

# LIBERAL ARTS AND EARTH AND MINERAL SCIENCES CONCURRENT DEGREE; LIBERAL ARTS AND ENGINEERING CONCURRENT DEGREE (ENGINEERING)

These programs require ten semesters of study, concurrently in the College of the Liberal Arts (during which the student completes 70 credits in General Education and Bachelor of Arts requirements and 33 to 37 basic engineering or science requirements), and in either the College of Earth and Mineral Sciences or the College of Engineering (during which the student completes the credits required in the selected major in Earth and Mineral Sciences or Engineering).

Upon completion of the program, the B.A. in General Arts and Sciences will be awarded by the College of the Liberal Arts and the B.S. by the College of Earth and Mineral Sciences or the College of Engineering. The majors available in the College of Earth and Mineral Sciences are:

- Environmental Systems Engineering
- Geosciences
- Mining Engineering
- Polymer Science
- Mineral Economics
- Petroleum and Natural Gas Engineering
- Ceramic Science and Engineering
- Metals Science and Engineering
- Meteorology

The majors available in the College of Engineering are:

- Aerospace
- Agricultural
- Chemical
- Civil
- Electrical
- Environmental
- Industrial and Management Systems
- Mechanical
- Nuclear Engineering
- Engineering Science<sup>1</sup>

Students are advised of the absolute necessity for scheduling classes in exact sequence during the first six semesters of Concurrent Degree study. It is imperative that students obtain, from the Liberal Arts Undergraduate Studies Office, 101 Sparks Building, a copy of the Concurrent Degree requirements worksheet that enumerates the specific course requirements for the two programs for semesters one through six.

<sup>1</sup> Enrollment in the Engineering Science program is limited to those students attaining an average of B or higher during their first six semesters and to those specially chosen by the College of Engineering

faculty on the basis of evidence that they will benefit from the advanced courses.

## Entrance to Major

To be eligible for this program, a student must file an application for entrance with the associate dean for undergraduate studies, College of the Liberal Arts, not later than the third semester. Entrance to the program requires that the student satisfy all regular requirements of the College of the Liberal Arts and the College of Earth and Mineral Sciences or the College of Engineering. In addition, special requirements may need to be satisfied when enrollment controls are imposed on programs in any of the colleges because of space limitations. Once a student has met all the requirements for entrance to this program, transfer from the College of the Liberal Arts to the College of Earth and Mineral Sciences or the College of Engineering, with enrollment in one of the majors listed, will be approved automatically at the end of the sixth semester if the student continues to make normal progress toward the concurrent degree and has maintained a cumulative average of 2.00 or higher. Students entering majors in the College of Engineering must complete the following courses with a grade of C or higher: CHEM 110 and CHEM 111, MATH 140, MATH 141, and PHYS 201, and meet the required cumulative grade-point average for the requested engineering major.

## Degree Requirements

Requirement	Credits
General Education	45
Bachelor of Arts Degree Requirements	24
Requirements for the Major	12
Earth and Mineral Sciences or Engineering Component	89-91

**15 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 6 credits of GQ courses and 9 credits of GN courses.**

**3 of the 24 credits for Bachelor of Arts Degree Requirements are included in the Requirements for the Major, General Education, or Electives and 0-12 credits are included in Electives if foreign language proficiency is demonstrated by examination.**

## Requirements for the Major

### Earth and Mineral Sciences or Engineering Component

Concurrent Degree candidates should consult the individual program requirements in the College of Engineering and the College of Earth and Mineral Sciences to ascertain which combinations of CHEM, E G, E MCH, MATH, and PHYS are required.

Code	Title	Credits
<b>Semesters One through Six</b>		
<i>Prescribed Courses</i>		
CHEM 111	Experimental Chemistry I	1
CHEM 113	Experimental Chemistry II	1
EMCH 211	Statics	3
EDSGN 10		1
EG 11		1
EMCH 212	Dynamics	3
MATH 220	Matrices	2-3

MATH 230	Calculus and Vector Analysis	4
MATH 250	Ordinary Differential Equations	3
PHYS 201		4
PHYS 202		4
<i>Additional Courses</i>		
PHYS 203		3-4
or PHYS 204		
Complete B.S. requirements <sup>1</sup>		3
<b>Semesters Seven through Ten</b>		
Credits required in the selected major in Earth and Mineral Sciences or Engineering 56-57		
<i>Supporting Courses and Related Areas</i>		
Select 3 credits from each of the following areas: arts, humanities, science/mathematics, social and behavioral sciences		12

<sup>1</sup> Concurrent Degree candidates should select a course in this category appropriate for the requirements for their program in either Earth and Mineral Sciences or Engineering.

## General Education

Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements (<https://bulletins.psu.edu/undergraduate/general-education/baccalaureate-degree-general-education-program/>) section of the Bulletin and consult your academic adviser.

The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

### Foundations (grade of C or better is required.)

- **Quantification (GQ):** 6 credits
- **Writing and Speaking (GWS):** 9 credits

### Knowledge Domains

- **Arts (GA):** 6 credits
- **Health and Wellness (GHW):** 3 credits
- **Humanities (GH):** 6 credits
- **Social and Behavioral Sciences (GS):** 6 credits
- **Natural Sciences (GN):** 9 credits

### Integrative Studies (may also complete a Knowledge Domain requirement)

- **Inter-Domain or Approved Linked Courses:** 6 credits

## University Degree Requirements

### First Year Engagement

All students enrolled in a college or the Division of Undergraduate Studies at University Park, and the World Campus are required to take 1 to 3 credits of the First-Year Seminar, as specified by their college First-Year Engagement Plan.

Other Penn State colleges and campuses may require the First-Year Seminar; colleges and campuses that do not require a First-Year Seminar provide students with a first-year engagement experience.

First-year baccalaureate students entering Penn State should consult their academic adviser for these requirements.

### Cultures Requirement

6 credits are required and may satisfy other requirements

- United States Cultures: 3 credits
- International Cultures: 3 credits

### Writing Across the Curriculum

3 credits required from the college of graduation and likely prescribed as part of major requirements.

### Total Minimum Credits

A minimum of 120 degree credits must be earned for a baccalaureate degree. The requirements for some programs may exceed 120 credits. Students should consult with their college or department adviser for information on specific credit requirements.

### Quality of Work

Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

### Limitations on Source and Time for Credit Acquisition

The college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy 83-80 (<http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#83-80>)). For more information, check the Suggested Academic Plan for your intended program.

## B.A. Degree Requirements

**Foreign Language** (0-12 credits): Student must attain 12th credit level of proficiency in one foreign language. See the Placement Policy for Penn State Foreign Language Courses (<https://bulletins.psu.edu/undergraduate/general-information/academic-information/advising-planning-degree-program/course-placements/placement-policy-world-language-courses/>).

**B.A. Fields** (9 credits): Humanities, Social and Behavioral Sciences, Arts, Foreign Languages, Natural Sciences, Quantification (may not be taken in the area of the student's primary major; foreign language credits in this category must be in a second foreign language or beyond the 12th credit level of proficiency in the first language)

**Other Cultures** (0-3 credits): Select 3 credits from approved list. Students may count courses in this category in order to meet other major, minor, elective, or General Education requirements, except for the General Education US/IL requirement.

## Academic Advising

The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy/>)

## University Park

### Ryan Family Student Center

14 Deike Building  
N. Burrowes Street  
University Park, PA 16802  
814-863-2751  
AssocDeanUED@ems.psu.edu

### Engineering Advising Center

208 Hammond Building  
University Park, PA 16802  
814-863-1033  
adviser@enr.psu.edu

### Liberal Arts Academic Advising

814-865-2545  
Use the Liberal Arts Majors and Minors web page (<https://www.la.psu.edu/current-students/undergraduate-students/education/majors-and-minors/>) to see the contact information for the specific adviser(s) of this program

## Contact

### University Park

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