

PHYSICS (PHYS)

PHYS 120 F Relativity for Poets

3 Units

Prerequisite(s): MATH 040 F or MATH 041 F or MATH 043 F, with a grade of C or better or by assessment through the college's multiple measures placement process.

54 hours lecture per term. This course is intended for non-science students seeking general education credit in a physical science course without a lab. It presents Einstein's bizarre universe, from black holes to the Big Bang. Relativity's role in everyday life is discussed, including GPS and the magnet stuck to your fridge. Emphasis is placed on concepts rather than manipulating equations. (Degree Credit) (CSU) (UC) AA GE, CSU GE, IGETC

PHYS 130 F Elementary Physics

4 Units

Prerequisite(s): MATH 020 F with a grade of C or better or by assessment through the college's multiple measure placement processes.

54 hours lecture and 54 hours lab per term. This course is a survey of some of the more important principles, philosophy, and phenomena of physics. Topics include mechanics, electricity and magnetism, wave phenomena, and modern physics. The course is intended for those with no previous experience in physics. It is not open to anyone who has taken a college level physics course. The laboratory includes experiments in measurement, mechanics, electricity, wave phenomena, and radioactivity. (Degree Credit) (CSU) (UC Credit Limitation; no credit if taken after PHYS 205 F, PHYS 210 F or PHYS 221 F) AA GE, CSU GE, IGETC (C-ID: PHYS 140)

PHYS 205 F Physics for the Life Sciences I

4 Units

Prerequisite(s): MATH 141 F or MATH 141HF or MATH 143 F and MATH 142 F with a grade of C, or better, or by assessment through the college's multiple measures placement processes.

54 hours lecture and 54 hours lab per term. This course covers Newtonian mechanics, conservation laws, heat, and waves. The laboratory portion of the course investigates these topics both qualitatively and quantitatively, and includes the use of graphing and statistics, and propagation of errors. This is the first half of an algebra-based two-semester sequence (PHYS 205 F and 206 F) for students majoring in the life sciences. This course satisfies a requirement for biology majors in the CSU system, but not the UC system. (Degree Credit) (CSU) (UC Credit Limitation) AA GE, CSU GE, IGETC (C-ID: PHYS 105)

PHYS 206 F Physics for the Life Sciences II

4 Units

Prerequisite(s): PHYS 205 F with a grade of C or better

54 hours lecture and 54 hours lab per term. This course covers electricity and magnetism, optics, special relativity, and quantum physics. The laboratory portion of the course investigates these topics both qualitatively and quantitatively, and includes the use of graphing and statistics, and propagation of errors. This is the second half of an algebra-based two-semester sequence (PHYS 205 F and 206 F) for students majoring in the life sciences. This course satisfies a requirement for biology majors in the CSU system, but not the UC system. (Degree Credit) (CSU) (UC Credit Limitation) AA GE, CSU GE, IGETC (C-ID: PHYS 110)

PHYS 210 F Physics with Calculus for the Life Sciences I

4 Units

Corequisite(s): MATH 151 F or MATH 151HF, with a grade of C or better, or by assessment through the college's multiple measures placement processes.

54 hours lecture and 54 hours lab per term. This course covers Newtonian mechanics, conservation laws, heat, and waves. The laboratory portion of the course investigates these topics both qualitatively and quantitatively, and includes the use of graphing and statistics, and propagation of errors. This is the first half of a calculus-based two-semester sequence (PHYS 210 F and 211 F) for students majoring in the life sciences. This course satisfies a requirement for biology majors in the UC system; the CSU system will accept either this sequence or PHYS 205 F and 206 F. (Degree Credit) (CSU) (UC Credit Limitation) AA GE, CSU GE, IGETC (C-ID: PHYS 105)

PHYS 211 F Physics with Calculus for the Life Sciences II

4 Units

Prerequisite(s): PHYS 210 F with a grade of C or better

Corequisite: MATH 152 F or MATH 152HF, with a grade of C or better, or by assessment through the college's multiple measures placement processes. 54 hours lecture and 54 hours lab per term. This course covers electricity and magnetism, optics, special relativity, and quantum physics. The laboratory portion of the course investigates these topics both qualitatively and quantitatively, and includes the use of graphing and statistics, and propagation of errors. This is the second half of a calculus-based two-semester sequence (PHYS 210 F and 211 F) for students majoring in the life sciences. This course satisfies a requirement for biology majors in the UC system; the CSU system will accept either this sequence or PHYS 205 F and 206 F. (Degree Credit) (CSU) (UC Credit Limitation) AA GE, CSU GE, IGETC (C-ID: PHYS 110)

PHYS 221 F General Physics I

4 Units

Prerequisite(s): MATH 151 F or MATH 151HF, with a grade of C or better or by assessment through the college's multiple measures placement processes.

Corequisite: MATH 152 F or MATH 152HF, with a grade of C or better. 54 hours lecture and 54 hours lab per term. This course covers mechanics, vibrations, properties of matter. The laboratory provides students with hands-on experience working with the subject material. Required for majors in physics and engineering. Recommended for majors in all the other physical sciences. PHYS 221 F, 222 F, and 223 F are a calculus-based, three-semester survey of introductory physics. High school physics or PHYS 130 F is strongly recommended, and students must complete one semester of calculus before beginning the sequence. (Degree Credit) (CSU) (UC Credit Limitation) AA GE, CSU GE, IGETC (C-ID: PHYS 205)

PHYS 222 F General Physics II

4 Units

Prerequisite(s): PHYS 221 F and MATH 152 F or MATH 152HF with a grade of C or better

54 hours lecture and 54 hours lab per term. This course covers electrostatics, electric and magnetic fields, simple DC and AC circuits, and Maxwell's equations in integral form. The lab provides students with hands-on experience working with the subject material. Required for majors in physics and engineering. Recommended for majors in all the other physical sciences. (Degree Credit) (CSU) (UC Credit Limitation) AA GE, CSU GE, IGETC (C-ID: PHYS 210)

PHYS 223 F General Physics III

4 Units

Prerequisite(s): PHYS 222 F with a grade of C or better

54 hours lecture and 54 hours lab per term. This course covers the topics of thermodynamics, mechanical and electromagnetic waves, geometrical and physical optics, special relativity, and an introduction to quantum mechanics including wave-particle duality, the uncertainty principle, the atom, and the nucleus. The laboratory provides students with hands-on experience working with the subject material. PHYS 221 F, 222 F, and 223 F are a calculus-based three-semester survey of introductory physics. Required of majors in physics and most majors in engineering. Recommended for majors in all the other physical sciences. (Degree Credit) (CSU) (UC Credit Limitation) AA GE, CSU GE, IGETC (C-ID: PHYS 215)