

# ENERGY AND SUSTAINABILITY POLICY, B.S.

**Begin Campus:** World Campus

**End Campus:** World Campus

## Program Description

The Bachelor of Science degree in Energy and Sustainability Policy (ESP) is an interdisciplinary program, preparing students for careers in the evolving policy sector of the energy and sustainability fields, especially where strong science, business, and analytical skills are required. The B.S. program prescribes coursework in areas including energy sources, uses, and technologies; sustainability principles and practices; climate change; and, policy development and analysis. Students select additional courses in energy and science; analysis and technology; business and management; and, ethics, leadership and communications. ESP B.S. educational objectives emphasize five areas of student competency:

1. energy industry knowledge
2. a sustainability ethic
3. analytical skills
4. communication skills
5. global perspective

The ESP B.S. program prepares students with knowledge and skills valued by many types of organizations, including commercial firms, government agencies, public utilities, regulatory bodies, nonprofit and advocacy groups, and energy and trade organizations.

## What is Energy and Sustainability Policy?

Modern society is faced with the challenge—and opportunity—of balancing global energy demand with availability. Accomplishing that goal while staying within the planet's ecological boundaries is a critical task. In the global shift toward renewable energies, Energy and Sustainability Policy experts are leading that charge. Graduates work in all areas of the energy sector, including government, NGOs, and private firms. Our global economy relies heavily on an abundant and consistent supply of energy and these experts will see that transition through, relying on their ability to research, analyze, and communicate diverse information about emerging global trends in energy policy, technologies, and economics.

## You Might Like This Program If...

- You are interested in the energy industry, sustainability, and public policy, with a global perspective.
- You are looking for an online program to advance an existing career or begin a new one.
- You are passionate about energy and the environment and want to be a part of the path toward a sustainable future.

## Entrance to Major

In order to be eligible for entrance to this major, a student must:

1. attain at least a C (2.00) cumulative grade-point average for all courses taken at the University; and

2. have at least third-semester classification (<https://www.registrar.psu.edu/enrollment/semester-classification.cfm>).

READ SENATE POLICY 37-30: ENTRANCE TO AND CHANGES IN MAJOR PROGRAMS OF STUDY (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/37-00-entrance-to-a-college-or-major/>)

## Degree Requirements

**For the Bachelor of Science degree in Energy and Sustainability Policy, a minimum of 120 credits is required:**

Requirement	Credits
General Education	45
Electives	11
Requirements for the Major	89

**25 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 6 credits of GN courses, 9 credits of GWS courses, 4 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>).

Code	Title	Credits
<b>Prescribed Courses</b>		
CAS 100	Effective Speech	3
ECON 102	Introductory Microeconomic Analysis and Policy	3
ECON 104	Introductory Macroeconomic Analysis and Policy	3
EGEE 120	Oil: International Evolution	3
EGEE 401	Energy in a Changing World	3
EMSC 240N	Energy and Sustainability in Contemporary Culture	3
ENGL 15	Rhetoric and Composition	3
ENGL 202D	Effective Writing: Business Writing	3
PLSC 1	American Politics: Principles, Processes and Powers	3
<i>Prescribed Courses: Require a grade of C or better</i>		
EBF 200	Introduction to Energy and Earth Sciences Economics	3
EGEE 102	Energy Conservation for Environmental Protection	3
EME/GEORG 432	Energy Policy	3
EME 444	Global Energy Enterprise	3
EME 466	Energy and Sustainability in Society	3
EMSC 302	Orientation to Energy and Sustainability Policy	1
GEORG 30N	Environment and Society in a Changing World	3
GEORG 438W	Human Dimensions of Global Warming	3
GEORG 469	Energy Industry Applications of GIS	3
METEO 469	From Meteorology to Mitigation: Understanding Global Warming	3
PLSC 490	Policy Making and Evaluation	3
STAT 200	Elementary Statistics	4
<b>Additional Courses</b>		
EGEE 299	Foreign Studies	3

or EGEE 495	Internship	
METEO 3	Weather Revealed: Introductory Meteorology	3
or METEO 101	Understanding Weather Forecasting	
<b>Supporting Courses and Related Areas</b>		
Select 6 credits in ENERGY AND SCIENCE from an approved list or in consultation with adviser		6
Select 6 credits in ANALYSIS AND TECHNOLOGY from an approved list or in consultation with adviser		6
Select 6 credits in BUSINESS AND MANAGEMENT from an approved list or in consultation with adviser		6
Select 3 credits in ETHICS, LEADERSHIP AND COMMUNICATION from an approved list or in consultation with adviser		3

## 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.

## Program Learning Objectives

- **Business and Technical Knowledge:** Graduates will have broad and accurate business and technical knowledge of all major sectors of the energy industry, including conventional, alternative/renewable, and emerging technologies.
- **Communicating Science and Policy:** Graduates will be able to effectively explain to diverse audiences—orally, in writing, and through maps and other information graphics—the intended and unintended consequences of energy policy and regulation.
- **Global Systems - Energy, Society, and Environment:** Graduates will be able to describe how global systems of energy production, distribution and consumption are linked with social and environmental systems.
- **Legislative Processes and Actors:** Graduates will understand the legislative processes within state, federal and international governments, including the roles of regulators, non-governmental organizations and other advocacy groups.
- **Policy and Regulations:** Graduates will be able to find, read, understand, interpret and synthesize evolving energy policy and regulations.
- **Translating Theory into Practice:** Graduates will be able to bridge the gap between theory and practice, by applying the knowledge acquired through formal learning to real-world settings.

## 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 and World Campus

### ESP Program Office

415 Earth & Engineering Sciences Building  
University Park, PA 16802  
855-886-1951  
[info@esp.psu.edu](mailto:info@esp.psu.edu)

## Suggested Academic Plan

The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2023-24 academic year. To access previous years' suggested academic plans, please visit the archive (<https://bulletins.psu.edu/undergraduate/archive/>) to view the appropriate Undergraduate Bulletin edition (*Note: the archive only contains suggested academic plans beginning with the 2018-19 edition of the Undergraduate Bulletin*).

## Energy and Sustainability Policy, B.S. at World Campus

The course series listed below provides **only one** of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an **Academic Requirements** or **What If** report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year	Credits
Supporting Course - Analysis & Technology	3
EMSC 302*	1
PLSC 1 <sup>††</sup>	3
GEOG 30N <sup>**†</sup>	3
General Education Course (GA)	3
EGEE 120 <sup>††</sup>	3
Elective (EARTH 10 recommended)	1
EGEE 102 <sup>**†</sup>	3
METEO 3 <sup>†</sup>	3
ENGL 15 <sup>††</sup>	3
General Education Course (GQ)	3
	<b>29</b>
Second Year	Credits
PLSC 490*	3

EBF 200 <sup>**†</sup>	3
GEOG 469*	3
General Education Course (GH)	3
EMSC 240N	3
ECON 102 <sup>††</sup>	3
ENGL 202D <sup>††</sup>	3
GEOG 432*	3
Supporting Course - Energy & Science	3
CAS 100 <sup>††</sup>	3
ECON 104 <sup>††</sup>	3
	<b>33</b>
Third Year	Credits
EME 444*	3
Supporting Course - Business & Management	3
EGEE 401	3
STAT 200 <sup>**††</sup>	4
General Education Course (GA or GH)	3
ECON 104	3
General Education Course (GN)	3
EGEE 299 or 495	3
GEOG 438W*	3
Supporting Course - Business & Management	3
	<b>31</b>
Fourth Year	Credits
METEO 469*	3
EME 466*	3
General Education Course (GHW)	3
Supporting Course - Ethics, Leadership, & Communications	3
Supporting Course - Energy & Science	3
Elective	3
Elective	3
Elective	3
Supporting Course - Analysis & Technology	3
	<b>27</b>
<b>Total Credits 120</b>	

\* Course requires a grade of C or better for the major

‡ Course requires a grade of C or better for General Education

# Course is an Entrance to Major requirement

† Course satisfies General Education and degree requirement

<sup>1</sup> Only two courses from this list can satisfy General Education and degree requirements: EBF 200, ECON 102, ECON 104, EGEE 120, GEOG 30N, PLSC 1.

### University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy Cultural Diversity Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of 'C' or better.

#### **Advising Notes:**

Students should work closely with their academic adviser in planning course sequencing in the ESPBS major. While the Bulletin only permits the listing of courses as "years" (ex: first-year, second-year, etc.), ESP prefers to discuss the courses in this way: Orientation Experience (EMSC 302, 1 credit, listed in the First-Year); Stage 1 -- Build Foundations (the remaining courses listed in First-Year); Stage 2 -- Formulate Understanding (courses listed in Second-Year); Stage 3 -- Generate Expertise (courses listed in Third-Year); Stage 4 -- Culminate Experience (the courses listed in Fourth-Year); and Capstone Experience (EME 466, 3 credits, the last course listed in Fourth-Year).

## **Career Paths**

Students in the Bachelor of Science in Energy and Sustainability Policy degree program can acquire knowledge of renewable and conventional energy use, and its environmental implications, while gaining valuable analytical and communication skills. Topics include energy supply, demand, and environmental impact; sustainability management; and foreign and domestic energy and sustainability policy. Graduates can be prepared for careers in the rapidly evolving energy and sustainability policy sector, especially where strong science, business, and analytical skills are required.

## **Careers**

As a graduate of the program you may work with a variety of organizations, advocacy groups, commercial firms, or regulatory bodies in a range of staff, management and leaderships positions related to energy project development; energy policy planning, analysis, and implementation; energy efficiency and waste reduction initiatives; environmental assessments; regulatory compliance; stakeholder communications and more.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES OF THE ENERGY AND SUSTAINABILITY POLICY PROGRAM (<https://esp.e-education.psu.edu/jobplanning/>)

## **Opportunities for Graduate Studies**

The Bachelor of Science in Energy and Sustainability Policy degree program is an interdisciplinary program designed to examine crucial issues facing our twenty-first century society, including climate change, economic stability and energy resource security. Graduates may pursue advanced degrees leading to careers in education, law, business administration, and many other related areas, including technical fields.

MORE INFORMATION ABOUT OPPORTUNITIES FOR GRADUATE STUDIES (<https://www.worldcampus.psu.edu/degrees-and-certificates/penn-state-online-renewable-energy-and-sustainability-systems-masters-degree/#request-information>)

## **Contact University Park**

JOHN AND WILLIE LEONE FAMILY DEPARTMENT OF ENERGY AND MINERAL ENGINEERING  
415 Earth & Engineering Sciences Building  
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## **World Campus**

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<https://www.worldcampus.psu.edu/degrees-and-certificates/penn-state-online-energy-and-sustainability-policy-bachelor-of-science-degree>  
(<https://www.worldcampus.psu.edu/degrees-and-certificates/penn-state-online-energy-and-sustainability-policy-bachelor-of-science-degree/>)