

PHYSICS

TRANSFER

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The science of physics is concerned with the nature of matter and energy and encompasses all phenomena in the physical world from elementary particles to the structure and origin of the universe. Physics provides, together with mathematics and chemistry, the foundation of work in all fields of physical science and engineering, and contributes to other fields such as biology and medicine. A student completing a curriculum in physics should be prepared for careers in education and industry, and for advanced work in the various fields of physics.

SUGGESTED CURRICULUM FOR ASSOCIATE IN SCIENCE:

FRESHMAN

CREDITS

College Composition I-II, Intro. to Professional Writing (ENGL 110 and 120 or 125)	6
General Chemistry I&II (CHEM 121-122).....	8
General Chemistry I&II Lab (CHEM 121L-122L)	2
Calculus (MATH 165-166)	8
Computer Programming (CSCI 101 or 122).....	3-4
Arts and Humanities Electives	3
Social Science Electives	3
Enrichment	2
Total credits.....	35-36

SOPHOMORE

CREDITS

University Physics I-II (PHYS 251-252).....	8
University Physics I-II Lab (PHYS 251L-252L).....	2
Calculus (MATH 265).....	4
Introduction to Differential Equations (MATH 266)	3
Arts and Humanities Electives	3
Social Science Electives	3
Fundamentals of Public Speaking (COMM 110)	3
Special Topics in Physics (PHYS 299)	3
Total credits.....	29

PHYSICS (PHYS)

PHYS 100 Concepts of Physics

Spring BD

3 credits

Concurrent registration in PHYS 100L is required. An introduction to physics with applications in everyday life. Material is presented from a conceptual rather than mathematical viewpoint. A few fundamental physical laws are studied and applied to explain a wide range of everyday phenomena. The course is designed for students who have a limited mathematical background. Prerequisites: None.

PHYS 100L Concepts of Physics Lab

Spring BD

1 credit

Concurrent registration in PHYS 100 is required. Two hours of lab per week. Laboratory to accompany PHYS 100.

PHYS 110 Introductory Astronomy

Fall

3 credits

Concurrent registration in PHYS 110L is required. Brief history of ancient astronomy; the Copernican revolution and the beginning of modern astronomy (Copernicus, Kepler, Galileo, Newton); the appearance of the night sky, revolution and rotation of the Earth, celestial coordinate systems, the calendar and seasons; the nature of light and telescopes; structure and origin of the solar system; the Earth, atmospheric phenomena (rainbows, haloes, aurora, etc.) the Moon; the planets and their satellites; comets and solar system debris (asteroids and meteorites); distances and motions of the stars; formation of stellar spectra; the Sun; evolution of ordinary stars; evolution of massive stars and supernovae; neutron stars, pulsars and black holes; the Milky Way and other galaxies; the expanding universe, quasars and cosmology.

PHYS 110L Introductory Astronomy Lab

Fall

1 credit

The lab will include topics that support the lecture (PHYS 110). Labs meet two hours per week. (Concurrent registration in PHYS 100 is required.)

PHYS 200 Selected Topics in Physics

BD

1-3 credits

This course will be offered on demand to qualified students. Topics dependent upon individual student interest. A documented report is expected from the students. A maximum of four (4) credits may be earned in this manner.

PHYS 211-212 College Physics I-II

211 Fall 212 Spring

3 credits each

PHYS 211 is a prerequisite for 212. Concurrent registration in PHYS 211L for 211; PHYS 212L for 212 is required. Recommended course sequence for pre-medical students. Topics include: Kinematics, mechanics, thermodynamics, waves, electricity and magnetism, and optics. Prerequisites: College algebra or equivalent, trigonometry recommended.

PHYS 211L-212L College Physics I-II Lab**211L Fall 212L Spring 1 credit each**

Concurrent registration in PHYS 211 for PHYS 211L; PHYS 212 for PHYS 212L is required. Three hours of lab per week. Laboratories to accompany PHYS 211 and 212.

PHYS 251-252 University Physics I-II**251 Fall 252 Spring 4 credits each**

Concurrent registration in PHYS 251L for 251; PHYS 252L for 252 is required. Classical physics using calculus for majors in mathematics, physical sciences and engineering. Topics may include: kinematics, mechanics, thermodynamics, waves, electricity and magnetism, and optics. Prerequisites: MATH 165 for 251, MATH 166 for 252. 251 is prerequisite for 252.

PHYS 251L-252L University Physics I-II Lab**251L Fall 252L Spring 1 credit each**

Concurrent registration in PHYS 251 for PHYS 251L; PHYS 252 for PHYS 252L is required. Three hours of lab per week. Laboratories to accompany PHYS 251 and 252.

PHYS 294 Independent Study**1-3 credits**

Independent or directed study of special topics in physics. Department chairperson approval is required.

PHYS 299 Special Topics in Physics**BD****1-3 credits**

Repeatable up to six semester hours. An examination of special topics in physics.

PHYS 195-295 Service Learning**1-3 credits**

Maximum of six semester hours. Service learning may be accomplished by one of three methods: Joining a club that has a public service component, doing volunteer work at a non-profit organization, or taking a course that links public service with its curriculum.

PHYS 197-297 Cooperative Education/Internship**F&S SM****1-3 credit hours each**

Repeatable up to a maximum of six hours. Work hours are arranged by employer, adviser and student. Progress is checked by oral and written reports from the employer. Periodic student-advisor conferences are required to discuss progress or problems. Students are required to submit an accounting of their experiences to their instructor. All co-op experiences are based on a satisfactory/unsatisfactory basis. Department chair approval is required.