

PHYSICAL SCIENCES DEPARTMENT

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Physical Sciences Program Description

The Dixie State College Physical Sciences department offers a variety of courses in Chemistry, Engineering, Geology, Geography, and Physics that allows students to better understand and appreciate the natural world and our place in it. Many of these courses fulfill the General Education Physical Science requirement for all students. Coursework in the Physical Sciences also fulfills prerequisites and requirements for students planning to pursue careers in medicine, dentistry, pharmacy, optometry, engineering, chiropractics, physical therapy, physician's assistant, veterinary medicine, nursing, dental hygiene and other fields.

Pre-Engineering Program Description

Pre-Engineering is a 70 credit degree program that prepares a student to complete the first two years of most bachelor's degree programs in engineering (e.g. Aerospace, Architectural, Biomedical, Chemical, Civil, Computer, Electrical, Environmental, Industrial, Mechanical, Petroleum, etc). With appropriate planning, Pre-Engineering coursework completed at DSC will transfer to all the Utah universities and most other universities with 4-year engineering degree programs. Each field of engineering requires different coursework. However, the first two years are similar in the courses required. Usually, the transfer student will need to take two or three courses not available at Dixie State College, but these are not pre-requisites to the last two years of most engineering programs. The student will have fulfilled his General Education requirements and thus will be on schedule for the last two years upon transfer.

Engineering is an exciting major in terms of professional career opportunities, job satisfaction, and compensation. The first two years of all engineering programs are filled with challenging Mathematics, Physics, Chemistry, and Engineering courses. Dixie State College is a great place to take your first two years because of its small class size, caring and knowledgeable professors, and a positive, friendly atmosphere.

Course Prefixes

- CHEM, ENGR, GEO, GEOG, PHYS, SCI

Degrees & Certificates

- Associate of Pre-Engineering (APE)

Associate of Pre-Engineering

70 credits

The Associate of Pre-Engineering degree has 4 basic components:

1. General Education & Institutional Requirements
2. Math and Science Requirements
3. Engineering Science Requirements
4. Elective Requirements

General Education & Institutional Requirements

All DSC General Education and Institutional requirements must be fulfilled. A previously earned degree **may** fulfill those requirements, but courses must be equivalent to DSC's minimum General Education standards in American Institutions, English, and Mathematics.

Institutional Requirement

Complete **one** of the following:

CIS 1200	Computer Literacy	3
CIS 1201	Computer Literacy Exam	0

General Education Requirements

Complete the following:

ENGL 1010	Intro to Writing	3
ENGL 2010	Intermediate Writing	3
LIB 1010	Information Literacy	1
Mathematics GE course		3-5
American Institutions GE course		3
Life Sciences GE course		3-5
Physical Sciences course		3-5
Laboratory Science GE course		0-1
Fine Arts GE course		3
Literature/Humanities GE course		3
Social & Behavioral Sciences GE course		3
Exploration GE course		3-5
Two (2) Global & Cultural Perspectives GE courses		0-6

Math and Science Requirements

Complete the following:

CHEM 1210/15	Principles of Chemistry I / Lab	4/1
MATH 1210	Calculus I	5
MATH 1220	Calculus II	4
MATH 2210	Multivariable Calculus	3
MATH 2270	Linear Algebra	3
MATH 2280	Differential Equations	3

PHYS 2210/15 Physics Scientists & Engineers I/Lab 4/1

Complete **one** of the following sets of courses:

CHEM 1220/25 Principles of Chemistry II / Lab 4/1

OR

PHYS 2220/25 Physics for Sci & Engineers II / Lab 4/1

Engineering Science Requirements

Complete the following:

ENGR 2010	Statics	3
ENGR 2030	Dynamics	3
ENGR 2140	Strength of Materials	3

Technical Elective Requirements

Complete the following:

- Elective courses in technical areas totaling at least **3 credits** as approved by Pre-Engineering Advisor

Graduation Requirements

1. Complete a minimum of 70 college-level credits (1000 and above).
2. Complete at least 20 lower-division credits at DSC for institutional residency.
3. Cumulative GPA 2.0 or higher.