

ENERGY BUSINESS AND FINANCE, B.S.

Begin Campus: Any Penn State Campus

End Campus: University Park

Degree Requirements

For the Bachelor of Science degree in Energy Business and Finance, a minimum of 120 credits is required:

Requirement	Credits
General Education	45
Electives	0-12
Requirements for the Major	90-102

25-27 of the 45 credits of General Education are included in the Requirements for the Major. This includes: 4-6 credits of GN courses, 9 credits of GWS courses, 6 credits of GQ courses, and 6 credits of GS courses.

Requirements for the Major

To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44 (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#82-44>).

Common Requirements for the Major (All Options)

Code	Title	Credits
Prescribed Courses		
ACCTG 211	Financial and Managerial Accounting for Decision Making	4
EBF 473	Risk Management in Energy Industries	3
ECON 104	Introductory Macroeconomic Analysis and Policy	3
IB 303	International Business Operations	3
<i>Prescribed Courses: Require a grade of C or better</i>		
EBF 200	Introduction to Energy and Earth Sciences Economics	3
EBF 301	Global Finance for the Earth, Energy, and Materials Industries	3
EBF 304W	Management for the Energy and Resource Industries	3
EBF 401	Strategic Corporate Finance for the Earth, Energy, and Materials Industries	3
ECON 102	Introductory Microeconomic Analysis and Policy	3
ECON 302	Intermediate Microeconomic Analysis	3
EME 460	Geo-resource Evaluation and Investment Analysis	3
MATH 140	Calculus With Analytic Geometry I	4
MATH 141	Calculus with Analytic Geometry II	4
RM 302	Risk and Insurance	3
Additional Courses		
CAS 100	Effective Speech	3
or EMSC 100S	Earth and Mineral Sciences First-Year Seminar	
ENGL 15	Rhetoric and Composition	3
or ENGL 30H	Honors Rhetoric and Composition	

ENGL 202C	Effective Writing: Technical Writing	3
or ENGL 202D	Effective Writing: Business Writing	
Select 3 credits of the following:		3
CMPSC 101	Introduction to Programming	
CMPSC 200	Programming for Engineers with MATLAB	
CMPSC 201	Programming for Engineers with C++	
CMPSC 202		
Select 3 credits of the following:		3
BA 243	Social, Legal, and Ethical Environment of Business	
BLAW 243	Legal Environment of Business	
ERM 411	Legal Aspects of Resource Management	
<i>Additional Courses: Require a grade of C or better</i>		
EBF 483	Introduction to Electricity Markets	3
or EBF 484	Energy Economics	
Select 3 credits of the following:		3
EBF 472	Quantitative Analysis in Earth Sciences	
STAT 301		
STAT 401	Experimental Methods	
Requirements for the Option		
Select an option		24-36

Requirements for the Option Energy Land Management Option (25 credits)

Code	Title	Credits
Prescribed Courses		
EBF 402	Energy Law and Contracts	3
GEOG 363	Geographic Information Systems	3
<i>Prescribed Courses: Require a grade of C or better</i>		
GEOG 160	Mapping Our Changing World	3
GEOSC 1	Physical Geology	3
Additional Courses		
EBF 410	Petroleum and Natural Gas Operations	3
or PNG 405	Rock and Fluid Properties	
EBF 411	Petroleum and Natural Gas Geology for Land Professionals	3
or GEOSC 454	Geology of Oil and Gas	
<i>Additional Courses: Require a grade of C or better</i>		
PHYS 211	General Physics: Mechanics	4
or PHYS 250	Introductory Physics I	
Select 3 credits of the following:		3
GEOG 361	Cartography—Maps and Map Construction	
GEOG 362	Image Analysis	
GEOG 364	Spatial Analysis	
GEOG 463	Geospatial Information Management	

General Option (24-36 credits)

Code	Title	Credits
Additional Courses		
Select 6-7 credits of the following:		6-7
CHEM 110	Chemical Principles I	
EARTH 100	Environment Earth	
EARTH 101	Natural Disasters: Hollywood vs. Reality	
EARTH 103N	Earth in the Future: Predicting Climate Change and Its Impacts Over the Next Century	

EARTH 111N	Water: Science and Society
EARTH 150	Dinosaur Extinctions and Other Controversies
EGEE 101	Energy and the Environment
EGEE 102	Energy Conservation for Environmental Protection
EGEE 120	Oil: International Evolution
GEOG 110	Climates of the World
GEOG 115	Landforms of the World
GEOSC 2	Historical Geology
GEOSC 10	Geology of the National Parks
GEOSC 20	Planet Earth
GEOSC 21	Earth and Life: Origin and Evolution
GEOSC 40	The Sea Around Us
MATSE 81	Materials in Today's World
METEO 3	Weather Revealed: Introductory Meteorology
METEO 101	Understanding Weather Forecasting
PHYS 211	General Physics: Mechanics
	or PHYS 250 Introductory Physics I
Select 3 credits of the following:	3
CED 404	Community, Environment and Development Research Methods
CED 429	Natural Resource Economics
CED 431	
EBF 411	Petroleum and Natural Gas Geology for Land Professionals
EBF 483	Introduction to Electricity Markets (if not selected for requirement for the major)
ECON 490	
EME 301	Thermodynamics in Energy and Mineral Engineering
GEOG 424	Geography of the Global Economy
GEOG 430	Human Use of Environment
GEOG 431	Geography of Water Resources
GEOG 444	Resource Governance in Africa
GEOG 493	Service Learning
GEOSC 402Y	Natural Disasters
GEOSC 454	Geology of Oil and Gas
METEO 473	Application of Computers to Meteorology
PLSC 490	Policy Making and Evaluation
Supporting Courses and Related Areas	
Select one of the following:	15-26
Select from one of the following minors: Arabic, Chinese, Civic and Community Engagement, Earth Systems, Energy Engineering, Entrepreneurship and Innovation, Environmental Resource Management, Environmental Systems Engineering, Geographic Information Science, Geosciences, Mathematics, Meteorology, Mining Engineering, Petroleum and Natural Gas Engineering, Russian, Spanish, Statistics, Watersheds and Water Resources or a relevant minor selected in consultation with an adviser	
A concurrent major in any subject	
A 15 credit semester-long education abroad program approved by the professor in charge of the EBF major	
A minor in Asian Studies together with an approved EBF summer term abroad experience	

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 and Inter-Domain courses do not meet this requirement.)

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

Breadth in the Knowledge Domains (Inter-Domain courses do not meet this requirement.)

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

Integrative Studies

- **Inter-Domain Courses (Inter-Domain):** 6 credits

Exploration

- **GN**, may be completed with Inter-Domain courses: 3 credits
- **GA, GH, GN, GS, Inter-Domain courses.** This may include 3 credits of World Language course work beyond the 12th credit level or the requirements for the student's degree program, whichever is higher: 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 (<https://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.