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:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>45</td>
</tr>
<tr>
<td>Electives</td>
<td>0-12</td>
</tr>
<tr>
<td>Requirements for the Major</td>
<td>90-102</td>
</tr>
</tbody>
</table>

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.

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.

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 (http://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)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCTG 211</td>
<td>Financial and Managerial Accounting for Decision Making</td>
<td>4</td>
</tr>
<tr>
<td>EBF 473</td>
<td>Risk Management in Energy Industries</td>
<td>3</td>
</tr>
<tr>
<td>ECON 104</td>
<td>Introductory Macroeconomic Analysis and Policy</td>
<td>3</td>
</tr>
<tr>
<td>IB 303</td>
<td>International Business Operations</td>
<td>3</td>
</tr>
</tbody>
</table>

Prescribed Courses: Require a grade of C or better

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBF 200</td>
<td>Introduction to Energy and Earth Sciences Economics</td>
<td>3</td>
</tr>
<tr>
<td>EBF 301</td>
<td>Global Finance for the Earth, Energy, and Materials Industries</td>
<td>3</td>
</tr>
<tr>
<td>EBF 304W</td>
<td>Global Management for the Earth, Energy, and Materials Industries</td>
<td>3</td>
</tr>
<tr>
<td>EBF 401</td>
<td>Strategic Corporate Finance for the Earth, Energy, and Materials Industries</td>
<td>3</td>
</tr>
</tbody>
</table>
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:
- 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:
- BA 243 Social, Legal, and Ethical Environment of Business
- BLAW 243 Legal Environment of Business
- ERM 411 Legal Aspects of Resource Management

Additional Courses: Require a grade of C or better
EBF 483 Introduction to Electricity Markets 3
or EBF 484 Energy Economics

Select 3 credits of the following:
- 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)

Prescribed Courses
- EBF 402 Energy Law and Contracts 3
- GEOG 363 Geographic Information Systems 3

Prescribed Courses: Require a grade of C or better
- GEOG 160 Mapping Our Changing World 3
- GEOG 110 Climates of the World 3
- GEOG 115 Landforms of the World 3
- GEOSC 2 Historical Geology 3
- GEOSC 10 Geology of the National Parks 3
- GEOSC 20 Planet Earth 3
- GEOSC 21 Earth and Life: Origin and Evolution 3
- GEOSC 40 The Sea Around Us 3
- MATSE 81 Materials in Today's World 3
- METEO 3 Weather Revealed: Introductory Meteorology 3
- METEO 101 Understanding Weather Forecasting 3
- PHYS 211 General Physics: Mechanics 3
or PHYS 250 Introductory Physics I 3

Select 3 credits of the following:
- CED 404 Community, Environment and Development Research Methods 3
- CED 429 Natural Resource Economics 3
- CED 431
- EBF 411 Petroleum and Natural Gas Geology for Land Professionals 3
- EBF 483 Introduction to Electricity Markets (if not selected for requirement for the major) 3
- ECON 490
- EME 301 Thermodynamics in Energy and Mineral Engineering 3
- GEOG 424 Geography of the Global Economy 3
- GEOG 430 Human Use of Environment 3
- GEOG 431 Geography of Water Resources 3
- GEOG 444 African Resources and Development 3
- GEOG 493 Service Learning 3
- GEOSC 402Y Natural Disasters 3
- GEOSC 454 Geology of Oil and Gas 3
- METEO 473 Application of Computers to Meteorology 3
- PLSC 490 Policy Making and Evaluation 3

Supporting Courses and Related Areas
Select one of the following: 15-26
- GEOG 364 Spatial Analysis 3
- GEOG 463 Geospatial Information Management 3

General Option (24-36 credits)

Code Title Credits
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 111 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 C...
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