

Bachelor of Science  
Energy and Environmental Policy

ENEP Undergraduate Handbook 2016—2017

---

Energy and Environmental Policy Program  
278 Graham Hall  
University of Delaware  
<http://ceep.udel.edu> (Temporary home)

## TABLE OF CONTENTS

<b>WELCOME TO THE ENEP-BS DEGREE PROGRAM</b> .....	<b>1</b>
An Interdisciplinary, Intercollegiate Degree.....	1
Choose Your Career Path.....	1
Degree Concentrations .....	2
Energy, Environment and Society (EES) .....	2
Energy, Science and Technology (EST).....	2
Energy, Economics and Public Policy (EEP) .....	2
<b>ENEP-BS CORE FACULTY</b> .....	<b>ERROR! BOOKMARK NOT DEFINED.</b>
<b>ENEP-BS DEGREE REQUIREMENTS</b> .....	<b>5</b>
University Requirements .....	5
Breadth Requirements .....	5
Major Requirements.....	6
Concentration-Specific Courses.....	7
<b>Energy, Environment and Society (EES)</b> .....	7
<b>Energy, Science and Technology (EST)</b> .....	9
<b>Energy, Economics and Public Policy (EEP)</b> .....	11
<b>ENEP COURSE DESCRIPTIONS</b> .....	<b>144</b>
ENEP 117 Science, Society and Energy.....	15
ENEP 250 Introduction to Energy Policy - Also fulfills the “Social and Behavioral Sciences” Breadth Requirement .....	15
ENEP 420 Water Resources Management.....	15
ENEP 364 Research Internship .....	15
ENEP 366 Independent Study .....	15
ENEP 402 Electricity Policy & Planning .....	16
ENEP 410 Environmental Sustainability: Economic and Policy Analysis - Also fulfills the “Social and Behavioral Sciences” Breadth Requirement and the Second Writing Requirement .....	16
ENEP/ENWC 413 Wildlife Policy and Administration.....	16
ENEP 425 Energy Policy and Administration - Also fulfills the “Social and Behavioral Sciences” Breadth Requirement and the Second Writing Requirement.....	16
ENEP 426 Climate Change Policy - Also fulfills the Second Writing Requirement. A request has been made for this course to fulfill the “Social and Behavioral Sciences Breadth Requirement” .....	17
ENEP 427 Sustainable Energy: Economics and Policy Analysis - Also fulfills the “Social and Behavioral Sciences” Breadth Requirement and the Second Writing Requirement .....	17
ENEP 466 Special Problem .....	17
ENEP 468 Research in Energy and Environment - Also fulfills the Second Writing Requirement .....	17
ENEP 470 Readings in Energy and Environment - Also fulfills the Second Writing Requirement .....	17

ENEP 472 Senior Thesis – Also fulfills the Second Writing Requirement .....	18
Course Substitution Form .....	18
Tutorial Course Registration (ENEP 466, 468 and 470) .....	18
Preparing for Your Internship (ENEP 364) .....	18
Internship Course Registration (ENEP 364).....	18
Preparing ENEP Majors to Design, Conduct and Write Research Papers .....	18
Preparing and Defending Your ENEP 472 Paper .....	18
Senior Thesis Registration (ENEP 472) .....	19
Course Substitution Form .....	200
Undergraduate Tutorial Course Registration Form .....	21
Research Internship Guidelines .....	222
Internship Paper Guidelines.....	23
Internship Registration Form (ENEP 364).....	24
Preparing ENEP Majors to Design, Conduct and Write Research Papers .....	25
Preparing and Defending Your ENEP 472 Senior Thesis .....	29
Senior Thesis Registration Form (ENEP472).....	31
<b>PLAN OF STUDY: GENERAL.....</b>	<b>32</b>
<b>PLAN OF STUDY: SPECIFICS.....</b>	<b>33</b>
ENERGY, ENVIRONMENT AND SOCIETY (EES).....	33
ENERGY, SCIENCE AND TECHNOLOGY (EST) .....	35
ENERGY, ECONOMICS AND PUBLIC POLICY (EEP).....	37
Example Plans of Study for Each Concentration .....	39
<b>Energy, Environment and Society (EES) .....</b>	<b>39</b>
<b>Energy, Science and Technology (EST) .....</b>	<b>40</b>
<b>Energy, Economics and Public Policy (EEP) .....</b>	<b>41</b>
<b>COURSE REQUIREMENTS WORKSHEET.....</b>	<b>42</b>
Energy, Environment and Society (EES) .....	42
Energy, Science and Technology (EST) .....	43
Energy, Economics and Public Policy (EEP) .....	44
<b>BREADTH REQUIREMENTS .....</b>	<b>45</b>
Creative Arts and Humanities .....	45
History and Cultural Change .....	45
Social and Behavioral Sciences.....	45
Mathematics, Natural Sciences, and Technology .....	45
<b>STUDENT LIFE .....</b>	<b>46</b>
ENEP Undergraduate Council .....	46
Points of contact: .....	46
Meeting with Your Advisor .....	46
Registering for Classes .....	46
Campus Services.....	47
Office of Academic Enrichment.....	47
University Writing Center .....	47

Career Services Center..... 47  
Office for International Students and Scholars (OISS)..... 48  
Around UD and Newark ..... 48  
Health Care on Campus..... 49  
UD Electronic Communications & Administration ..... 49

## **WELCOME TO THE ENEP-BS DEGREE PROGRAM**

### **An Interdisciplinary, Intercollegiate Degree**

The undergraduate Baccalaureate of Science in Energy and Environmental Policy (ENEP-BS) is an interdisciplinary degree offered with the support of 5 Colleges of the University of Delaware. It is part of the College of Arts and Sciences. The ENEP-BS equips students for careers in energy and environmental fields through courses focused on knowledge advancement and research experiences to develop competitive skills for participation in this fast-growing field.

The ENEP-BS degree, although independently offered, builds upon the collaboration with the Center for Energy and Environmental Policy (CEEP) in energy and environmental policy analysis and development. Established in 1980, CEEP offered the nation's first interdisciplinary graduate degrees in energy and environmental policy, while also directing numerous research projects in collaboration with local, state, national, international and non-governmental partner organizations, and pressing for the integration of social justice in energy and environmental policy development by engaging academic and professional discourses.

The ENEP-BS degree fits within this context of rigorous academic studies, praxis in the analysis and development of energy and environmental policies through coordination with partner organizations and governments, and the wider dissemination of knowledge about the need for the consideration of equitable futures in the analysis and development of energy and environmental policies.

### **Choose Your Career Path**

Students who graduate with an ENEP-BS degree are prepared for rewarding academic or professional careers in renewable energy, environmental protection, sustainable development, climate change policy and green jobs. Careers include energy and environmental planning, policy analysis, management and administration, and research in the public, private and non-profit sectors. Graduates of the program will be qualified to assume positions in local and national governments, international agencies, research and policy institutions, consulting firms, energy utilities, and corporate departments with responsibilities in energy and environmental matters. Energy and environmental policy is a burgeoning field with numerous career opportunities.

## **Degree Concentrations**

Our choice of degree concentrations enables students to choose an approach toward energy and environmental policy that suits their own career desires.

Energy, Environment and Society (EES) through this concentration, students prepare for careers in local, national or international energy/environmental policy analysis and planning, sustainability research, and climate change scenario analysis. Coursework integrates the social sciences, economics, statistical analysis, science and technology for students to develop a broad interdisciplinary understanding of the challenges and proposed solutions for major environmental and energy challenges, including climate change, the transitions to a clean energy economy, and the promotion of ecological justice.

Energy, Science and Technology (EST) through this concentration, students prepare for careers in sustainable energy technology development, policy analysis and planning. Coursework bridges scientific and technological knowledge of sustainable energy with the policies that influence energy technology design, market infiltration and consumer choice to analyze and assess sustainable and renewable energy technology options.

Energy, Economics and Public Policy (EEP) through this concentration, students prepare for careers in sustainable energy economics, environmental economics, and Utility regulatory analysis. Coursework emphasizes public policy and economics approaches to public and private sector sustainable energy development and environmental protection.

## ENEP-BS CORE FACULTY



Dr. S Ismat Shah, Director ENEP Program

Professor of Materials Science & Engineering

Physics & Astronomy

Office: 201 DuPont Hall 276 Graham Hall, Office Phone: 831-1618

Email: [ismat@udel.edu](mailto:ismat@udel.edu)



Dr. Lawrence Agbemabiese

Research Associate Professor

Center for Energy and Environmental Policy

Office: 272 Graham Hall Office Phone: 831-3623

Email: [agbe@udel.edu](mailto:agbe@udel.edu)



Dr. Saleem Ali

Blue and Gold Distinguished Professor of Energy and the Environment

Professor of Geography and Energy and Environmental Policy

Office: 220 Pearson Hall Phone: 831-0871

Email: [saleem@udel.edu](mailto:saleem@udel.edu)



Dr. John Byrne

Director of the Center for Energy and Environmental Policy

Distinguished Professor of Energy and Climate Policy

Office: 278 Graham Hall Office Phone: 831-8405

Email: [jbyrne@udel.edu](mailto:jbyrne@udel.edu)



Dr. Biliana Cicin-Sain

Director, Gerard J. Mangone Center for Marine Policy Professor of Marine Policy, School of Marine Science and Policy College of Earth, Ocean, and Environment, University of Delaware

301B Robinson Hall, Phone: 831-8086

Email: [bcsc@udel.edu](mailto:bcsc@udel.edu)



Dr. Lado Kurdgelashvili  
Research Assistant Professor  
Center for Energy and Environmental Policy  
Office: 274 Graham Hall    Office Phone: 831-3232  
Email: [ladokurd@udel.edu](mailto:ladokurd@udel.edu)



Dr. William Latham  
Director, Center for Applied Business and Economic Research  
Associate Professor of Economics  
Office: 316B Purnell Hall    Office Phone: 831-6846  
Email: [latham@udel.edu](mailto:latham@udel.edu)



Dr. Raymond Scattone  
Research Assistant Professor  
Center for Energy and Environmental Policy  
Office: 274 Graham Hall    Office Phone: 831-3232  
Email: [rayscatt@udel.edu](mailto:rayscatt@udel.edu)



Dr. Subodh Wagle  
Research Associate Professor  
Center for Energy and Environmental Policy  
Office: 272 Graham Hall    Office Phone: 831-3623  
Email: [swagle@udel.edu](mailto:swagle@udel.edu)



## **ENEP-BS DEGREE REQUIREMENTS**

In order to fulfill the requirements for graduation, students must successfully complete 125 credit hours that fulfill university, major, concentration-specific course requirements and electives, and must maintain a 2.0 grade point average (GPA). These credit hours include a student internship and senior thesis.

### **University Requirements**

The University of Delaware requires all students to complete the following 10 credit hours of courses:

ENGL 110 Seminar in Composition (3 credits): Prepares students for writing college essays, including essay and thesis statement development, grammar, and scholarship. This course is taught every semester.

First Year Experience: ENEP 117 Science, Society and Energy (1 credit): For course description, see page 15.

Discovery Learning Experience: We recommend ENEP 364 Research Internship (3 credits) to fulfill the DLE requirement. For course description, see page 15.

Multicultural Requirement (3 credits): Introduces students to international perspectives and cultural, ethnic, and religious diversity so that students may live and work more effectively in an increasingly global society. Numerous courses are offered that meet this multicultural requirement, some of which may also be used to fulfill breadth requirements. A list of these courses is searchable in the UD online course catalog.

### **College of Arts and Science Requirements**

Please see <http://www.cas.udel.edu/uas/academic-planning/Pages/detailed-requirement-explanation.aspx>

### **Breadth Requirements**

All majors have Breadth Requirements in order to develop well-rounded scholars who are familiar with diverse fields and perspectives. The ENEP major has the following distribution of 31 credit hours of Breadth Requirements (essentially 19 credits in addition to the University Breadth Requirements):

- Creative Arts and Humanities (9 credits)
- History and Cultural Change (6 credits)
- Social and Behavioral Sciences (6 credits)
- Mathematics, Natural Sciences, and Technology (10 credits)

If chosen carefully, up to 3 credits from each of the University Breadth Requirement categories may be used to simultaneously satisfy the College of Arts and Sciences Breadth Requirements for this major.

Of the 31 credits, 3 credits may be used to simultaneously satisfy the University Multicultural Requirement (recommended for timely progress toward degree completion.)

Some of the qualifying breadth courses also fulfill requirements for the major, enabling students to meet two requirements with the same course. Doing so reserves credits towards the 125 required to graduate that students can fulfill with electives. When a student uses one course to fulfill two requirements, this does not reduce the total of 125 credits needed to graduate in the major.

Electives in the major or non-major electives are taken to assure completion of the 125 credit requirement. All courses must be passed with a minimum grade of C-.

Note: The 31 credit hours of Breadth Requirements specified by the ENEP Program includes the 12-credit minimum required by University Policy. ENEP majors do not need to take any Breadth Requirement courses beyond the 31 credits specified above.

### **Major Requirements**

The ENEP-BS degree requires all students in any concentration to complete a 3-credit second writing course, 15 credit hours of core curriculum courses, and 12 credit hours of capstone courses and a Senior Thesis for 6-credits.

Foreign Language Requirement: There is no major foreign language requirement. The EES and EST concentrations include the opportunity to count up to 8 credits of foreign language instruction to fulfill the concentration requirement.

Minimum Mathematics Requirement: MATH 114 is required for EEP and EES concentrations and MATH 241 is required for EST concentration.

Second Writing Course (3 credits): Provides students with the opportunity to develop their writing skills through guided writing exercises. This course must be taken after completion of 60 credit hours. Appropriate writing courses are designated in the semester's course listings; several ENEP courses fulfill this requirement, including:

- ENEP 410 Environmental Sustainability: Economic and Policy Analysis (Fall) (3 credits)
- ENEP 425 Energy Policy and Administration (Fall) (3 credits)
- ENEP 426 Climate Change Policy (Spring) (3 credits)
- ENEP 427 Sustainable Energy: Economics and Policy Analysis (Spring) (3 credits)
- ENEP 468 Research in Energy and Environment (Fall) (3 credits)
- ENEP 470 Readings in Energy and Environment (Fall) (3 credits)
- ENEP 472 Senior Thesis (Fall) (6 credits)

Core Curriculum Courses (15 credits): these fundamental courses offer the foundation for energy and environmental policy study. These courses include:

- ENEP 250 Introduction to Energy Policy (Spring) (3 credits) **Also fulfills the "Social and Behavioral Sciences" Breadth Requirement**

PHYS 143 Energy Technology and Society (Fall and Spring) (3 credits) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**

ECON 101 Introduction to Microeconomics (Fall, Winter and Spring) (3 credits) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**

GEOG 236 Conservation of Natural Resources: Global Issues (Fall) (3 credits) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**

POSC 220 Introduction to Public Policy (Fall, Winter and Spring) (3 credits)

OR

UAPP 225 Crafting Public Policy (Fall) (3 credits) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**

*Note: APEC 100 Sustainable Development may substitute for POSC 220 or UAPP 225 in the Core Curriculum with the permission of the Student’s Concentration Advisor. Please see the Course Substitution Form on page 20 which can also be accessed from CEEP’s Website.*

Capstone Courses (12 credits): these advanced courses provide opportunities for students to integrate and explore and research sustainable energy and environmental issues.

ENEP 425 Energy Policy and Administration (Fall) (3 credits) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement and the Second Writing Requirement**

ENEP 427 Sustainable Energy: Economics and Policy Analysis (Spring) (3 credits) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement and the Second Writing Requirement**

CHEG 625 (Spring) Green Engineering (3 credits)

GEOG 422 Resources, Development and the Environment (Spring – Not offered in Spring 2016) (3 credits)

Senior Thesis (6 credits): ENEP 472 (for a description of this course, see page 18)

### **Concentration-Specific Courses**

While all ENEP-BS students must fulfill the same university and major requirement categories, each concentration requires different advanced courses and elective advanced courses totaling to 48 credit hours.

### **Energy, Environment and Society (EES)**

Advanced Course Requirements (ACR) (12 credits)

ENEP 410 Environmental Sustainability: Economic and Policy Analysis (3 credits) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement and the Second Writing Requirement**

Or POSC 350 Politics and the Environment (3 credits) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement and the Second Writing Requirement**

- ENEP 426 Climate Change Policy (3 credits) **Also fulfills the Second Writing Requirement. A request has been made for this course to fulfill the “Social and Behavioral Sciences Breadth Requirement”**
- APEC 343/  
ECON 343 Environmental Economics (3 credits) (ECON 101 or APEC 150 required) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**
- ECON 300 Intermediate Microeconomic Theory (3 credits) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**

Advanced Course Electives (ACE)

Science/Methods - choose 12 credits from list below:

- ENEP 420 Water Resources Management (3 credits) (MATH 114 or MATH 115 required)
- BISC 321 Environmental Biology (3 credits) (BISC 208 or Instructor permission required)
- CIEG 402 Introduction to Sustainability Principles in Civil Engineering (3 credits)
- ECON 422 Econometric Methods & Models I (3 credits) (ECON 103; MATH 221 or MATH 241; and MATH 202, MATH 205, MATH 350 or MATH 450 required)
- ENWC 201 Wildlife Conservation and Ecology (3 credits) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**
- ENWC 325 Wildlife Management (3 credits) (ENWC 201 required; Junior status required)
- ENWC 456 Conservation Biology (3 credits) (Junior status required)
- GEOG 271 Introduction to Geographic Data Analysis (3 credits) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**
- GEOG 372 Introduction to GIS (3 credits)
- GEOG 412 Physical Climatology (MATH 241, GEOG 220, and GEOG 271 required) (4 credits)
- MATH 201 Introduction to Statistical Methods I (3 credits) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**
- MATH 202 Introduction to Statistical Methods II (3 credits) (MATH 201 required)
- MATH 221 Calculus 1 (3 credits) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**
- MATH 241 Analytic Geometry and Calculus A (4 credits) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**  
*Note that credit cannot be received for both MATH 221 and MATH 241.*
- STAT 408 Statistical Research Methods I (3 credits)
- STAT 470 Introduction to Statistical Analysis I (3 credits) (MATH 222 or MATH 242 required)
- STAT 471 Introduction to Statistical Analysis II (3 credits) (MATH 222 or MATH 242 required)

STAT 475 Environmental Statistics (3 credits)

Social Science – choose 24 credits from list below:

ENEP 366 Independent Study (1—3 credits)

ENEP 402 Electricity Policy and Planning (3 credits)

ENEP 413/

ENWC 413 Wildlife Policy and Administration (3 credits) (ENWC 201 required; Juniors and Seniors only)

ENEP 468 Research in Energy and Environment (3 credits) **Also fulfills the Second Writing Requirement**

ENEP 470 Readings in Energy and Environment (3 credits) **Also fulfills the Second Writing Requirement**

APEC 324 Introduction to Resource Economics (3 credits) (APEC 150 or ECON 101 required)

APEC 406 Agricultural and Natural Resource Policy (3 credits) (APEC 150 or ECON 101 required)

APEC 450 Topics in Environmental Law (3 credits) (Juniors and Seniors only)

ENGL 365 Environmental Non-Fiction (3 credits) **Also fulfills the “Creative Arts and Humanities” Breadth Requirement and the Second Writing Requirement**

HIST 223 Nature and History (3 credits) **Also fulfills the “History and Cultural Change” Breadth Requirement**

HIST 337 American Environmental History (3 credits) **Also fulfills the “History and Cultural Change” Breadth Requirement**

PHIL 448 Environmental Ethics (3 credits) **Also fulfills the “Creative Arts and Humanities” Breadth Requirement**

POSC 311 Politics of Developing Nations (3 credits)

POSC 316 International Political Economy (3 credits)

SOCI 470 Environmental Sociology (3 credits) (SOCI 201 and SOCI 312 required)

SOCI 471 Disasters, Vulnerability and Development (3 credits)

UAPP 325 Public Policy Analysis (3 credits) (UAPP 110, UAPP 225, and ECON 101 encouraged)

UAPP 406/

GEOG 434 Plan Sustainable Communities & Regions (3 credits)

Foreign Language (up to 8 credits)

### **Energy, Science and Technology (EST)**

Advanced Course Requirements (ACR) (18 credits)

ENEP 426 Climate Change Policy (3 credits) **Also fulfills the Second Writing Requirement. A request has been made for this course to fulfill the “Social and Behavioral Sciences Breadth Requirement”**

CHEM 103 General Chemistry (4 credits) (co-requisite MATH 114 or Higher) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**

- ECON 300 Intermediate Microeconomic Theory (3 credits) (ECON 101 required)  
**Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**
- MATH 241 Analytic Geometry and Calculus A (4 credits) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**
- PHYS 201 Introductory Physics I (4 credits) (MATH 115, MATH 117, MATH 221 or MATH 241 required) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**

Advanced Course Electives (ACE):

Choose 30 credits from the course list below.

- ENEP 420 Water Resources Management (3 credits) (MATH 114 or MATH 115 required)
- ENEP 366 Independent Study (1—3 credits)
- ENEP 402 Electricity Policy and Planning (3 credits)
- ENEP 410 Environmental Sustainability: Economic and Policy Analysis (3 credits)  
**Also fulfills the “Social and Behavioral Sciences” Breadth Requirement and the Second Writing Requirement**
- ENEP 413/  
ENWC 413 Wildlife Policy and Administration (3 credits) (ENWC 201 required; Juniors and Seniors only)
- ENEP 468 Research in Energy and Environment (3 credits) **Also fulfills the Second Writing Requirement**
- ENEP 470 Readings in Energy and Environment (3 credits) **Also fulfills the Second Writing Requirement**
- APEC 343/  
ECON 343 Environmental Economics (3 credits) (ECON 101 or APEC 150 required) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**
- BUAD 301 Introduction to Marketing (3 credits) (Sophomore status required) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**
- BUAD 472 Marketing, Society and the Environment (3 credits) (BUAD 301 required)
- CHEM 104 General Chemistry II (4 credits) (CHEM 101, CHEM 103 or CHEM 105 required) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth**
- CIEG 402 Introduction to Sustainability Principles in Civil Engineering (3 credits)
- ECON 311 Economics of Developing Countries (3 credits) (ECON 101 and ECON 103 required) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**
- ELEG 415/  
ELEG 615 Electric Power and Renewable Energy Systems (3 credits)
- ELEG 491 Ethics/Impacts of Engineering (3 credits) (open to Engineering Seniors; others by permission of Instructor)

- GEOG 271 Introduction to Geographic Data Analysis (3 credits) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**
- GEOG 372 Introduction to GIS (3 credits)
- GEOG 412 Physical Climatology (4 credits) (MATH 241, GEOG 220 and GEOG 271 required)
- MATH 242 Analytic Geometry and Calculus B (MATH 241 required) (4 credits) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**
- MEEG 435 Wind Power Engineering (3 credits) (MEEG 332 required)
- MEEG 442 Introduction to Fuel Cells (3 credits) (MEEG 331 or CIEG 305 and MEEG 341 and MEEG 342 required)
- STAT 470 Introduction to Statistical Analysis I (3 credits) (MATH 222 or MATH 242 required)
- STAT 471 Introduction to Statistical Analysis II (3 credits) (MATH 222 or MATH 242 required)
- UAPP 325 Public Policy Analysis (3 credits) (UAPP 110, UAPP 225, and ECON 101 encouraged)
- UAPP 406/  
GEOG 434 Plan Sustainable Communities & Regions (3 credits)
- Foreign Language (up to 8 credits)

### **Energy, Economics and Public Policy (EEP)**

#### Advanced Course Requirements (ACR):

Choose 18 credits selected from:

- ENEP 402 Electricity Policy and Planning (3 credits)
- ENEP 410 Environmental Sustainability: Economic and Policy Analysis (3 credits) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement and the Second Writing Requirement**
- APEC 343/  
ECON 343 Environmental Economics (3 credits) (ECON 101 or APEC 150 required) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**
- ECON 300 Intermediate Microeconomic Theory (3 credits) (ECON 101 required) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**

A 400-level course applicable to the Energy, Economics and Public Policy Concentration as approved in advance by the Concentration Advisor. (3 credits)

One of the following (3 credits):

- ECON 422 Econometric Methods and Models I (3 credits) (ECON 103; and MATH 221 or MATH 241; and MATH 202, MATH 205, MATH 350 or MATH 450 required)

- MATH 201 Introduction to Statistical Methods (3 credits)  
 STAT 200 Basic Statistical Practice (3 credits)  
 STAT 408 Statistical Research Methods (3 credits)
- STAT 470 Introduction to Statistical Analysis (3 credits) (MATH 222 or MATH 242 required)

*Previously POSC 300 Data Analysis for Political Sciences was offered as an option for this requirement, but the course has been restricted to majors and for this reason the course is not listed as an ACR option in this Handbook.*

### Advanced Course Electives (ACE)

Choose 30 credits from the course list below. (Other courses can be added with the approval of the advisor.)

- ENEP 420 Water Resources Management (3 credits) (MATH 114 or MATH 115 required)
- ENEP 413/  
ENWC413 Wildlife Policy and Administration (ENWC 201 required; Juniors and Seniors only)
- ENEP 426 Climate Change Policy (3 credits) **Also fulfills the Second Writing Requirement. A request has been made for this course to fulfill the “Social and Behavioral Sciences Breadth Requirement”**
- APEC 406 Agricultural and Natural Resource Policy (3 credits) (requires ECON 101 or APEC 150)
- BUAD 301 Introduction to Marketing (3 credits) (Sophomore status required) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**
- BUAD 472 Marketing, Society and the Environment (3 credits) (BUAD 301 required)
- CIEG 402 Introduction to Sustainability Principles in Civil Engineering (3 credits)
- ECON 103 Introduction to Macroeconomics (3 credits) (ECON 101 required) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**
- ECON 311 Economics of Developing Countries (3 credits) (ECON 101 and ECON 103 required) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**
- ECON 360 Government Regulation of Business (3 credits) (ECON 101 required) **Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**  
*Note: Both ECON 360 and ECON 463 cannot be counted toward degree credit.*
- ECON 422 Econometric Methods & Models I (3 credits) (ECON 103; MATH 221 or MATH 241; and MATH 202, MATH 205, MATH 350 or MATH 450 required)
- ECON 426 Mathematical Economic Analysis (3 credits) (ECON 251, ECON 300, or ECON 301 and MATH 222 or MATH 242 required)
- ECON 463 Economics of Regulation (3 credits) (ECON 251, ECON 300, or ECON 301 and MATH 221 or MATH 241 required)



- GEOG 271 Introduction to Geographic Data Analysis (3 credits) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**
- GEOG 372 Introduction to GIS (3 credits)
- GEOG 412 Physical Climatology (4 credits) (MATH 241, GEOG 220 and GEOG 271 required)
- MATH 201 Introduction to Statistical Methods I (3 credits) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**
- MATH 202 Introduction to Statistical Methods II (3 credits) (MATH 201 required)
- MATH 221 Calculus 1 (3 credits) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**
- MATH 241 Analytic Geometry and Calculus A (4 credits) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**  
*Note that credit cannot be received for both MATH 221 and MATH 241.*
- MATH 242 Analytic Geometry and Calculus B (4 credits) **Also fulfills the “Mathematics, Natural Sciences, and Technology” Breadth Requirement**
- POSC 301 State and Local Government (3 credits)
- POSC 311 Politics of Developing Nations (3 credits)
- POSC 316 International Political Economy (3 credits)
- STAT 470 Introduction to Statistical Analysis I (3 credits) (MATH 222 or MATH 242 required)
- STAT 471 Introduction to Statistical Analysis II (3 credits) (MATH 222 or MATH 242 required)
- UAPP 325 Public Policy Analysis (3 credits) (UAPP 110, UAPP 225, and ECON 101 encouraged)
- UAPP 406/  
 GEOG 434 Plan Sustainable Communities & Regions (3 credits)
- UAPP 410 Politics and the Delivery of Public Policy (3 credits)
- UAPP 419 Policy Leadership and Ethics (3 credits)
- UAPP 440 Contemporary Policy Issues (3 credits)

**ENEP COURSE DESCRIPTIONS**

## **ENEP COURSE DESCRIPTIONS**

### **ENEP 117 Science, Society and Energy**

This 1-credit course introduces basic science and societal issues related to energy production processes and effects of their uses. Topics include ethics of energy production and uses, scientific principles that govern production and use of energy, environmental issues related to the use of energy, e.g., global warming, acid rain. This course is taught each fall semester.

### **ENEP 250 Introduction to Energy Policy - Also fulfills the “Social and Behavioral Sciences” Breadth Requirement**

This course introduces United States’ energy policy and addresses energy policy development and options as part of their social, economic and environmental contexts. Energy policy is therefore considered from an interdisciplinary perspective, integrating scientific and social-science approaches to address energy consumption, efficiency, conservation, fuel choice and sustainability. Course topics include a comprehensive overview of the main events and actors that have shaped energy policy in the United States, as well as the issues that decision-makers must understand to promote sustainable energy policies in the future.

### **ENEP 420 Water Resources Management**

Introduces and analyzes various aspects of water resources management both quantitatively and qualitatively. Topics include properties of water, the hydrologic cycle, water law, water supply, groundwater, wetlands, dams and reservoirs, wastewater treatment, wastewater reuse, water treatment, urban stormwater management, and agricultural water management.

### **ENEP 364 Research Internship**

This course provides students with the opportunity for research or service experience outside of the classroom setting with an organization in the field of energy and environmental policy. Based on the Research Internship experience, the student will write a research paper that will contribute to an advanced understanding of the topic area that the student intends to research and explore for his/her senior thesis. Students may choose to intern with a nonprofit, government or research organization in the field of energy and environmental policy or with a business that provides energy or environmental services. While students may research internship opportunities independently, students should consult with their faculty advisor about selecting an appropriate internship.

### **ENEP 366 Independent Study**

The course is an in-depth independent study between a student and professor.

## **ENEP 402 Electricity Policy & Planning**

The direction and organization of the electric power industry is influenced by physical/technical aspects, economic considerations and government policy and regulation. This course provides an overview of each of these key features of the electricity sector. The physical/technical system is described—going over how the system evolved and currently works, its components (generation, transmission, distribution, and retail services) and some relevant contemporary issues affecting its future (such as emissions, reliability, and new technologies). The course then examines the economics of the sector and teaches students basic tools to analyze economic performance. In the final section, students learn the rationale for regulation, the organization of the regulatory system, including the different actors in it, and recent developments (such as restructuring). In this section, the class also explores past and present policies which address the environmental, social, and economic concerns of society regarding this essential industry of the modern age.

## **ENEP 410 Environmental Sustainability: Economic and Policy Analysis - Also fulfills the “Social and Behavioral Sciences” Breadth Requirement and the Second Writing Requirement**

Political economy is the interdisciplinary examination of the relationships between human societies and their resources; relationships which are often made complex by social, political, environmental and economic factors including cultural assumptions, government priorities, resource scarcity, environmental pollution and social inequity. This course investigates the political economy of the environment by considering the major theories that were developed over the last half century to explain nature and society relationships and fundamental issues confronting environmental sustainability at global and local scales.

## **ENEP/ENWC 413 Wildlife Policy and Administration**

This course is an introduction to policy issues that relate to wildlife management and natural resources. Students will gain an understanding of current federal laws, treaties, statutes and regulations, federal agencies and policy formation related to wildlife and habitats in the United States. Students will debate the policies of current hot topics. Upon course completion, students will understand and be able to apply the basic principles of natural resource policy formation and implementation. The course aims to prepare students in a fundamental way to succeed as natural resource professionals.

## **ENEP 425 Energy Policy and Administration - Also fulfills the “Social and Behavioral Sciences” Breadth Requirement and the Second Writing Requirement**

This course analyzes energy use and energy policy with respect to politics, society, economics, political economy, technology, resources, and environment. The course focuses on interrelationships among energy, environment, economy and equity (E4). It considers the energy policy options needed to achieve a more sustainable world. Students successfully completing this course will achieve an understanding of the major issues in energy policy. They will be prepared to conduct energy policy analysis and they will have a basic knowledge of energy concepts and energy systems.

**ENEP 426 Climate Change Policy - Also fulfills the Second Writing Requirement. A request has been made for this course to fulfill the “Social and Behavioral Sciences Breadth Requirement”**

This course reviews the science of climate change and explores existing policy responses. Specific attention is given to exploring the political and economic dimensions of current policy pathways in most of the world’s nations, which have yet to produce a meaningful response to the phenomenon of ever-increasing CO<sub>2</sub> emissions. Also explored are theoretical perspectives grounded in the discourses of sustainability and equity. The course examines opportunities for policy reform that can advance both meaningful CO<sub>2</sub> reductions and opportunities for wider socially beneficial outcomes.

**ENEP 427 Sustainable Energy: Economics and Policy Analysis - Also fulfills the “Social and Behavioral Sciences” Breadth Requirement and the Second Writing Requirement**

This course evaluates domestic and international energy policy and technological options critical to informing the development of sustainable energy policies and planning. Energy policy development and options are considered as part of their social, economic and environmental contexts in an interdisciplinary perspective that integrates scientific and social-science approaches to address energy consumption, efficiency, conservation, fuel choice and sustainability. This course provides students with a comprehensive overview of the main technologies, implementation programs and financing mechanisms that shape energy policy, as well as the issues that policy-makers must understand to promote sustainable energy in the future.

**ENEP 466 Special Problem**

The course is an in-depth independent study between a student and professor to provide students with the opportunity to investigate an energy or environmental policy area of their choice.

**ENEP 468 Research in Energy and Environment - Also fulfills the Second Writing Requirement**

The research course is an in-depth independent study between a student and professor to provide students with the opportunity to investigate an energy or environmental policy area of their choice. Through guided interaction with their professor, students will investigate this topic and write a research paper. Weekly or bi-weekly meetings must be scheduled with the professor in the first week of the semester in which the student enrolls in the course.

**ENEP 470 Readings in Energy and Environment - Also fulfills the Second Writing Requirement**

The readings course is an in-depth independent study between a student and professor to provide students with the opportunity to investigate an energy or environmental policy area of their choice. Through guided interaction with their professor, students will read an extensive body of literature on their topic, discuss these works with their professor and write a draft and final bibliographic essay. Weekly or bi-weekly meetings must be scheduled with the professor in the first week of the semester in which the student enrolls in the course.

## **ENEP 472 Senior Thesis – Also fulfills the Second Writing Requirement**

The Senior Thesis course provides students with the opportunity to draw upon what they have learned in and beyond their work for the major. The work for this course is spread over two semesters of the student's Senior Year. Students will investigate an energy or environmental policy area of their choice which has been developed as a result of their internship. Through guided interaction with their professor, students will investigate this topic and write a 35—50-page final Senior Thesis.

## **Course Substitution Form**

Students must complete the Course Substitution Form and obtain the signature of their Concentration Advisor in order to substitute a course for a Required ENEP course. Following the approval of the Concentration Advisor, ENEP office staff will submit the required UD Course Substitution Form. The Course Substitution Form appears on page 20 of this Handbook and can be found on CEEP's Website.

## **Tutorial Course Registration (ENEP 466, 468 and 470)**

Students must complete and obtain the signature of the intended faculty instructor on the Tutorial Course Registration form prior to registering for these courses. ENEP office staff must complete registration for these courses on the behalf of the students. The Tutorial Course Registration form appears on page 21 of this Handbook and can be found on CEEP's Website. Students planning to enroll in ENEP 468 or ENEP 470 must be enrolled during the Spring semester of the Student's Junior year or Fall semester of Student's Senior year.

## **Preparing for Your Internship (ENEP 364)**

On pages 23 and 24, guidelines are provided for your Research Internship and Internship Paper, respectively. Please consult these guidelines before completing the Internship Course Registration Form (ENEP 364).

## **Internship Course Registration (ENEP 364)**

Students must complete and obtain the signature of the intended faculty instructor on the Internship Course Registration form prior to registering for this course. ENEP office staff must complete registration for this course on the behalf of the students. The Internship Course Registration form appears on page 24 of this Handbook and can be found on CEEP's Website.

## **Preparing ENEP Majors to Design, Conduct and Write Research Papers**

Guidance information about the preparation process for ENEP Majors to design, conduct, and write research papers is given on page 25.

## **Preparing and Defending Your ENEP 472 Paper**

Guidance information about preparing and defending Senior Thesis is given on page 29

### **Senior Thesis Registration (ENEP 472)**

Students must complete and obtain the signature of the intended faculty instructor on the Senior Thesis Registration form prior to registering for this course. ENEP office staff must complete registration for these courses on the behalf of the students. The Senior Thesis Registration form appears on page 31 and can be found on CEEP's Website.

**Bachelor of Science  
Energy and Environmental Policy  
Center for Energy and Environmental Policy  
University of Delaware**

**Course Substitution Form**

Student Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

Required Course that will be Substituted (Number and Title):

\_\_\_\_\_

Substitute Course (Number and Title):

\_\_\_\_\_

Justification for Substitution:

Student Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Advisor Signature: \_\_\_\_\_ Date: \_\_\_\_\_



**Bachelor of Science  
Energy and Environmental Policy  
Center for Energy and Environmental Policy  
University of Delaware  
Undergraduate Tutorial Course Registration Form**

**ENEP 466**

**ENEP 468**

**ENEP 470**

**Semester of Tutorial:** \_\_\_\_\_ **Credit Hours:** \_\_\_\_\_

**Student Name:**

**Student ID:**

**Instructor Name:** \_\_\_\_\_

**Instructor Signature:** \_\_\_\_\_

---

**Summary of the Course Description**

---

**Bases for Grading:**

**Bachelor of Science  
Energy and Environmental Policy  
Center for Energy and Environmental Policy  
University of Delaware**

---

**ENEP 364  
Research Internship Guidelines**

The purpose of the Internship is for the student to develop a research paper that will contribute to an advanced understanding of the topic area in which the student intends to write his/her ENEP 472 Senior Thesis.

This Research Internship course is designed to provide students with the opportunity for experience outside of the classroom setting with an organization in the field of energy and environmental policy.

The internship fulfills the University requirement for the Discovery Learning Experience through a planned and supervised learning opportunity to fulfill the educational competencies of the student's concentration and of the major.

Students may choose to intern with a nonprofit, government or research organization in the field of energy and environmental policy or with a business that provides energy or environmental services.

In order to fulfill the Research Internship credit, students must:

1. Contact their Concentration Advisor no later than the third week of September of their Junior year to begin the process of identifying an appropriate Internship. ENEP will hold an information session for Junior ENEP students during the first week of September in advance of the meetings with the Concentration Advisors.
2. Have their internship approved by their Advisor. This includes the submission of a one-page, typed description of the proposed internship with a clear indication of the value of the expected research or service to the preparation of the student's Senior Thesis.
3. Complete at least 120 hours of internship work.
4. Prepare an outline for and write a 12—15 page paper (double-spaced) detailing their research or service experience. The outline of the paper must be approved by the student's Advisor prior to completing the final paper.

Please note that the grade for ENEP 364 is not based on the time spent at an agency or a business during the internship. The grade is based on the outline of the ENEP 364 paper and the final paper prepared by the student. The outline of the ENEP 364 paper must be submitted to the Concentration Advisor for review and approval prior to preparing the final paper.

**Bachelor of Science  
Energy and Environmental Policy  
Center for Energy and Environmental Policy  
University of Delaware**

**ENEP 364  
Internship Paper Guidelines**

---

Your paper should include the following:

- Description of the relevance of the internship to your research for the Senior Thesis (ENEP 472). This can include: data collection; case study material; experience with technology, markets or policy; etc. that improves your understanding of your research area.
- Energy and/or environmental components of the internship that you were involved with. Be specific, utilizing data or other information from your internship (graphs or data tables may help you to present this information).
- Significance of these energy and/or environmental components within a theoretical or conceptual framework. Utilize materials from your ENEP classes to assist you in linking your internship experience with broader research concerns.

The outline of the ENEP 364 paper must be submitted to the Concentration Advisor for review and approval. Once the outline has been approved by the Concentration Advisor, the student should prepare the Internship Research Paper.

A minimum of 10 academic sources, including books and journal articles that you have read for your ENEP courses, or outside reading material, should supplement your discussion. These sources should be cited in the text and included in a reference list at the end of your paper.

Your paper should be well-organized, with an introductory paragraph that provides a "thesis statement" and explains how the paper will be organized, a body comprised of well-constructed paragraphs, and a conclusion. The body of the essay should include separate sections with section headings on: 1) your internship purpose; 2) the energy and/or environmental components of the internship that you were involved with; and 3) the significance of these energy and/or environmental components within a theoretical or conceptual framework.

Internship papers should be 12—15 pages in length, double spaced in 12pt. font. Papers are due in hard copy (printed), and should not be emailed.

**Bachelor of Science  
Energy and Environmental Policy  
Center for Energy and Environmental Policy  
University of Delaware**

**Internship Registration Form (ENEP 364)**

**ENEP** \_\_\_\_\_

Semester of Internship:

Credit Hours:

---

**Intern Information**

Intern's Name:

Intern's telephone number:

Intern's email address:

Intern's major/minor/concentrations:

Intern's UDSIS number:

---

**Internship Description**

Position Title:

Organization Providing Internship:

Organization Mailing Address:

Name of Site Supervisor:

Site Supervisor's Title:

Site Supervisor's Telephone Number:

Site Supervisor's Email Address:

Site Supervisor's Signature: \_\_\_\_\_

---

Dates of Internship: \_\_\_\_\_ Approximate Hours of Work per Week: \_\_\_\_\_

Brief Description of Tasks:

Anticipated Benefit to Intern:

Concentration Advisor's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Intern's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

**Bachelor of Science  
Energy and Environmental Policy  
University of Delaware**

**Preparing ENEP Majors to Design, Conduct and Write Research Papers**

The ENEP major was created from the experience of the faculty at the Center for Energy & Environmental Policy who have administered master's (MEEP) and PhD (PhD-ENEP) degrees for more than 20 years. The major finishes with a 6-credit Senior Research Paper (ENEP 472) defended before two Program Faculty members who must be from *different* departments. The Senior Thesis is expected to be 35-50 pages in length (double-spaced). All students enrolled in the major must complete and defend their Senior Thesis in order to graduate.

The Senior Thesis requirement grows out of two findings of the Program Faculty:

1. The major prepares graduates to enter private, public and non-profit organizations seeking analytically trained individuals. The demand for individuals trained in the field is mainly to fill policy/regulatory analyst, researcher and program evaluation positions. Often, organizations are looking for individuals who have a basic or better understanding of the underlying science and engineering aspects of energy and environmental challenges and who also have training in economic and policy analysis, with an ability to advise decision makers, through objective analysis, of the appropriate courses of action.
2. Students accepted into the MEEP degree program over the last 20 years who defended theses in order to graduate performed noticeably better than counterparts with similar academic records but who did not have this skill at graduation. The Program Faculty see the major as preparation for graduate study for a sizable percentage of graduates and, therefore, inclusion of this requirement improves the competitiveness of its graduates.

To prepare students for the several skills needed to succeed in the field, the Program Faculty built into the major distinct activities for students to learn how to design and conduct research and to write high-quality policy/economic/technical research papers. The defended Senior Thesis is the outgrowth of these activities. They are as follows:

- Completing ENEP courses designed to fulfill second writing requirements – all 400-level ENEP courses include writing requirements that meet the University second-writing requirement. These include:

- ENEP 410 (3 cr): Environmental Sustainability: Economic and Policy Analysis – requires a 12-15 pp. book review. In consultation with a ENEP graduate student (who provides in- class and out-of-class training on how to prepare the book review) assigned to the course, students select a book from a published list (all are research- based), prepare an outline, submit a draft and then submit a final paper (accounting for 30% of their grade).
- ENEP 425 (3 cr): Energy Policy and Administration – requires a 10-12 pp. final paper on a subject involving at least one thematic section of the course. Preparation of the paper occurs in consultation with the ENEP graduate student assigned to the course for this purpose. At least two out-of-class meetings with the graduate student are required. The final paper accounts for 25% of their grade).
- ENEP 426 (3 cr): Climate Change Policy – requires two research essays of 7-8 pp. each and the completion of a spreadsheet analysis of the UD carbon footprint based on data provided to them. An in-class presentation of each student’s spreadsheet reports on 4 topics – the estimated carbon content of the University’s energy supply, the estimated carbon content of the University’s vehicle fleet and commuters (faculty, staff and students), the carbon impact of the University’s building stock and associated plug loads, and the estimated effects of specified University policy changes. Together, these activities account for 85% of the final course grade.
- ENEP 427 (3 cr): Sustainable Energy: Economics and Policy Analysis – requires a 17-20 pp. research paper and a poster. Students are graded on their research proposal, their research outline, their final paper, their poster, and their in- class presentation of their poster. Together these separately graded activities comprise 50% of the final course grade. Students work with two ENEP graduate students assigned to the course.

Students in each concentration of the major take at least 3 of the second-writing courses listed above. Honors students must write more advanced research papers, and in ENEP 427 (formerly (ENEP 424) prepare more than one conference poster.

- Completing a Research Internship (ENEP 364) – all students in the major are required to complete a research internship for 3 credits. In order to register for the course, each student must complete a form and obtain their faculty advisor’s signature. On the form, the student defines the nature of the research activity, the organizational host and the benefits to the student’s program of study. A 12—15 page paper, developed with the student’s faculty advisor, is the main basis for the final course grade. Internships are developed in one of three ways:
  - Option 1: a) Students identify the proposed topic(s) of their undergraduate research to their advisor; b) The advisor indicates whether s/he has industry, government or other contacts in the student’s area of interest and suggests

- an application process by the student with the support of the advisor; if the advisor does not have relevant contacts, c) the student's interest is communicated to ENEP director and associate director who identify contacts for the student.
  - Option 2: In parallel, the student can explore on the Internet and elsewhere opportunities and then elicit the assistance of their advisor and, if needed, the Center's director and associate director.
  - Option 3: The student reviews the annually published ENEP/CEEP Research Portfolio (which contains 12-17 research projects) and decides if volunteering on any of the projects would meet their needs for a research internship. If yes, they can volunteer, for an ENEP/CEEP project, with the support of their advisor.
- Completing a Readings Tutorial (ENEP 470) – Some students in the major complete a 3-credit tutorial with a faculty expert for the purpose of preparing a draft of the research literature review that can be used in the Senior Thesis. Depending upon the type of research a student has selected, it is possible to select a 3-credit Research Tutorial (ENEP 468) instead of the Readings Tutorial. Both tutorials include a 10-12 pp. paper which accounts for the bulk of the final course grade. Prior permission to enroll in the tutorial is required.

With this preparation, the student then enrolls in ENEP 472, the Senior Thesis course for 6 credits, and, with their committee's advice, prepares the Senior Thesis. Students enroll for 6 credits in their senior year, typically either in the previous Summer Session or Fall Semester for students who plan to graduate in the Spring. Students normally will receive an 'S' grade until defense of the paper occurs during the Semester they are graduating.

As a widely recognized hallmark of undergraduate distinction, a Senior Thesis demonstrates to graduate schools, fellowship committees, and employers a student's intellectual achievement and sophistication as well as their initiative and self-discipline.

As the capstone of their undergraduate experience, a Senior Thesis provides students with the opportunity to draw upon what they have learned in and beyond their work for the major and to make a significant contribution of their own. Students who complete a Senior Thesis may earn either a Degree with Distinction (DwD) or—if they are pursuing an Honors Degree—they will earn an Honors Degree with Distinction (HDwD). Requirements for earning the DwD or the HDwD include the successful research, writing, and defense of the 6-credit ENEP 472, and meeting certain GPA and course requirements outlined on the URP website. The University Undergraduate Research Program has agreed to accept senior theses written for ENEP 472 in lieu of the UNIV 401-402 sequence.

Students enrolled in ENEP 472 will also have the same opportunities as students enrolled in the University's senior research thesis courses (UNIV 401 & 402) to participate in additional activities, which include the following:

1. \*Attending an orientation session at the beginning of each semester.
2. \*Presenting their work to a small group of students twice a year, once in the fall, and again in the spring. Students in ENEP 472 may also have the option of attending another group's presentations and providing those students with feedback on their work.
3. Attending a session demonstrating how to format a Paper (e.g., incorporating figures, tables, and graphs into a paper). Sessions are held twice in the fall and twice in the spring; students only have to attend one session.
4. Attending and having the option to present their work at the Senior Research Thesis Symposium, held on the first Saturday each May.
5. Receiving a graduation medal for their Senior Thesis. The medal signifies the student has earned a Degree with Distinction, which is an enriched degree indicating a student's success in researching, writing, and defending their work, and the meeting of specific GPA requirements.
6. Students who complete ENEP 472 have the option of depositing their Senior Thesis into the University's institutional repository, an online archive that makes the student's work publicly accessible. (Note: this is not mandatory. Students must opt in by granting the URP permission to deposit their work, and students retain copyright of their work.)

\*The orientation session and the presentations are scheduled for Monday afternoons from 3:35 pm – 5:30 pm. If students enrolled in ENEP 472 would like to participate in these sessions, they may want to keep their Monday afternoon class time (3:35 pm – 5:30 pm) open on their schedule.



**Bachelor of Science  
Energy and Environmental Policy  
University of Delaware**

**Preparing and Defending Your ENEP 472 Senior Thesis**

**Preparing the ENEP 472 Paper**

The 6-credit ENEP 472 Senior Thesis consists of the following:

1. Abstract – typically 1 pp.
2. Statement of the Problem – typically 1-2 pp.
3. Background on the Problem (including a literature review) – typically -8--10 pp.
4. Description of the Research Undertaken by the Student (including a description of data, methods and key concepts guiding their research) – typically 10—12 pp.
5. Presentation of the Student’s Analysis (including figures, tables, models, etc.) – typically 10-18 pp.
6. Report of Key Findings – typically 4-6 pp.
7. Recommendations (for example to public policy, to organization decision makers, etc.) – typically 4-5 pp.
8. List of References – typically 30 or so references are expected (4-8 pp.)

Ordinarily, an ENEP 472 paper will be prepared in draft form at least one full month before the anticipated defense date and will undergo at least one revision defined by the student’s faculty advisor.

The defense version of the ENEP 472 paper must be provided to the student’s advisor and the second faculty member of the student’s committee. Details on who is eligible to serve on the 2-faculty member committee are given in the file referenced above.

The defense version of the ENEP 472 paper must be furnished to committee members at least five (5) business days in advance of the defense date.

**Defense of the ENEP 472 Paper**

The student should prepare a 10-15 minute presentation of his or her ENEP 472 paper. It should include:

1. A clear and concise statement of the thesis, approved in advance of the defense by the faculty advisor (who also serves as chair of the defense).
2. Identification of the key concepts and methods used to analyze the thesis.

3. The data used in the analysis. This can include empirical data, documents analyzed, research or other literature examined, survey/interview results, or case study material prepared for the analysis of the thesis.
4. A statement of the key findings of the ENEP 472 paper.

PowerPoint, Prezi and SlideRocket are recommended as methods of delivering the 10-15 minute presentation, but none is required. A PowerPoint presentation should have a maximum of 12 slides.

Students should arrive at least 15 minutes in advance to set up the presentation. Students must bring their own equipment to run the presentation.

Scheduling a room for the defense of the paper is the responsibility of the student. The ENEP program coordinator can assist with scheduling.

**Bachelor of Science  
Energy and Environmental Policy  
University of Delaware**

**Senior Thesis Registration Form (ENEP472)**

Student Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

Semester of Research Paper: \_\_\_\_\_

Concentration Advisor: \_\_\_\_\_

Committee Members: \_\_\_\_\_

\_\_\_\_\_

Research Topic:

Outline of Research Paper (Attach additional pages as necessary.)

*ENEP364 should be completed prior to registering for ENEP472.*

Please indicate Semester when ENEP364 was completed: \_\_\_\_\_

Advisor Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## **PLAN OF STUDY: GENERAL**

### Notes:

\* *Indicates a course which can fulfill a Breadth Requirement*

^ *Indicates a course which can fulfill a Second Writing Requirement*

### **Courses to Take in the First Year**

Certain courses are designed to be taken during freshman year to assist students in developing the knowledge and skills needed to succeed as a college student. These are:

- \* ECON 101 Introduction to Microeconomics (3 credits)
- ENEP 117 Science, Society and Energy (1 credit)
- \* ENEP 250 Introduction to Energy Policy (3 credits)
- ENGL 110 Seminar in Composition (3 credits)
- \* GEOG 236 Conservation of Natural Resources: Global Issues (3 credits)

To fill out the remaining courses for your freshman year, select 100- or 200-level classes that fulfill breadth requirements or concentration requirements. 100- and 200-level courses are designed to be introductory, and are therefore most appropriate for first-year college students.

### **Courses to Take in the Second Year**

The following courses are most appropriate for sophomore students. These courses build upon the knowledge and skills of freshman courses, and continue to assist students in developing the tools needed to succeed as an upper-classman.

- \* PHYS 143 Energy, Technology and Society (3 credits)
- \*^ ENEP 410 Environmental Sustainability: Economic and Policy Analysis (3 credits)

### **Courses to Take in the Third Year**

The following courses should be taken during the junior year to help students prepare for the Senior Thesis.

- ENEP 364 Internship
- \*^ ENEP 425 Energy Policy and Administration (3 credits)
- \*^ ENEP 427 Sustainable Energy: Economics and Policy Analysis (3 credits)

### **Courses to Take in the Fourth Year**

The following courses should be reserved for the student's senior year.

- CHEG 625 Green Engineering (3 credits)
- \* ^ ENEP 426 Climate Change Policy
- ^ ENEP 468 or ENEP 470 Research in Energy and Environment (3 credits) (EES Concentration)
- ^ ENEP 472 Senior Thesis (6 credits)

## PLAN OF STUDY: SPECIFICS

### CURRICULUM SPECIFICS FOR THE CONCENTRATION IN

## ENERGY, ENVIRONMENT AND SOCIETY (EES)

<b>Advanced Course Requirement (ACR)</b>			<b>12 credits</b>	
ACR	ENEP 410	Environmental Sustainability: Economic and Policy Analysis (Fall)	3 credits	
	or	POSC 350	Politics and the Environment (Spring)	3 credits
ACR	ENEP 426	Climate Change Policy (Spring)	3 credits	
ACR	APEC 343/ ECON 343	Environmental Economics (Fall)	3 credits	
ACR	ECON 300	Intermediate Microeconomic Theory (Fall)	3 credits	

<b>Advanced Course Elective (ACE)</b>			<b>36 credits</b>
<b>Science/Methods Menu (ACE)</b>			<b>12 credits</b>

12 credits are to be chosen from the list below to satisfy this part of the ACE requirement. Other courses can be added with the approval of the advisor

ACE	ENEP 420	Water Resources Management (Fall)	3 credits
ACE	BISC 321	Environmental Biology (Spring)*	3 credits
ACE	CIEG 402	Introduction to Sustainability Principles in Civil Engineering (Fall)	3 credits
ACE	ECON 422	Econometric Methods & Models I (Fall)	3 credits
ACE	ENWC 201	Wildlife Conservation and Ecology (Fall)	3 credits
ACE	ENWC 325	Wildlife Management (Spring)	3 credits
ACE	ENWC 456	Conservation Biology (Fall)	3 credits
ACE	GEOG 271	Introduction to Geographic Data Analysis (Fall)	3 credits
ACE	GEOG 372	Introduction to GIS (Fall)	3 credits
ACE	GEOG 412	Physical Climatology (Spring)	4 credits
ACE	MATH 201	Introduction to Statistical Methods I (Fall)	3 credits
ACE	MATH 202	Introduction to Statistical Methods II (Fall)	3 credits
ACE	MATH 221	Calculus 1 (Fall)	3 credits
ACE	MATH 241	Analytical Geometry and Calculus A (Fall)	4 credits
ACE	STAT 408	Statistical Research Methods I (Fall)	3 credits
ACE	STAT 470	Introduction to Statistical Analysis I (Fall)	3 credits
ACE	STAT 471	Introduction to Statistical Analysis II (Spring)	3 credits
ACE	STAT 475	Environmental Statistics (Spring)	3 credits

<b>Social Science Menu (ACE)</b>			<b>24 credits</b>
----------------------------------	--	--	-------------------

---

\* May not be taught in Spring 2016. Please check course catalogue by November 2015 to confirm.

24 credits are to be chosen from the list below to satisfy this part of the ACE requirement. Other courses can be added with the approval of the advisor.

ACE	ENEP 366	Independent Study (Spring)	1-3 credits
ACE	ENEP 402	Electricity Policy and Planning (Fall)	3 credits
ACE	ENEP 413/ ENWC413	Wildlife Policy and Administration (Fall)	3 credits
ACE	ENEP 468	Research in Energy and Environment (Fall)	3 credits
ACE	ENEP 470	Readings in Energy and Environment (Fall)	3 credits
ACE	APEC 324	Introduction to Resource Economics (Spring)	3 credits
ACE	APEC 406	Agricultural and Natural Resource Policy (Spring)	3 credits
ACE	APEC 450	Topics in Environmental Law (Fall)	3 credits
ACE	ENGL 365	Environmental Non-Fiction (Fall)	3 credits
ACE	HIST 223	Nature and History (Spring)	3 credits
ACE	HIST 337	Topics in American History(Spring)	3 credits
ACE	PHIL 448	Environmental Ethics (Spring)	3 credits
ACE	POSC 311	Politics of Developing Nations (Fall)	3 credits
ACE	POSC 316	International Political Economy (Spring)	3 credits
ACE	SOCI 470	Environmental Sociology (Fall)	3 credits
ACE	SOCI 471	Disasters, Vulnerability and Development (Spring)	3 credits
ACE	UAPP 325	Public Policy Analysis (Spring)	3 credits
ACE	UAPP 406/ GEOG 434	Plan Sustainable Communities & Regions (Spring)	3 credits
ACE	Foreign Language (up to 8 credits)		8 credits

## Plan of Study: Specifics

### CURRICULUM SPECIFICS FOR THE CONCENTRATION IN

## ENERGY, SCIENCE AND TECHNOLOGY (EST)

### Advanced Course Requirement (ACR) 18 credits

ACR	ENEP 426	Climate Change Policy (Spring)	3 credits
ACR	CHEM 103	General Chemistry (Fall)	4 credits
ACR	ECON 300	Intermediate Microeconomic Theory (Fall)	3 credits
ACR	MATH 241	Analytic Geometry and Calculus A (Fall)	4 credits
ACR	PHYS 201	Introductory Physics I (Fall)	4 credits

### Advanced Course Elective (ACE) 30 credits

30 credits are to be chosen from the list below to satisfy the ACE requirement. Other courses can be added with the approval of the advisor.

ACE	ENEP 420	Water Resources Management (Fall)	3 credits
ACE	ENEP 366	Independent Study (Fall and Spring)	1-3 credits
ACE	ENEP 402	Electricity Policy and Planning (Fall)	3 credits
ACE	ENEP 410	Environmental Sustainability: Economic and Policy Analysis (Fall)	3 credits
ACE	ENEP 413/ ENWC 413	Wildlife Policy and Administration (Fall)	3 credits
ACE	ENEP 468	Research in Energy and Environment (Fall)	3 credits
ACE	ENEP 470	Readings in Energy and Environment (Fall)	3 credits
ACE	APEC 343/ ECON 343	Environmental Economics (Fall)	3 credits
ACE	BUAD 301	Introduction to Marketing (Fall)	3 credits
ACE	BUAD 472	Marketing, Society and the Environment (Fall)	3 credits
ACE	CHEM 104	General Chemistry II (Fall)	4 credits
ACE	CIEG 402	Introduction to Sustainability Principles in Civil Engineering (fall)	3 credits
ACE	ECON 311	Economics of Developing Countries (Fall)	3 credits
ACE	ELEG415/ ELEG 615	Electric Power and Renewable Energy Systems (Fall)	3 credits
ACE	ELEG 491	Ethics/Impacts of Engineering (Spring)	3 credits
ACE	GEOG 271	Introduction to Geographic Data Analysis (Fall)	3 credits
ACE	GEOG 372	Introduction to GIS (Fall)	3 credits
ACE	GEOG 412	Physical Climatology (Spring)	4 credits
ACE	MATH 242	Analytic Geometry and Calculus B (Fall)	4 credits
ACE	MEEG 435	Wind Power Engineering (Spring)	3 credits
ACE	MEEG 442	Introduction to Fuel Cells (Fall)	3 credits

ACE	STAT 200	Basic Statistical Practice (Fall and Spring)	3 credits
ACE	STAT 470	Introduction to Statistical Analysis I (Fall)	3 credits
ACE	STAT 471	Introduction to Statistical Analysis II (Spring)	3 credits
ACE	UAPP 325	Public Policy Analysis (Spring)	3 credits
ACE	UAPP 406/ GEOG 434	Plan Sustainable Communities & Regions (Spring)*	3 credits
ACE	Foreign Language (up to 8 credits)		8 credits

---

\* May not be taught in Spring 2016. Please check course catalogue by November 2015 to confirm.



## Plan of Study: Specifics

### CURRICULUM SPECIFICS FOR THE CONCENTRATION IN

## **ENERGY, ECONOMICS AND PUBLIC POLICY (EEP)**

<b>Advanced Course Requirement (ACR)</b>			<b>18 credits</b>
ACR	ENEP 402	Electricity Policy and Planning (Fall)	3 credits
ACR	ENEP 410	Environmental sustainability: Economic and Policy Analysis (Fall)	3 credits
ACR	APEC 343/ ECON 343	Environmental Economics (Fall)	3 credits
ACR	ECON 300	Intermediate Microeconomic Theory (Fall)	3 credits

One of the following or an approved Substitute:

ACR	A 400-level course applicable to the Energy, Economics and Public Policy Concentration as approved in advance by the Concentration Advisor.		3 credits
-----	---	--	-----------

One of the following:

ACR	ECON 422	Econometric Methods and Models I (Fall)	3 credits
ACR	MATH 201	Introduction to Statistical Methods (Fall)	3 credits
ACR	STAT 200	Basic Statistical Practice (Fall and Spring)	3 credits
ACR	STAT 408	Statistical Research Methods (Fall)	3 credits
ACR	STAT 470	Introduction to Statistical Analysis (Fall)	3 credits

### **Advanced Course Elective (ACE) 30 credits**

30 credits are to be chosen from the list below to satisfy the ACE requirement. Other courses can be added with the approval of the advisor.

ACE	ENEP 420	Water Resources Management (Fall)	3 credits
ACE	ENEP 413/ ENWC413	Wildlife Policy and Administration (Fall)	3 credits
ACE	ENEP 426	Climate Change Policy (Spring)	3 credits
ACE	APEC 406	Agricultural and Natural Resource Policy (Spring)	3 credits
ACE	BUAD 301	Introduction to Marketing (Fall)	3 credits
ACE	BUAD 472	Marketing, Society and the Environment (Fall)	3 credits
ACE	CIEG 402	Introduction to Sustainability Principles in Civil Engineering (Fall)	3 credits
ACE	ECON 103	Introduction to Macroeconomics (Fall)	3 credits
ACE	ECON 311	Economics of Developing Countries (Fall)	3 credits
ACE	ECON 360	Government Regulation of Business (Fall)	3 credits
ACE	ECON 422	Econometric Methods & Models I (Fall)	3 credits

ACE	ECON 426	Mathematical Economic Analysis (Spring)	3 credits
ACE	ECON 463	Economics of Regulation (Spring)	3 credits
ACE	GEOG 271	Introduction to GIS (Fall)	3 credits
ACE	GEOG 372	Geographic Information Systems (Fall)	3 credits
ACE	GEOG 412	Physical Climatology (Spring)	4 credits
ACE	MATH 201	Introduction to Statistical Methods I (Fall)	3 credits
	or		
	STAT 200	Basic Statistical Practice (Fall and Spring)	3 credits
ACE	MATH 202	Introduction to Statistical Methods II (Fall)	3 credits
ACE	MATH 221	Calculus 1 (Fall)	3 credits
ACE	MATH 241	Analytical Geometry and Calculus A (Fall)	4 credits
ACE	MATH 242	Analytical Geometry and Calculus B (Fall)	4 credits
ACE	POSC 301	State and Local Government (Spring)	3 credits
ACE	POSC 311	Politics of Developing Nations (Fall)	3 credits
ACE	POSC 316	International Political Economy (Spring)	3 credits
ACE	STAT 470	Introduction to Statistical Analysis I (Fall)	3 credits
ACE	STAT 471	Introduction to Statistical Analysis II (Spring)	3 credits
ACE	UAPP 325	Public Policy Analysis (Spring)	3 credits
ACE	UAPP 406/ GEOG 434	Plan Sustainable Communities & Regions*	3 credits

---

\* May not be taught in Spring 2016. Please check course catalogue by November 2015 to confirm.

## Example Plans of Study for Each Concentration

The plans of study for each concentration demonstrate an example of the types of courses that students could enroll in for each year. Students may take courses in another sequence, or may choose to take different courses to fulfill their concentration requirements. Students must consult with their faculty advisor to decide on their actual plan of study. There are many options for completing each concentration.

## Energy, Environment and Society (EES)

	Fall Semester	Spring Semester
First Year	ENEP 117 (1 credit) (FYE) ECON 101 (3 credits) * UAPP 225 (3 credits) * MATH 115 or MATH 221 (3 credits) * Breadth Requirement <sup>1</sup> (4 credits)	ENGL 110 (3 credits) STAT 201 (3 credits) * ENEP 250 (3 credits) * Breadth Requirement (3 credits) Advanced Course Elective (3 credits)
Second Year	PHYS 143 (3 credits) * GEOG 236 (3 credits) * GEOG 372 (3 credits) ENEP 410 (3 credits) * Breadth Requirement (3 credits)	PHIL 448 (3 credits) Multi-Cultural Requirement (3 credits) Breadth Requirement (3 credits) Electives/Adv. Course Electives (6 credits)
Third Year	ECON 300 (3 credits) * ENEP 413 (3 credits) ENEP 425 (3 credits) Advanced Course Electives (6 credits)	APEC 343 (3 credits) * ENEP 427 Breadth (3 credits) Breadth Requirement (3 credits) Advanced Course Electives (6 credits)
Summer	ENEP 364 (3 credits)	
Fourth Year	HIST 337 (3 credits) ENEP 472 (6 credits) ENEP 468 or 470 (3 credits) Advanced Course Elective (3 credits)	ENEP 426 (3 credits) APEC 406 (3 credits) CHEG 625 (3 credits) GEOG 422 (3 credits) Breadth Requirement/Elective (3 credits)

\* May fulfill Breadth Requirement

<sup>1</sup> You have the option of filling this slot with a 3-credit Breadth Requirement and taking a 4-credit lab course in a later semester.

<sup>2</sup> ENEP 410, , 425, 426, 427, 468, 470, or 472 fulfill the Second Writing Class requirement.

## **Energy, Science and Technology (EST)**

	Fall Semester	Spring Semester
First Year	ENEP 117 (1 credit) (FYE) Breadth Requirement <sup>1</sup> (4 credits) ECON 101 (3 credits) * UAPP 225 (3 credits) * MATH 241 (4 credits)*	ENGL 110 (3 credits) ENEP 250 (3 credits) * CHEM 103 (4 credits) * MATH 242 (4 credits) *
Second Year	Breadth Requirements (6 credits) PHYS 143 (3 credits) * STAT 470 (3 credits) Advanced Course Elective (3 credits)	Breadth Requirements (3 credits) CHEM 104 (4 credits) * PHYS 201 (4 credits) * Advanced Course Elective (3 credits)
Third Year	ENEP 420 (3 credits) Multicultural Requirement (3 credits) Breadth Requirement (3 credits) GEOG 236 (3 credits) * ELEG 415 (3 credits)	Breadth Requirements (3 credits) ECON 300 (3 credits) * ENEP 425 (3 credits) GEOG 422 (3 credits) Advanced Course Elective (3 credits)
Summer	ENEP 364 (3 credits)	
Fourth Year	APEC 343 (3 credits) ENEP 410 (3 credits) * ENEP 425 (3 credits) ENEP 472 (6 credits)	ENEP 426 (3 credits) * CHEG 625 (3 credits) ENEP 427 (3 credits) Breadth Requirements/Electives (6 credits)

\* May fulfill Breadth Requirement

<sup>1</sup> You have the option of filling this slot with a 3-credit Breadth Requirement and taking a 4-credit lab course in a later semester.

<sup>2</sup> ENEP 410, , 425, 426, 427, or 472 fulfill the Second Writing Class requirement.

## **Energy, Economics and Public Policy (EEP)**

	Fall Semester	Spring Semester
First Year	ENEP 117 (1 credit) (FYE) Breadth Requirements (6 credits) ECON 101 (3 credits) * UAPP 225 (3 credits) * MATH 115 or MATH 221 (3 credits)*	ENGL 110 (3 credits) Breadth Requirements (6 credits) MATH 201 (3 credits) ENEP 250 (3 credits)
Second Year	Breadth Requirement (3 credits) GEOG 236 (3 credits) * ECON 300 (3 credits) PHYS 143 (3 credits) * BUAD 301 (3 credits) *	Breadth Requirements/Electives (9 credits) ECON 311 (3 credits) GEOG 372 (3 credits)
Third Year	Multicultural Requirement (3 credits) ENEP 470 or Substitute (3 credits) ECON 360 (3 credits) ENEP 410 (3 credits) ENEP 402 (3 credits)	Breadth Requirements (6 credits) APEC/ECON 343 (3 credits) * Advanced Course Electives (6 credits)
Summer	ENEP 364 (3 credits)	
Fourth Year	ENEP 413 (3 credits) ENEP 425 (3 credits) ENEP 472 (6 credits) Advanced Curriculum Elective (3 credits)	ENEP 426 (3 credits) CHEG 625 (3 credits) ENEP 427 (3 credits) GEOG 422 (3 credits) Advanced Course Elective (3 credits)

\* May fulfill Breadth Requirement

<sup>1</sup> ENEP 410, 425, 426, 427, 468, 470, or 472 fulfill the Second Writing Class requirement.

## COURSE REQUIREMENTS WORKSHEET

### Energy, Environment and Society (EES)

125 credits required to graduate

Requirement	Course	Credits	Semester	Grade
University Requirements (10 credits)	ENGL 110	3		
	ENEP 117	1		
	ENEP 364	3		
	Multicultural <sup>1</sup>	3		
Breadth Group Requirements (31 credits)	Creative Arts and Humanities	9		
	History and Cultural Change	6		
	Social and Behavioral Sciences	6		
	Mathematics, Natural Science, and Technology	10		
Major Requirements (18 credits)	2 <sup>nd</sup> Writing	3		
	ENEP 250	3		
	PHYS 143	3		
	ECON 101	3		
	UAPP 225	3		
	GEOG 236	3		
Advanced Course Requirement (ACR) (12 credits)	ENEP 410 or POSC 350	3		
	ENEP 426	3		
	APEC 343	3		
	ECON 300	3		
Advanced Course Elective (ACE)(12 credits) Science/Methods				
Advanced Course Elective (ACE)(24 credits) Social Science				
Capstone Courses (12 credits)	ENEP 425	3		
	ENEP 427	3		
	CHEG 625	3		
	GEOG 422	3		
Senior Thesis	ENEP 472	6		
Electives				

Some Multicultural courses can also count as fulfillment of certain Group A, B or C Breadth Requirements.

# COURSE REQUIREMENTS WORKSHEET

## Energy, Science and Technology (EST)

125 credits required to graduate

Requirement	Course	Credits	Semester	Grade
University Requirements (10 credits)	ENGL 110	3		
	ENEP 117	1		
	ENEP 364	3		
	Multicultural <sup>1</sup>	3		
Breadth Group Requirements (31 credits)	Creative Arts and Humanities	9		
	History and Cultural Change	6		
	Social and Behavioral Sciences	6		
	Mathematics, Natural Science, and Technology	10		
Major Requirements (18 credits)	2 <sup>nd</sup> Writing	3		
	ENEP 250	3		
	PHYS 143	3		
	ECON 101	3		
	UAPP 225	3		
	GEOG 236	3		
Advanced Course Requirement (ACR) (18 credits)	ENEP 426	3		
	CHEM 103	4		
	ECON 300	3		
	MATH 241	4		
	PHYS 201	4		
Advanced Course Elective (ACE)(30 credits)				
Capstone Courses (12 credits)	ENEP 425	3		
	ENEP 427	3		
	CHEG 625	3		
	GEOG 422	3		
Senior Thesis	ENEP 472	6		
Electives				

Some Multicultural courses can also count as fulfillment of certain Group A, B or C Breadth Requirements.

# COURSE REQUIREMENTS WORKSHEET

## Energy, Economics and Public Policy (EEP)

125 credits required to graduate

Requirement	Course	Credits	Semester	Grade
University Requirements (10 credits)	ENGL 110	3		
	ENEP 117	1		
	ENEP 364	3		
	Multicultural <sup>1</sup>	3		
Breadth Group Requirements (31 credits)	Creative Arts and Humanities	9		
	History and Cultural Change	6		
	Social and Behavioral Sciences	6		
	Mathematics, Natural Science, and Technology	10		
Major Requirements (18 credits)	2 <sup>nd</sup> Writing	3		
	ENEP 250	3		
	PHYS 143	3		
	ECON 101	3		
	UAPP 225	3		
	GEOG 236	3		
Advanced Course Requirement (ACR) (18 credits)	ENEP 402	3		
	ENEP 410	3		
	APEC 343	3		
	ECON 300	3		
		3		
Advanced Course Elective (ACE)(30 credits)		3		
Capstone Courses (12 credits)	ENEP 425	3		
	ENEP 427	3		
	CHEG 625	3		
	GEOG 422	3		
Senior Thesis	ENEP 472	6		
Electives				

Some Multicultural courses can also count as fulfillment of certain Group A, B or C Breadth Requirements.



## **BREADTH REQUIREMENTS**

[http://academiccatalog.udel.edu/Pub\\_ShowCatalogPage.aspx](http://academiccatalog.udel.edu/Pub_ShowCatalogPage.aspx)

### **Creative Arts and Humanities**

[http://academiccatalog.udel.edu/Pub\\_ShowCatalogPage.aspx](http://academiccatalog.udel.edu/Pub_ShowCatalogPage.aspx)

### **History and Cultural Change**

[http://academiccatalog.udel.edu/Pub\\_ShowCatalogPage.aspx](http://academiccatalog.udel.edu/Pub_ShowCatalogPage.aspx)

### **Social and Behavioral Sciences**

[http://academiccatalog.udel.edu/Pub\\_ShowCatalogPage.aspx](http://academiccatalog.udel.edu/Pub_ShowCatalogPage.aspx)

### **Mathematics, Natural Sciences, and Technology**

[http://academiccatalog.udel.edu/Pub\\_ShowCatalogPage.aspx](http://academiccatalog.udel.edu/Pub_ShowCatalogPage.aspx)

## STUDENT LIFE

### ENEP Undergraduate Council

The mission of the ENEP Undergraduate Council is to bring all ENEP undergraduates together in an out-of-the-classroom social setting. The group is meant to serve as a point of contact for all new and returning ENEP students. Topics such as course selection, course registration, and ENEP graduation requirements are discussed. Internship opportunities are also shared, as is the latest in energy and environmentally-related news. The ENEP Undergraduate Council is a young and developing group on campus open to new ideas from new members!

#### **Points of contact:**

Natalie Criscenzo  
Gnanadesikan Somasundaram  
Madeline Williams

[nataliec@udel.edu](mailto:nataliec@udel.edu)  
[desik@udel.edu](mailto:desik@udel.edu)  
[madewill@udel.edu](mailto:madewill@udel.edu)

### Meeting with Your Advisor

Your advisor is your assigned faculty member that will help guide you through your time here at ENEP. The frequency with which you meet your advisor depends on many issues. How busy is your advisor, what do you want to discuss, are there any important things coming up (e.g. paper deadline, conference, etc.), but we do suggest to meet with your advisor on a regular basis. Of course, the frequency also differs as to your personal preference, but most students meet with their advisor at least once a month. This will keep your advisor updated on your general progress, and will give you the opportunity to inform your advisor about any new potential plans you might have. Your advisor can help you with a range of different issues such as selecting a specific course that fits your plan of study, advising you of internship possibilities that you are qualified for, and helping you with general advisement.

### Registering for Classes

You can register for courses through the University of Delaware website (<http://www.udel.edu/>). At the menu bar, select *Students*, and then *UDSIS*. After you log-in onto the UDSIS, you will get to your personal Student Center. Here, you can get information on a wide range of topics, such as your grades, transcripts, your financial standing with UD, courses taken, and your demographic data. But, importantly for this section, you can also register for the courses you're planning on taking next semester. When you select *Registration & Drop/Add*, you get to a new window that allows you to select the courses you want to take. The website shows you how many seats are still available in the course and the schedule of the course.

Not sure about which courses you can choose from? A selection of courses is included in this handbook to provide you with an idea of the courses that fit well with the ENEP requirements. If you want to see which courses are offered outside of the courses

mentioned here, you can take a look at the UD course catalog. You can find the catalog on the UD home website (<http://www.udel.edu/>). Just select *Students* from the main menu bar, then *Academic Resources*, followed by *UD catalog*.

Throughout your study, we recommend that you discuss your selection of courses with your advisor. You are also encouraged to discuss your course selection with fellow students. Also, make sure to select your courses prior to the start of the semester (except for your very first semester as you need to wait for orientation) and on time.

### **Campus Services**

The University of Delaware provides students with assistance in classes, personal development and finding a job after graduation.

### **Office of Academic Enrichment**

The Office of Academic Enrichment provides students with the skills needed to succeed in classes, including tutoring and study skills, much of which is free of charge.

Office of Academic Enrichment  
148-150 S. College Ave  
(302) 831-4555  
UD-aec@udel.edu  
<http://ae.udel.edu/>

### **University Writing Center**

The University Writing Center helps students to improve their writing skills through one-on-one and small group tutorials. Writing tutors will review written assignments to strengthen organization, documentation and grammar.

016 Memorial Hall  
(302) 831-1168  
writing-center@udel.edu  
<http://www.english.udel.edu/wc/>

### **Career Services Center**

Career Services Center provides career advice and help finding employment for UD students and alumni.

401 Academy Street  
(302) 831-2392  
udcareers@udel.edu  
<http://www.udel.edu/CSC/>

## **Office for International Students and Scholars (OISS)**

For international students, the OISS is a very important service. The OISS has a separate orientation in which they will inform you of all the services they provide. Here, we provide you with their contact information for your convenience:

Office for International Students and Scholars  
44 Kent Way  
(302) 831-2115  
oiss@udel.edu  
<http://www.udel.edu/oiss/>

## **Around UD and Newark**

### **Where to Go on Campus**

Here is the UD map: <http://primus.nss.udel.edu/buildings/main.action>

### **Student Centers**

Perkins Student Center (on Academy Street) contains a food court (nice mix of fresh and made-to-order food), Dunkin Donuts, study space, and a copy center. Downstairs is the Hen Zone (arcade) and Baccus Theater, a location for any number of student plays, concerts, and other activities. There is an Amazon Locker on the first floor where you can receive secure shipments from the online retailer.

Trabant Student Center (on the corner of South College and Main Street) contains another (though much busier and louder than Perkins) food court, a PNC bank, multi-purpose rooms (job fairs, lectures, campus events, etc.), a copy center, and a travel agency. Downstairs is a movie theater.

### **UD Fitness Centers' Various locations (<http://www.udel.edu/fitness/>)**

All full-time students have free gym membership, which includes an Olympic sized pool, cardiovascular exercise equipment, weights, aerobics classes, basketball courts and racquetball courts. Volleyball and Badminton nets are available at no charge upon request. Just bring your student ID (it acts as your membership card).

### **UD Parking**

The campus has undergone extensive change during the last several years, thus you should make sure you know the parking rules if you choose to drive to campus. UD Parking home can be found at: <http://www.udel.edu/transportation/> An interactive Parking Map can be found at: <http://www.udel.edu/transportation/parking/parking-intmap.html> Information on the UD Shuttle (by seeing its location online real-time: <http://www.udel.edu/udshuttle/>)

## **Health Care on Campus**

In the event of an emergency, call 911. If you wish to drive to the closest hospital, then visit Christiana ([www.christianacare.org/](http://www.christianacare.org/)) or Union Hospital in Elkton Maryland ([www.uhcc.com/](http://www.uhcc.com/)).

For general primary doctor care, visit the Student Health Services (SHS), which is located in Laurel Hall (on the main campus south green area at the intersection of South College Avenue and East Park Place). Information on their services is located here: <http://www.udel.edu/studenthealth/index.html>

For student insurance, the plans that are made available are introduced here: <http://www.udel.edu/studenthealth/insurance/index.html>

## **UD Electronic Communications & Administration**

As a student at UD you will need to access forms and view information over the internet, so the links below represent the most important places to find the information you are seeking.

- CEEP's homepage: <http://ceep.udel.edu/> (**ENEP Temporary home Page**)
- UDSIS, where to add/drop classes, look at your finances, etc.:  
<http://www.udel.edu/udsis-student>
- Webviews, where you can look at your paystubs, etc.:  
<http://www.udel.edu/webviews>
- People search: <http://www.udel.edu/peoplesearch/>
- UD Maps: <http://www.udel.edu/maps/>
- Sakai: <http://www.udel.edu/sakai>

## **UD Library**

Recently renovated in the summer of 2014, the Morris Library is an unparalleled resource for research and study – both in the stack and on the web: [www.lib.udel.edu](http://www.lib.udel.edu). You can also reserve private research/study meeting rooms for project meetings.

Online, you will find access to many databases (JSTOR, RefWorks, Academic OneSource, Lexis Nexis, etc.) and hundreds of journals, to which you have subscription access as a UD student.

Aside from books, the basement of the Morris Library offers access to a wide range of resources and services. The Student Multimedia Design Center is stocked with many computers, both PC and Mac, as well as free rental of high-tech audio, video and photographic equipment. They even offer professional quality video and audio recording studios. In addition to basic self-service scanning, printing and copying services, they also offer large-format poster printing.

The adjacent Film and Video Collection houses over 14,000 DVD/Blu-ray discs of movies, TV shows, etc. If you can't find what you're looking for, the Inter-Library Loan department located on the first floor can get almost any book or film from an affiliated library.

### **Where to buy your books**

UD bookstore at Barnes & Noble

#### **Barnes & Noble UD Bookstore**

83 East Main Street

Newark, DE 19717

Website: <http://udel.bncollege.com/>

### **Other Book Shops**

Lieberman's Bookstore – ([www.lubonline.com](http://www.lubonline.com))

Used Books Only:

Bookateria

70 E Cleveland Ave.

(302) 737-4933

Manor Used Books

1005 N. Dupont Hwy., New Castle, DE

(302) 322-5584

You can find books, as well as jobs, housing, and other items on UDel Classifieds: [www.udel.edu/classifieds](http://www.udel.edu/classifieds)

### **How to reserve a room at UD**

One option is to submit a room request form with the Registrar's Office: <http://www.udel.edu/registrar/forms/specev.html>. (This option is available to Staff only.)

There is a second option, but it requires collaborating with a Graduate Student Organization (GSO) such as EEPsA or a Registered Student Organization (RSO) such as Students For the Environment (S4E), which have room reservation privileges in the Perkins and Trabant Student Centers. [NOTE: The designation of an RSO is restricted to undergraduate student associations.]

### **Where to go in Newark**

#### **On Main Street:**

- Panera Bread ([www.panerabread.com](http://www.panerabread.com))
- Cosi ([www.getcosi.com](http://www.getcosi.com))
- Iron Hill Brewery ([www.ironhillbrewery.com](http://www.ironhillbrewery.com))
- Klondike Kates ([www.klondikekates.com](http://www.klondikekates.com))
- Homegrown Cafe ([www.homegrowncafe.com](http://www.homegrowncafe.com)) - great for local, vegetarian and vegan!

- Ali Baba Mid Eastern Cuisine ([www.alibabacuisine.com](http://www.alibabacuisine.com)) - also good for vegetarian cuisine
- Deer Park Tavern ([www.deerparktavern.com](http://www.deerparktavern.com))
- Caffé Gelato – ([www.caffegelato.net](http://www.caffegelato.net))
- Indian Sizzler ([www.indiansizzlerus.com](http://www.indiansizzlerus.com))

#### **Off Main Street:**

- Border Cafe - 483 Stanton Christiana Rd ([www.bordercafe.com](http://www.bordercafe.com)) (cajun/creole)
- Mad-macs/Matilda's – 801 S College Ave., (302) 737-4800
- Claymont Steak Shop – 57 Elkton Rd. (<http://www.claymontsteakshop.com/>)
- Greene Turtle - 250 S. Main Street, Suite 101 (<http://www.thegreenturtle.com/>)
- Jake's - 250 S. Main Street, Suite 110 (<http://waybackburgers.com/>)
- Buffalo Wild Wings – 100 S. Main Street (<http://www.buffalowildwings.com/>)

#### **Groceries:** (you can use Google maps or mapquest to find these addresses)

- Newark Co-Op – 280 E Main St, [www.newarknaturalfoods.com](http://www.newarknaturalfoods.com)
- Newark Farmer's Market, 2515 Kirkwood Hwy, Newark, De 19711  
<http://naturalhouse.wix.com/shopnewarkfarmersmarket>  
(4 mi. NE of Graham Hall), this is where you will find the largest selection of food items that you cannot find in the other grocery stores, such as international foods. Acme (2.2 mi SW of Graham Hall) Suburban Plaza Shopping Center, off Rte 2
- Pathmark (1 mi. NE of Graham Hall) in College Square Shopping Center on Library Road (100 College Sq)
- Shop Rite (1.5 mi. SE of Graham Hall), 19 Chestnut Hill Plaza
- Super Fresh (1.4 mi. NW of Graham Hall), 401 New London Rd
- Safeway (approx. 6 miles S of Graham Hall) in Peoples Plaza, off Rte 896
- Apna Bazaar (approx. 1 mi. SW of Graham Hall) 267 S. Main Street in the Park n' Shop

#### **Coffee Shops:** On Main Street:

- Brewed Awakenings - 64 E Main St (best spot for fair trade coffee)
- Brew Ha Ha - 45 E Main St (second floor of Main Street Galleria above Lieberman's/Grotto's)
- Starbucks - 141 E Main St (Corner of Main St and Haines St)
- Central Perk - 42 E Main St
- Dunkin Donuts – 51 E Main St. (same building as Brew Ha Ha, first floor)
- Saxby's Coffee – 57 Elkton Rd. (A little off Main St., in Amstel Court)

#### **Movies:**

- Regal Peoples Plaza Cinema – 1100 Peoples Plaza (outside town, but wide selection). <http://www.regmovies.com/Theatres/Theatre-Folder/Regal-Peoples-Plaza-Stadium-17-1643>

- Newark Cinema Center 3, Newark Shopping Center – 401 Newark Shopping Center (inexpensive, walking distance, but only three screens) <http://cinemacenter3.com/>
- UD Theater (In Trabant Student Center, lower level – near Main St). Weekend showings of mainstream films (<http://www.scpab.com/>);
- Also: rent movies for free at Newark Free Library corner of E. Main St. and Library Ave, as well as from University's Library (<http://www.lib.udel.edu/>)

### **Parks:**

- White Clay Creek State Park (closest to campus) - 425 Wedgewood Rd ([www.destateparks.com/park/white-clay-creek/](http://www.destateparks.com/park/white-clay-creek/)). Other State Parks, see [www.destateparks.com/](http://www.destateparks.com/)
- Fair Hill Natural Resource Management Area (<http://dnr2.maryland.gov/publiclands/central/fairhill.asp>) - good hiking and mountain biking trails, about 5 minutes from campus
- Longwood Gardens ([www.longwoodgardens.com](http://www.longwoodgardens.com)) - for beautiful planned and wild gardens, forests, fountains, conservatories, and DuPont opulence

### **Where to go outside of Newark**

- Wilmington- 13 miles (<http://www.ci.wilmington.de.us/>)
- Philadelphia- 45 miles (<http://www.visitphilly.com/>)
- Baltimore- 60 miles ([www.baltimore.org](http://www.baltimore.org))
- Rehoboth Beach, DE- 90 miles ([www.beach-fun.com](http://www.beach-fun.com) [www.rehoboth.com](http://www.rehoboth.com))
- Washington DC- 95 miles ([www.washington.org](http://www.washington.org))
- New York- 130 miles ([www.nycvisit.com](http://www.nycvisit.com))

### **How to get around**

Newark has a very walkable and bike able downtown. For greater distances, you may want to use a car or take public transportation.

### **Newark**

UD Shuttle Bus Service, around campus for free - ([www.udel.edu/bus](http://www.udel.edu/bus)), see also the real-time tracker:

<http://www.udel.edu/udshuttle/>

Newark UNICITY bus system – ([www.udel.edu/transportation/unicity-route/](http://www.udel.edu/transportation/unicity-route/)) (Newark service)

Delaware Authority for Regional Transit (DART) - ([www.dartfirststate.com](http://www.dartfirststate.com))

**Zipcar** at the University of DelawareFast. Convenient. Affordable. Environmentally friendly.

With Zipcar on campus, it just got easier to live without a car.

(<http://www.udel.edu/transportation/zipcar.html>)



**Delaware**

DART buses – offer statewide service

Southeastern Pennsylvania Transportation Authority (SEPTA) trains  
The R2 line runs through Newark to Wilmington and Philadelphia.

**Philadelphia and beyond-** SEPTA, Amtrak, private bus companies

[www.septa.org](http://www.septa.org)

[www.amtrak.com](http://www.amtrak.com)

[www.megabus.com](http://www.megabus.com)

[www.boltbus.com](http://www.boltbus.com)

**Megabus:** Baltimore, New York, Philly, DC, Richmond (VA), Hampton (VA)

**MARC** Train Perryville, MD to Baltimore and Washington DC

[http://www.perryvillemd.org/train\\_station.html](http://www.perryvillemd.org/train_station.html)