighting the main objectives covered in coursework for Calculus-based Physics I.

Prerequisite(s)/Corequisite(s): PHYS 1310G.

PHYS 1311. Problems in Calculus-Based Physics I

0.5-1 Credits (.5-1)

This is a supplemental course for Calculus-based Physics I. May be repeated up to 1 credits.

Corequisite(s): PHYS 1310G.

PHYS 1320G. Calculus -Based Physics II

3 Credits (3)

A calculus level treatment of classical electricity and magnetism. It is strongly recommended that this course is taken at the same time as Calculus-based Physics II laboratory. May be repeated up to 3 credits.

Prerequisite(s): a C- or better in PHYS 2110 or PHYS 1310G and MATH 1521G or higher.

PHYS 1320L. Calculus -Based Physics II Lab

1 Credit (3P)

A series of Laboratory experiments associated with the material presented in Calculus-Based Physics II. Students will apply the principles and concepts highlighting the main objectives covered in coursework for Calculus-Based Physics II.

Prerequisite(s)/Corequisite(s): PHYS 1320G. Prerequisite(s): A C- or better in PHYS 2110L or PHYS 1310L.

PHYS 1321. Problems in Calculus-Based Physics II

0.5-1 Credits (.5-1)

This is a supplemental course for Calculus-based Physics II.

Corequisite(s): PHYS 1320G.

PHYS 2110. Mechanics

3 Credits (3)

Newtonian mechanics.

Prerequisite(s)/Corequisite(s): MATH 1511G or higher.

PHYS 2110L. Experimental Mechanics

1 Credit (3P)

Laboratory experiments associated with the material presented in PHYS 2110. Science majors.

Prerequisite(s)/Corequisite(s): PHYS 2110.

PHYS 2111. Supplemental Instruction to PHYS 2110

0.5-1 Credits (.5-1)

This Optional workshop as a supplement to PHYS 2110. The tutorial sessions focus on reasoning and hands-on problem solving. May be repeated up to 1 credits.

Corequisite(s): PHYS 2110.

PHYS 2120. Heat, Light, and Sound

3 Credits (3)

Calculus-level treatment of thermodynamics, geometrical and physical optics, and sound. May be repeated up to 3 credits.

Prerequisite(s): a C- or better in PHYS 2110 or PHYS 1310G, and MATH 1511G or higher.

PHYS 2120L. Heat, Light, and Sound Laboratory

1 Credit (3P)

Laboratory experiments associated with the material presented in PHYS 2120. Science majors.

Prerequisite(s)/Corequisite(s): PHYS 2120. Prerequisite(s): a C- or better in PHYS 2110L or PHYS 1310L.

PHYS 2121. Supplemental Instruction to PHYS 2120**0.5-1 Credits (.5-1)**

This optional workshop supplements PHYS 2120 'Heat, Light, and Sound'. Students actively apply concepts and methods introduced in PHYS 2120 to problem solving and quantitative analysis. May be repeated up to 1 credits.

Corequisite(s): PHYS 2120.

PHYS 2140. Electricity and Magnetism**3 Credits (3)**

Charges and matter, the electric field, Gauss law, the electric potential, the magnetic field, Ampere's law, Faraday's law, electric circuits, alternating currents, Maxwell's equations, and electromagnetic waves. May be repeated up to 3 credits.

Prerequisite(s)/Corequisite(s): MATH 1521G. Prerequisite(s): a C- or better in PHYS 2110 or PHYS 1310G, and MATH 1511G or higher.

PHYS 2140L. Electricity & Magnetism Laboratory**1 Credit (3P)**

Laboratory experiments associated with the material presented in PHYS 2140.

Prerequisite(s)/Corequisite(s): PHYS 2140. Prerequisite(s): a C- or better in PHYS 2110 or PHYS 1310G.

PHYS 2141. Supplemental Instruction to PHYS 2140**0.5-1 Credits (.5-1)**

Optional workshop as a supplement to PHYS 2140. The tutorial sessions focus on reasoning and hands-on problem solving. May be repeated up to 1 credits.

Corequisite(s): PHYS 2140.

PHYS 2230G. General Physics for Life Science I**3 Credits (3)**

This algebra-based introduction to general physics covers mechanics, waves, sound, and heat. Special emphasis is given to applications in the life sciences. This course is recommended for students in the life sciences and those preparing for the physics part of the MCAT. May be repeated up to 3 credits.

Prerequisite(s): A C or better in MATH 1215 or higher.

PHYS 2230L. Laboratory to General Physics for Life Science I**1 Credit (1)**

Laboratory experiments in topics associated with material presented in PHYS 2230G.

Prerequisite(s)/Corequisite(s): PHYS 2230G. Restricted to Las Cruces campus only.

PHYS 2231. Supplemental Instruction to General Physics for Life Sciences I**1 Credit (1)**

This optional workshop supplements Physics for Life Sciences I. The tutorial sessions focus on reasoning and hands-on problem solving. May be repeated up to 1 credits.

Corequisite(s): PHYS 2230G.

PHYS 2240G. General Physics for Life Science II**3 Credits (3)**

This algebra-based course covers electricity, magnetism, light, atomic physics, and radioactivity. Special emphasis is given to applications in the life sciences. This course is recommended for students in the life sciences and those preparing for the physics part of the MCAT. May be repeated up to 3 credits.

Prerequisite(s): a C- or better in PHYS 1230G or PHYS 2230G, and MATH 1220G or higher.

PHYS 2240L. Laboratory to General Physics for Life Science II**1 Credit (1)**

Laboratory experiments in topics associated with material presented in PHYS 2240.

Prerequisite(s)/Corequisite(s): PHYS 2240G. Restricted to Las Cruces campus only.

PHYS 2241. Supplemental Instruction to General Physics for Life Sciences II**1 Credit (1)**

This optional workshop is a supplement to Physics for Life Science II. The tutorial sessions focus on reasoning and hands-on problem solving. May be repeated up to 1 credits.

Corequisite(s): PHYS 2240G.

PHYS 2996. Special Topics**1-3 Credits**

Topics to be announced in the Schedule of Classes. May be repeated for a maximum of 12 credits.

PHYS 2997. Independent Study**1-3 Credits**

Individual analytical or laboratory studies directed by a faculty member. May be repeated for a maximum of 6 credits.

Prerequisite: consent of instructor.