ASSOCIATE OF SCIENCE: AREA OF EMPHASIS

Career & Technical Education Program

An associate of science degree in Career & Technical Education program will be awarded upon completion of the requirements for the certificate or program of 18 units or more with a grade of "C" or better or a "P," if the course is taken on a "pass-no pass" basis. Completion of the graduation requirements as described in the catalog, as well as electives, totaling 60 units of college work as required for the associate degree.

MATH AND SCIENCE
AS493/AS493B/AS493C

These courses emphasize the natural sciences, which examine the physical universe, its life forms, and its natural phenomena. Courses in math emphasize mathematical, analytical, and reasoning skills beyond the level of intermediate algebra. Courses in science emphasize an understanding of the process of science and the scientific method. Courses emphasize the use of mathematics and science as investigative tools, the role of mathematics and science as part of human civilization and society, and the inherent value of both inductive and deductive reasoning as part of the human experience.

This area of emphasis is designed for general education students, as well as students interested in mathematics or sciences as a possible career path, with career opportunities included in mathematics, chemistry, physics, biology, ecological/earth sciences, geology, engineering, computer science, electronics, oceanography, microbiology, kinesiology/exercise science and the medical sciences.

Program Learning Outcomes

Students possessing an Associate Degree in Math and Science can be expected to demonstrate achievement of the following learning outcomes:

1. Apply the basic operations of mathematics on the set of real and complex numbers, expressions, and equations.
2. Apply the principles of the scientific method, including the use of inductive and deductive reasoning to pose, test, and accept or reject hypotheses.
3. Recognize and determine the role of mathematics and the sciences as investigative and reasoning tools of human societies.

The student must complete 18 units of study with a grade of "C" or better or a "P" if the course is taken on a "pass-no pass" basis.

Included Disciplines and Courses

Required Courses (Take one course in each of the three categories, including one course with a lab):

1. Mathematics:
    Mathematics (MAT): 1A, 5, 10, 11, 12, 12H, 25

2. Physical Sciences:
    Astronomy (AST) 1A
    Chemistry (CHE) 1A, 1AH, 2A, 3, 10
    Geography (GEG) 1, 1H, 1L
    Geology (GEO) 1, 1L, 3
    Oceanography (OCE) 1
    Physical Science (PHS) 1
    Physics (PHY) 2A, 4A, 10

3. Life Sciences:
    Biology (BIO) 1, 1H, 2, 2A, 2B, 4, 5, 6, 7, 8, 9, 10, 18, 19, 20, 50A, 55, 60, 60H

Elective Courses (The remaining units may be taken from any of the following courses):
Anthropology (ANT): 1, 1H
Astronomy (AST): 1A, 1B
Biology (BIO): 1, 1H, 2, 2A, 2B, 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 18, 19, 20, 31A, 31B, 31C, 31D, 31E, 35, 36, 40, 45, 50A, 50B, 55, 60, 60H, 61, 85
Chemistry (CHE): 1A, 1AH, 1B, 1BH, 2A, 2B, 3, 10, 12A, 12B, 17
Computer Information Systems (CIS): 5, 17A, 17B, 17C, 18A, 18B, 18C
Computer Science (CSC): 5, 17A, 17B, 17C, 18A, 18B, 18C
Electronics (ELE): 23, 25
Engineering (ENE): 10, 21, 27, 30, 35
Geography (GEG): 1, 1H, 1L, 5
Geology (GEO): 1, 1B, 1L, 3
Health Science (HES): 1
Mathematics (MAT): 1A, 1B, 1C, 2, 3, 5, 10, 11, 12, 12H, 25, 32, 36
Oceanography (OCE): 1, 1L
Physical Science (PHS): 1, 5
Physics (PHY): 2A, 2B, 4A, 4B, 4C, 4D, 10, 11
Psychology (PSY): 2

A course may only be counted once.