

Physical Science & Physics

Degree: A.S. - Mathematics & Physical Science

Area: Science and Engineering

Dean: TBD

Phone: (916) 484-8107

Counseling: (916) 484-8572

ARC offers a program of broad study in the field of mathematics and physical sciences.

Physical Science

Mathematics/Physical Science

This is a broad study in the field of mathematics and physical sciences. Eighteen units of transfer level course work are required in addition to other graduation requirements. Courses may be selected from astronomy, chemistry, engineering, geology, mathematics, physical geography, physical science, physics and statistics.

General Education Graduation Requirements: In addition to completing the degree requirements, students must also complete the general education graduation requirements for an AA./A.S. degree. See ARC graduation requirements.

PS 300 Introduction to Physical Science 3 Units

Formerly: PS 1

Prerequisite: None

Advisory: MATH 32.

Course Transferable to UC/CSU

Hours: 54 hours LEC

This course covers the fundamental concepts of astronomy, geology, physics, chemistry and meteorology. It is designed for the student with little or no science background. It is not open to science, mathematics or engineering majors. AA/AS area 3A; CSU area B1; IGETC area 5A.

PS 301 Physical Science Laboratory 1 Unit

Prerequisite: None

Corequisite: PS 300.

Advisory: MATH 100.

Course Transferable to UC/CSU

Hours: 54 hours LAB

This laboratory course provides hands-on experiments in several disciplines in the physical sciences. Study of geologic, weather and topographic maps, star charts and use of tools, equipment and methods of science are also covered. AA/AS area 3A; CSU area B1; IGETC area 5A.

Physics

Physics

PHYS 310 Conceptual Physics 3 Units

Formerly: PHYS 10

Prerequisite: None

Advisory: MATH 100.

Course Transferable to UC/CSU

Hours: 54 hours LEC

This is a survey course for liberal arts majors and students who have not taken a course in physics. It includes selected topics in motion, gravity, heat, sound, electricity, magnetism, light, atomic and nuclear physics. AA/AS area 3A; CSU area B1; IGETC area 5A.

PHYS 311 Basic Physics 3 Units

Formerly: PHYS 11

Prerequisite: MATH 330.

Course Transferable to UC/CSU

Hours: 54 hours LEC

This is a survey course for science majors who have had no previous course in physics and who plan to continue with Physics 350 or 410. Emphasis is on problem solving. Students who have taken PHYS 310 cannot get transfer credit for Physics 311. AA/AS area 3A; CSU area B1; IGETC area 5A.

PHYS 312 Conceptual Physics Laboratory 1 Unit

Prerequisite: None

Corequisite: PHYS 310.

Course Transferable to UC/CSU

Hours: 54 hours LAB

This laboratory course complements PHYS 310. Together with PHYS 310, this course satisfies the UC and CSU general education science lab requirement. Emphasis is placed on the nature of scientific observation and measurement and their relationship to general physical concepts. This course provides concrete, hands-on observation activities and interpretation of data from a variety of experimental environments. AA/AS area 3A; CSU area B1; IGETC 5A

PHYS 350 General Physics 4 Units

Formerly: PHYS 5A

Prerequisite: MATH 330 with a grade of "C" or better or placement through assessment.

Advisory: PHYS 311.

Course Transferable to UC/CSU

Hours: 54 hours LEC; 54 hours LAB

This course deals with mechanics, heat and sound. It satisfies partial requirements in pre-medical courses and in other technical courses except physics and engineering. (CAN PHYS 2) (PHYS SEQ A) AA/AS area 3A; CSU area B1; IGETC area 5A

PHYS 360 General Physics 4 Units

Prerequisite: PHYS 350 with a grade of "C" or better.

Course Transferable to UC/CSU

Hours: 54 hours LEC; 54 hours LAB

Topics in this course include electric charge, electric fields, AC and DC circuit theory, electromagnetism, optics, wave theory and atomic physics. It is designed for biological science students, including those in pre-medical, pre-dental, agricultural and forestry programs. (CAN PHYS 4); (PHYS SEQ A)

PHYS 410 Mechanics of Solids and Fluids 5 Units

Formerly: PHYS 4A

Prerequisite: MATH 400 with a grade of "C" or better.

Corequisite: MATH 401.

Advisory: PHYS 311.

Course Transferable to UC/CSU

Hours: 72 hours LEC; 54 hours LAB

This course covers mechanics of particles, rigid bodies and fluids. The Physics 410-421-431 sequence is required for majors in physics, chemistry or engineering. The class includes lecture, laboratory and problem discussion sections. (CAN PHYS 8) (PHYS SEQ B) AA/AS area 3A; CSU area B1; IGETC area 5A

PHYS 421 Electricity and Magnetism 4 Units

Formerly: PHYS 4B

Prerequisite: PHYS 410 with a grade of "C" or better.

Advisory: MATH 402.

Course Transferable to UC/CSU

Hours: 54 hours LEC; 54 hours LAB

This course covers an in-depth treatment of electricity and magnetism. It involves problem solving with emphasis on utilization of integral calculus. (CAN PHYS 12); (PHYS SEQ B).

PHYS 431 Heat, Waves, Light and Modern Physics 4 Units

Formerly: PHYS 4C

Prerequisite: PHYS 410 with a grade of "C" or better.

Advisory: MATH 402.

Course Transferable to UC/CSU

Hours: 54 hours LEC; 54 hours LAB

This course covers thermodynamics and heat, statistical mechanics, waves and sound, light, quantum concepts, and nuclear physics. (CAN PHYS 14); (PHYS SEQ B).