

## PHYSICAL SCIENCE, Associate in Science Degree - 3076

### Science Department

The Physical Science AS degree provides students with the firm foundation in mathematics, science, and liberal arts necessary to transfer to and succeed in a baccalaureate degree program in astronomy, geology, meteorology, physics, and physical science. This program offers two options for the Physical Science AS degree: **Geology or a General Physical Science**. The Geology option is for students intending to go on to degrees in the Geology or Environmental Science fields. The General Physical Science option is for students intending to go on to degrees in Physics, Astronomy, Meteorology, or Physical Science. With appropriate further education, graduates may find jobs in astronomical research and/or planetarium operations (astronomy), the petroleum industry, the mining industry, or within a government agency (geology). They may also find employment at the National Weather Service as a weather researcher, or broadcasting (meteorology); within research and development at a university or in private industry, at a national laboratory, inspection, testing, and quality control, or other production-related jobs (physics); or as an environmental consultant or lawyer. Since the requirements of senior institutions and their degree programs vary widely, it is recommended that students choose an intended transfer institution as soon as possible and carefully align their course sequence with the program described in that institution's catalog. The General Physical Track can be completed at the Harrisburg, Lancaster and York campuses. Students can complete the Geology Track at the Harrisburg Campus by taking courses through Virtual Learning.

### Transfer Opportunities

This transfer curriculum is provided as a guide for students planning to transfer to a baccalaureate degree granting institution. With appropriate further education, graduates may find jobs in astronomical research and/or planetarium operations (astronomy), the petroleum industry, the mining industry, or within a government agency (geology). They may also find employment at the National Weather Service as a weather researcher, or broadcasting (meteorology); within research and development at a university or in private industry, at a national laboratory, inspection, testing, and quality control, or other production-related jobs (physics); or as an environmental consultant or lawyer.

### Competency Profile

This curriculum is designed to prepare graduates of the program to:

- Transfer to and succeed in a baccalaureate program
- Ability to apply scientific principles and concepts including the scientific method to a variety of problems and situation.
- Knowledge of scientific methods accomplishments and how they affect technology, politics and society
- Demonstrate computer literacy in data manipulation, mining, and analysis
- Perform technical work in a typical laboratory while following appropriate safety procedures
- Effectively communicate results both orally and through written reports
- Demonstrate information literacy by appropriately vetting online information sources for truthfulness and scientific validity

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 62)

General Education	Major Requirements	Other Required Courses
ENGL 101 English Composition I	CHEM 102 General Inorganic Chemistry/Qual. Analysis	Transfer Electives
ENGL 102 English Composition II (or)	MATH 122 Calculus II	6
ENGL 104 Technical Writing	PHYS 212 Physics for Scientists & Engineers II	
COMM 101 Effective Speaking	General Physical Sciences** (or) Geology Tracks	<u>15</u>
Humanities & Arts Elective*		27
Mathematics Elective (MATH 121)		
Mathematics or Science Elective (PHYS 211)		
Science w/ a Laboratory Elective (CHEM 101)		
Social & Behavioral Science Elective		
First-Year-Seminar Elective (Rec: SCI 100)		
Wellness		
		29

\*Students are to select courses from the following: ART 181 or 182; ENGL 206; HUM 101, 115 or 201; MUS 104; PHIL 200; THTR 101; or a foreign language course.

\*\* Students are to select 15-credits from the courses listed in the General Physical Sciences Track.

**General Physical Sciences Track\*\***

CHEM 203 Organic Chemistry	4
CHEM 204 Organic Chemistry II	4
CPS 121 JAVA Programming	3
CPS 135 C Programming	3
CPS 161 Computer Science I	3
CPS 162 Computer Science II	3
GEOL 101 Physical Geology	4
GEOL 102 Historical Geology	4
GEOL 201 Environmental Geology	4
GIS 141 Introduction to GIS	3
GIS 165 Geospatial Programming	3
GIS 205 Data Acquisition & Remote Sensing	4
MATH 220 Linear Algebra	4
MATH 221 Calculus III	4
	<b>15</b>

**Geology Track**

GEOL 101 Physical Geology	4
GEOL 102 Historical Geology	4
GEOL 201 Environmental Geology	4
GIS 141 Introduction to Geospatial Technology	3
	<b>15</b>

**RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS**

Part-time students can complete this program by taking one or more courses each semester.

**General Physical Science Track**

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
ENGL 101	3	CHEM 102	4	COMM 101	3	PHYS 212	4
FYS Elective	1	ENGL 102 <b>or</b> 104	3	PHYS 211	4	Physical Science Track Electives	6
Mathematics Elective	4	Humanities/Arts Elective	3	Physical Science Track Electives	6	Social/Behavioral Science Elective	3
Science w/ a Lab Elective	4	MATH 122	4	Transfer Elective	3	Wellness	1
Transfer Elective	3	Physical Science Track Elective	3				

**Geology Track**

Fall Semester I		Spring Semester I		Fall Semester II		Spring Semester II	
ENGL 101	3	CHEM 102	4	COMM 101	3	GEOL 201	4
FYS Elective	1	ENGL 102 <b>or</b> 104	3	GEOL 102	4	PHYS 212	4
Science w/ a Lab Elective	4	GEOL 101	4	GIS 141	3	Social/Behavioral Science Elective	3
Mathematics Elective	4	MATH 122	4	Humanities/Arts Elective	3	Transfer Elective	3
Transfer Elective	3			Math/Science Elective	4	Wellness	1