

SUSTAINABILITY PROGRAM

Major:

- Bachelor of Arts, Sustainability (p. 1)
- Bachelor of Science, Sustainability (p. 3)

Concentrations:

- Food Systems (Bachelor of Arts) (p. 2)
- Urban Sustainability (Bachelor of Arts) (p. 3)
- Energy (Bachelor of Science) (p. 4)
- Sustainable Watersheds (Bachelor of Science) (p. 5)

Minor:

- Sustainability (p. 6)

The Sustainability Program at the University of Dayton connects passion, purpose and vocation. In addition to instilling a strong sustainability ethic, the program integrates a transdisciplinary perspective through which students gain knowledge of social, cultural, and political dimensions of sustainability from the local to global scale. With faculty from across the university, students address the integral connection between natural and social systems. Students develop a basic knowledge in systems thinking, ethics and environmental justice, community engagement, urban design and development, ecology and resource management, not only to understand the complex questions and challenges they will face in the workplace, but also to communicate ways to respond to those challenges.

Each student works closely with a faculty advisor and affiliate faculty in developing a vocational pathway through coursework, research and experiential learning. Students benefit from a broad range of courses that provide a holistic perspective on sustainability, as well as disciplinary and methods courses carefully selected to enhance student skills and technical knowledge. Community-engaged learning, a capstone project working with community partners, the opportunity for study abroad, and local work-experience opportunities provide students with experience beyond the classroom and the university campus.

Highly engaged mentoring and collaborative research opportunities provide a significant advantage for those students entering the workforce, or a graduate program in a related field. The program offers both a Bachelor of Science and Bachelor of Arts, with specific concentrations required to complete the degree. Graduates in the growing field of Sustainability find jobs in clean energy, community organizing, technology, education, management, planning, business and more.

Interested students should notify Rebecca Potter (see@udayton.edu), Program Director, or Brooke Palmer (see@udayton.edu), Sr. Administrative Assistant.

Sustainability Program Advisory Committee

Rebecca Potter (English), Program Director

Bednarek (History), Bedaso (Geology), Bohrer (ETHOS), Brecha (Physics), Cuy Castellanos (Dietetics), Fernando (Hanley Sustainability Institute), Hallinan (Mechanical Engineering), Holcomb (Sociology), Jablonski (Hanley Sustainability Institute), Jennings (Art and Design), King (Rivers Institute), Luftig (University Libraries), McCall (Hanley Sustainability

Institute), McEwan (Biology), Miller (Religious Studies), Pautz (Political Science), Piso (Philosophy), Potter (Sustainability Program), Galli-Robertson (Sociology), Wu (Geology)

Bachelor of Arts, Sustainability (SUS) minimum 124 hours

The Bachelor of Arts in Sustainability is an integrated degree that prepares students for careers in Sustainability-related fields requiring a broad range of skills. The Bachelor of Arts integrates social, cultural, and political dimensions of sustainability with a focus on leadership and community engagement. Graduates of the program are highly adept in communicating and learning across the arts and sciences, while concentrated study in either Urban Sustainability or Food Systems prepares students for careers in:

- sustainability consulting or planning
- community organizing with non-profit and faith-based organizations
- marketing and business communication or management
- sustainability assessment, education and outreach

Students (in consultation with their advisors) must declare an area of concentration in either Food Systems or Urban Sustainability, preferably by the time they reach Junior standing. The alignment between the Bachelor of Arts in Sustainability and the Common Academic Program makes it possible to double-major in another academic discipline and still complete both degrees in four years. Courses taken for the major may also count toward completion of the Common Academic Program and the Liberal Studies Curriculum.

Common Academic Program (CAP) ¹

First-Year Humanities Commons ²	12
	cr.
	hrs.
HST 103 The West & the World	
REL 103 Introduction to Religious and Theological Studies	
PHL 103 Introduction to Philosophy	
ENG 100 Writing Seminar I ³	
Second-Year Writing Seminar ⁴	0-3
	cr.
	hrs.
ENG 200 Writing Seminar II	
Oral Communication	3
	cr.
	hrs.
CMM 100 Principles of Oral Communication	
Mathematics	3
	cr.
	hrs.
Social Science	3
	cr.
	hrs.
SSC 200 Social Science Integrated	
Arts	3
	cr.
	hrs.
Natural Sciences ⁵	7
	cr.
	hrs.

Crossing Boundaries	up to 12 cr. hrs.
Faith Traditions	
Practical Ethical Action Inquiry ⁶	
Integrative	
Advanced Study	
Philosophy and/or Religious Studies (6 cr. hrs.)	
Historical Studies (3 cr. hrs.) ⁷	
Diversity and Social Justice ⁸	3 cr. hrs.
Major Capstone ⁹	0-6 cr. hrs.

- ¹ The credit hours listed reflect what is needed to complete each CAP component. However, they should not be viewed as a cumulative addition to a student's degree requirements because many CAP courses are designed to satisfy more than one CAP component (e.g., Crossing Boundaries and Advanced Studies) and may also satisfy requirements in the student's major.
- ² May be completed with ASI 110 and ASI 120 through the Core Program.
- ³ May be completed with ENG 100A and ENG 100B, by placement.
- ⁴ May be completed with ENG 114 or ENG 198 or ASI 120.
- ⁵ Must include two different disciplines and at least one accompanying lab.
- ⁶ U.S. History AP and CLEP credit will not satisfy this requirement.
- ⁷ May be completed with ASI 110 and ASI 120 through the Core Program. U.S. History AP and CLEP credit will not satisfy this requirement.
- ⁸ May not double count with First-Year Humanities Commons, Second-Year Writing, Oral Communication, Social Science, Arts, or Natural Sciences CAP components, but may double count with courses taken to satisfy other CAP components and/or courses taken in the student's major.
- ⁹ The course or experience is designed by faculty in each major; it may, or may not, be assigned credit hours.

Liberal Studies Curriculum

Creative and Performing Arts (May include CAP Arts)	3
L2 Proficiency (Proficiency in a language other than English)	0-11
Literature (May include CAP Components)	3
Mathematics, excluding MTH 205 (Satisfies CAP Mathematics)	3
Natural Sciences (Satisfies CAP Natural Science)	11
Social Sciences (Includes CAP Social Science)	12

Major Requirements 40-44

Required Courses	12
SEE 250 Introduction to Sustainability, Energy & the Environment	
SEE 280 Sustainable Communities	
SEE 310 Sustainability Scenarios	

SEE 325 Sustainable Development Goals	
Select one course from the following:	3

SEE 303 Constructions of Place	
VAR 350 Art and Social Practice	

Select one course from the following (science):	3
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SEE 301 Global Change & Earth Systems	
BIO 310 Ecology	
BIO 359 Sustainability & the Biosphere	
BIO 395 Global Environmental Biology	
GEO 208 Environmental Geology	
GEO 308 Problems & Decisions in Environmental Geology	

Experiential Learning 3-6

Select 3-6 credit hours in designated experiential learning courses	
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SEE 398L Experiential Learning Laboratory	
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SSS Capstone 3

SEE 402 Sustainability Research II	
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Vocational Concentration

Select one advisor-approved vocational concentration from the following:

Food Studies Concentration	
Urban Sustainability Concentration	

Breadth

ASI 150 Introduction to the University Experience	1
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Total Hours to total at least	124
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Food Systems Concentration (FSS)

Food Systems Concentration 16-20

Select one course from the following:	1-3
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ANT 340 Place, Culture, and Social Justice	
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HSS/SOC 384 Food Justice	
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POL 333 Politics of Human Rights	
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POL 371 Environmental Policy	
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SEE 322 Cities and Suburbs: Urban Sustainability	
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SEE 390 Special Topics in Sustainability, Energy and the Environment	
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SEE 490 Experiential Study in Sustainability, Energy and the Environment	
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SWK 335 Social Work & Environmental Justice	
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Select one course from the following (methods):	3-4
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BIO 439 Analysis & Interpretation of Biological Data	
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GEO 450 Applied Geographic Information Systems	
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Select three courses from the following:	9-10
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HSS 210 Introductory Foods & 210L and Introductory Foods Laboratory	
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HSS 295 Nutrition & Health	
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HSS/SOC 384 Food Justice	
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HST 379 History of Food	
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Select one course from the following:	3
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ENG 369 Writing in Organizations	
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ENG 370 Report & Proposal Writing	
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ENG 392 Writing for Grants and Non-Profits

SEE 401 Sustainability Research I

Urban Sustainability Concentration (USS)

Urban Sustainability Concentration 17-19
Required Courses 10

ASI 320 Cities & Energy

SEE 322 Cities and Suburbs: Urban Sustainability

GEO 450 Applied Geographic Information Systems

Select one from the following: 3

HST 341 Historical Icons-Representations and Meaning in the Past: [region/period]

HST 342 Environmental History

HST 355 American Urban History

HST 359 History of American City Planning

Select one from the following: 3

ENG 369 Writing in Organizations

ENG 370 Report & Proposal Writing

ENG 392 Writing for Grants and Non-Profits

SEE 401 Sustainability Research I

Select one from the following: 1-3

ANT 340 Place, Culture, and Social Justice

ECO 435 Economics of the Environment

ECO 485 Urban & Regional Economics

HSS/SOC 384 Food Justice

POL 371 Environmental Policy

POL 426 Leadership in Building Communities

SEE 390 Special Topics in Sustainability, Energy and the Environment

SEE 490 Experiential Study in Sustainability, Energy and the Environment

SOC 309 Community Practice & Research

SOC 351 Urban Sociology

SOC 426 Leadership in Building Communities

SWK 303 Community Practice & Research

SWK 335 Social Work & Environmental Justice

Bachelor of Science, Sustainability (SUS) minimum 120 hours

The Bachelor of Science in Sustainability is an integrated degree that prepares students for careers in the rapidly evolving sustainability sector, especially where strong scientific and analytical skills are required. Graduates of the program are highly adept in both communicating and problem solving, as well as in quantitative methods and data analysis. The Bachelor of Science in Sustainability prepares students for careers with

- government agencies
- nongovernmental organizations
- public utilities
- regulatory bodies

- commercial firms and businesses

Students (in consultation with their advisors) must declare an area of concentration in either Energy or Sustainable Watersheds, preferably by the time they reach Junior standing. The alignment between the Bachelor of Science in Sustainability and the Common Academic Program makes it possible to double-major in another academic discipline and still complete both degrees in four years. Courses taken for the major may also count toward completion of the Common Academic Program and the Liberal Studies Curriculum.

Common Academic Program (CAP) ¹

First-Year Humanities Commons ² 12 cr. hrs.

HST 103 The West & the World

REL 103 Introduction to Religious and Theological Studies

PHL 103 Introduction to Philosophy

ENG 100 Writing Seminar I ³
Second-Year Writing Seminar ⁴ 0-3 cr. hrs.

ENG 200 Writing Seminar II

Oral Communication 3 cr. hrs.

CMM 100 Principles of Oral Communication

Mathematics 3 cr. hrs.
Social Science 3 cr. hrs.

SSC 200 Social Science Integrated

Arts 3 cr. hrs.
Natural Sciences ⁵ 7 cr. hrs.
Crossing Boundaries up to 12 cr. hrs.

Faith Traditions

Practical Ethical Action

Inquiry ⁶

Integrative

Advanced Study

Philosophy and/or Religious Studies (6 cr. hrs.)

Historical Studies (3 cr. hrs.) ⁷
Diversity and Social Justice ⁸ 3 cr. hrs.

Major Capstone⁹ 0-6 cr. hrs.

- ¹ The credit hours listed reflect what is needed to complete each CAP component. However, they should not be viewed as a cumulative addition to a student's degree requirements because many CAP courses are designed to satisfy more than one CAP component (e.g., Crossing Boundaries and Advanced Studies) and may also satisfy requirements in the student's major.
- ² May be completed with ASI 110 and ASI 120 through the Core Program.
- ³ May be completed with ENG 100A and ENG 100B, by placement.
- ⁴ May be completed with ENG 114 or ENG 198 or ASI 120.
- ⁵ Must include two different disciplines and at least one accompanying lab.
- ⁶ U.S. History AP and CLEP credit will not satisfy this requirement.
- ⁷ May be completed with ASI 110 and ASI 120 through the Core Program. U.S. History AP and CLEP credit will not satisfy this requirement.
- ⁸ May not double count with First-Year Humanities Commons, Second-Year Writing, Oral Communication, Social Science, Arts, or Natural Sciences CAP components, but may double count with courses taken to satisfy other CAP components and/or courses taken in the student's major.
- ⁹ The course or experience is designed by faculty in each major; it may, or may not, be assigned credit hours.

MAJOR REQUIREMENTS

Sustainability Core

Students take the following foundation courses:

SEE 250	Introduction to Sustainability, Energy & the Environment	3
SEE 280	Sustainable Communities	3
SEE 301	Global Change & Earth Systems	3
SEE 325	Sustainable Development Goals	3
SEE 435	System Modeling for Sustainability	3

Students select one course from the following (arts): 3

SEE 303	Constructions of Place
VAR 350	Art and Social Practice

Students select one course from the following (economics and society): 3

SEE 322	Cities and Suburbs: Urban Sustainability
POL 371	Environmental Policy
ECO 435	Economics of the Environment
ECO 441	Econometrics
ECO 485	Urban & Regional Economics
SEE 310	Sustainability Scenarios
SEE 390	Special Topics in Sustainability, Energy and the Environment ¹

SEE 401 Sustainability Research I

Experiential Learning 3-6

Students take at least 3 and no more than 6 credit hours in designated experiential learning courses.

SEE 398L	Experiential Learning Laboratory
GEO 303	Field Geology

GEO 479	Environmental Instrumentation Laboratory
BIO 479L	Environmental Instrumentation Laboratory
SEE 490	Experiential Study in Sustainability, Energy and the Environment

Vocational Concentration

Select one advisor-approved vocational concentration from the following:

Energy Concentration
Sustainable Watersheds Concentration

Capstone

SEE 402	Sustainability Research II	3
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Energy Concentration (NRG)

Energy Concentration

Students select two of the following courses with accompanying labs:⁸

BIO 151 & 151L	Concepts of Biology I: Cellular & Molecular Biology and Concepts of Biology Laboratory I: Cellular & Molecular Biology
BIO 152 & 152L	Concepts of Biology II: Evolution & Ecology and Concepts of Biology Laboratory II: Evolution & Ecology
CHM 123 & 123L	General Chemistry and General Chemistry Laboratory
CHM 124 & 124L	General Chemistry and General Chemistry Laboratory
GEO 109 & 109L	Earth, Environment, and Society and Earth, Environment, and Society Lab
or GEO 115 & 115L	Physical Geology and Physical Geology Laboratory
GEO 116 & 116L	Geological History of the Earth and Geological History of the Earth Laboratory
or GEO 208 & 208L	Environmental Geology and Environmental Geology Laboratory
GEO 208 & 208L	Environmental Geology and Environmental Geology Laboratory

Students take:

PHY 206	General Physics I - Mechanics	3
PHY 207	General Physics II - Electricity & Magnetism	3

Students take:

ECO 203	Principles of Microeconomics	3
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Students take:

MTH 137 & MTH 138	Calculus I with Review and Calculus I with Review	4-8
or MTH 168	Analytic Geometry & Calculus I	

MTH 169	Analytic Geometry & Calculus II	4
MTH 218	Analytic Geometry & Calculus III	4

Students select one course from the following:

MTH 207	Introduction to Statistics
MTH 367	Statistical Methods I
DSC 210	Statistics for Business I
PSY 216	Elementary Statistics
SOC 308	Data Analysis
BIO 439	Analysis & Interpretation of Biological Data

Students select one course from the following:	3
PHY 220 Energy & Environmental Physics	
EGR 202 Engineering Thermodynamics	
Students select one course from the following (methods):	3
GEO 450 Applied Geographic Information Systems	
GEO 455 Environmental Remote Sensing	
MEE 457 Building Energy Informatics	
Students take:	
ASI 320 Cities & Energy	3
Students select one of the following:	3
ENG 370 Report & Proposal Writing	
ENG 392 Writing for Grants and Non-Profits	
SEE 401 Sustainability Research I	
Students select three courses from the following:	9
GEO 234 Energy Resources	
CHM 234 Energy Resources	
MEE 420 Energy Efficient Buildings	
MEE 456 Energy Systems Engineering	
MEE 457 Building Energy Informatics	
MEE 472 Design for Environment	
MEE 473 Renewable Energy Systems	
MEE 478 Energy Efficient Manufacturing	
SEE 390 Special Topics in Sustainability, Energy and the Environment ¹ . When on energy-related topic and with approval of student's advisor for the major..	
SEE 490 Experiential Study in Sustainability, Energy and the Environment ¹ . When on an energy-related topic and with approval of student's advisor for the major.	

Sustainable Watersheds Concentration (WAT)

Sustainable Watersheds

Students take:	12
BIO 151 Concepts of Biology I: Cellular & Molecular Biology & 151L	
BIO 152 Concepts of Biology II: Evolution & Ecology and Concepts of Biology Laboratory II: Evolution & Ecology	
GEO 109 Earth, Environment, and Society & 109L	
or GEO 115 Physical Geology & 115L	
and Physical Geology Laboratory	
Students select two lectures and one lab from:	7
GEO 116 Geological History of the Earth & 116L	
and Geological History of the Earth Laboratory	
or GEO 208 Environmental Geology & 208L	
and Environmental Geology Laboratory	
CHM 123 General Chemistry & 123L	
and General Chemistry Laboratory	
CHM 124 General Chemistry & 124L	
and General Chemistry Laboratory	
PHY 201 College Physics I & 201L	
and College Physics Laboratory I	

or PHY 206 General Physics I - Mechanics & PHY 210L and General Physics Laboratory I	
PHY 202 College Physics II & 202L	
and General Physics Laboratory	
or PHY 207 General Physics II - Electricity & Magnetism & PHY 211L and General Physics Laboratory II	
Students select one of the following courses:	3-4
MTH 138 Calculus I with Review ^{Requires MTH 137 as pre-requisite.}	
MTH 148 Introductory Calculus I	
MTH 168 Analytic Geometry & Calculus I	
And students take one additional course in MTH or CPS. MTH 137, MTH 207 or MTH 367 satisfy this requirement.	3-4
Students select one of the following courses:	3
MTH 207 Introduction to Statistics	
MTH 367 Statistical Methods I	
DSC 210 Statistics for Business I	
PSY 216 Elementary Statistics	
SOC 308 Data Analysis	
Students select one course from:	3
ENG 370 Report & Proposal Writing	
ENG 392 Writing for Grants and Non-Profits	
Students select one from the following (methods):	3-4
BIO 439 Analysis & Interpretation of Biological Data	
GEO 450 Applied Geographic Information Systems	
GEO 455 Environmental Remote Sensing	
Biology of Aquatic Systems	8
Students take:	
BIO 310 Ecology	
BIO 310L Ecology Laboratory	
BIO 452 Biology of Rivers & Lakes	
BIO 452L Biology of Rivers & Lakes Laboratory	
Geology of Aquatic Systems	4
Students take:	
GEO 309 Surface & Groundwater Hydrology	
GEO 309L Surface and Groundwater Hydrology Laboratory	
Electives in Sustainable Watersheds; students select two courses from the following:	6-8
BIO 409 Ecological Restoration	
BIO 461 Invertebrate Zoology	
CEE 313 Hydraulics & 313L	
and Hydraulics Laboratory	
CEE 333 Water Resources Engineering	
CEE 434 Water & Wastewater Engineering & 434L	
and Water & Wastewater Engineering Laboratory	
CHM 313 Organic Chemistry	
CHM 324 Green Chemistry	
GEO 307 Geomorphology	
GEO 308 Problems & Decisions in Environmental Geology	
GEO 412 Introductory Geochemistry	

Minor in Sustainability

Sustainability, Energy and the Environment ¹

SEE 250	Introduction to Sustainability, Energy & the Environment	3
SEE Core		6-9
Select two or three courses (6-9 hours) from:		
SEE 280	Sustainable Communities	
ASI 320	Cities & Energy	
ASI 322	Cities & Suburbs: The Influence of Place (Social Science)	
SEE 301	Global Change & Earth Systems	
SEE 303	Constructions of Place	
SEE 310	Sustainability Scenarios	
SEE 315	Risk Analysis and Communication	
SEE 322	Cities and Suburbs: Urban Sustainability	
SEE 325	Sustainable Development Goals	
SEE 390	Special Topics in Sustainability, Energy and the Environment	
SEE 401	Sustainability Research I	
SEE 402	Sustainability Research II	
SEE 435	System Modeling for Sustainability	
SEE 490	Experiential Study in Sustainability, Energy and the Environment	

Sustainability Breadth

Select one or two courses (3-7 hours) from: ²			3-7
BIO 310	Ecology		
BIO 359	Sustainability & the Biosphere		
BIO 395	Global Environmental Biology		
GEO 208	Environmental Geology		
CHM/GEO 234	Energy Resources		
PHY 220	Energy & Environmental Physics		
BIO 370	Conservation Biology		
BIO 407	Plant Diversity & Ecology		
BIO 409	Ecological Restoration		
BIO 452	Biology of Rivers & Lakes		
BIO 459	Environmental Ecology		
BIO 466	Biology of Infectious Disease		
CEE 333	Water Resources Engineering		
CEE 434	Water & Wastewater Engineering		
CEE 463	Hazardous Waste Treatment		
EGR 330	Engineering Design & Appropriate Technology		
EGR 374	Sustainable Energy Analysis and Economics		
GEO 302	Glacial Geology		
GEO 309	Surface & Groundwater Hydrology		
GEO 450	Applied Geographic Information Systems		
GEO 455	Environmental Remote Sensing		
HSS 302	Community Nutrition		
HSS/SOC 384	Food Justice		
MEE 420	Energy Efficient Buildings		
MEE 464	Sustainable Energy Systems		
MEE 472	Design for Environment		
MEE 473	Renewable Energy Systems		

MEE 478	Energy Efficient Manufacturing	
MFG 438	Sustainable Manufacturing & Product Design	
Select one or two courses (3-6 hours) from:		3-6
ECO 435	Economics of the Environment	
ECO 460	Economic Development & Growth	
ECO 485	Urban & Regional Economics	
ENG 342	Literature and the Environment	
HST 342	Environmental History	
HST 355	American Urban History	
HST 359	History of American City Planning	
HST 379	History of Food	
PHL 321	Environmental Ethics	
PHL 334	Philosophy & Ecology	
PHL 335	Philosophy of Sustainability	
POL 371	Environmental Policy	
REL 365	Christian Theology and Environmental Ethics	
REL 472	Ecology & Religion	
SOC 371	Sociology of Human Rights	
SOC 384	Food Justice	
SWK 335	Social Work & Environmental Justice	
VAR 350	Art and Social Practice	
Total Hours		15-25

¹ Students who wish to minor in Sustainability, Energy and the Environment should contact the coordinator of the Sustainability, Energy and the Environment minor.

² Students with a major not otherwise requiring a biology course must complete either SEE 301 (with its prerequisite) or BIO 359 or BIO 395.

³ Additional courses may be approved by SEE coordinator.

- Bachelor of Arts, Food Systems Concentration (p. 6)
- Bachelor of Arts, Urban Sustainability Concentration (p. 7)
- Bachelor of Science, Energy Concentration (p. 7)
- Bachelor of Science, Watershed Concentration (p. 8)

Bachelor of Arts, Food Systems Concentration

First Year			
Fall	Hours	Spring	Hours
ASI 150		1 BIO 152 & 152L	4
BIO 151 & 151L		4 HST 103	3
CMM 100		3 MTH 148	3
ENG 100		3 PHL 103	3
REL 103		3 SEE 250	3
		14	16
Second Year			
Fall	Hours	Spring	Hours
ECO 203		3 ASI 322	3
ENG 200		3 HSS 295	3
MTH 207		3 CAP Faith Traditions	3

SEE 280	3	L2 Proficiency (proficiency in a language other than English)	4
SSC 200	3	Elective	3
		Third Year	Hours
		Fall	Spring
HSS 210 & 210L	4	BIO 310	3
HST 379	4	ENG 370	3
SEE 303	3	SEE 310	3
SEE 325	3	SEE 398L	1
SEE 398L	1	L2 Proficiency (proficiency in a language other than English)	3
L2 Proficiency (proficiency in a language other than English)	4	Elective	3
		Fourth Year	Hours
		Fall	Spring
GEO 450	4	SEE 402	3
SEE 398L	2	HSS 384 or SOC 384	3
Advanced Philosophy or Religious Studies	3	SEE 398L	1
Social Science Elective	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
		Total credit hours: 127	18

Bachelor of Arts, Urban Sustainability Concentration

First Year			
Fall			
ASI 150	1	HST 103	3
CMM 100	3	MTH 207	3
ENG 100	3	PHL 103	3
SCI 190	3	SEE 250	3
MTH 148	3	ECO 203	3
REL 103	3		
		Second Year	Hours
		Fall	Spring
ENG 200	3	ASI 322	3
SSC 200	3	SCI 230 & 230L	4
SCI 210 & 210L	4	SEE 310	3
SEE 280	3	CAP Faith Traditions	3
Social Science Elective	3	L2 Proficiency (proficiency in language other than English)	4
		Third Year	Hours
		Fall	Spring
PHY 220	3	GEO 450	4
SEE 303	3	MEE 472	3
SEE 325	3	POL 371	3
SEE 398L	1	SEE 301	3
SEE 401	3	CAP Advanced History	3
Social Science Elective	3		
		Total credit hours: 127	16

Third Year			
Fall			
HST 355	3	ASI 320	3
MTH 148	3	ECO 435	3
SEE 325	3	ENG 370	3
SEE 398L	1	GEO 450	4
L2 Proficiency (proficiency in language other than English)	4	L2 Proficiency (proficiency in language other than English)	4
		Fourth Year	Hours
		Fall	Spring
SEE 303	3	SEE 398L	1
SEE 398L	1	SEE 402	3
Advanced Philosophy or Religious Studies	3	Advanced Philosophy or Religious Studies	3
Elective	3	Elective	3
Elective	3	Elective	3
		Total credit hours: 124	13

Bachelor of Science, Energy Concentration

First Year			
Fall			
ASI 150	1	BIO 152 & 152L	4
CMM 100	3	HST 103	3
ENG 100	3	MTH 169	4
GEO 208 & 208L	4	PHL 103	3
MTH 168	4	SEE 250	3
REL 103	3		
		Second Year	Hours
		Fall	Spring
ENG 200	3	ASI 320	3
MTH 218	4	ECO 203	3
PHY 206	3	MTH 367	3
SEE 280	3	PHY 207	3
SSC 200	3	CAP Faith Traditions	3
		Third Year	Hours
		Fall	Spring
PHY 220	3	GEO 450	4
SEE 303	3	MEE 472	3
SEE 325	3	POL 371	3
SEE 398L	1	SEE 301	3
SEE 401	3	CAP Advanced History	3
Social Science Elective	3		
		Total credit hours: 124	16

Fourth Year			
Fall	Hours	Spring	Hours
ECO 435		3 MEE 478	3
MEE 473		3 SEE 398L	1
SEE 398L		1 SEE 402	3
Advanced 435		3 Elective	3
Advanced Philosophy or Religious Studie		3 Elective	3
Elective		3	
		16	13

Total credit hours: 127

Bachelor of Science, Sustainable Watersheds Concentration

First Year			
Fall	Hours	Spring	Hours
ASI 150		1 BIO 152 & 152L	4
BIO 151 & 151L		4 HST 103	3
CMM 100		3 MTH 207	3
ENG 100		3 PHL 103	3
MTH 148		3 SEE 250	3
REL 103		3	
		17	16

Second Year			
Fall	Hours	Spring	Hours
ECO 203		3 CHM 123	3
ENG 200		3 GEO 116 & 116L	4
GEO 115 & 115L		4 SEE 325	3
SEE 280		3 SEE 401	3
SSC 200		3 CAP Faith Traditions	3
		16	16

Third Year			
Fall	Hours	Spring	Hours
BIO 452 & 452L		4 BIO 310 & 310L	4
ENG 370		3 BIO 409	3
GEO 455		4 GEO 309 & 309L	4
SEE 301		3 CAP Advanced History	3
SEE 303		3 Social Science Elective	3
SEE 398L		1	
		18	17

Fourth Year			
Fall	Hours	Spring	Hours
CHM 313		3 SEE 398L	1
SEE 398L		1 SEE 402	3
SEE 435		3 CAP Diversity and Social Justice	3
Advanced Philosophy or Religious Studies		3 Elective	3
Elective		3 Elective	3
		13	13

Total credit hours: 126

Courses

SEE 250. Introduction to Sustainability, Energy & the Environment. 3 Hours

Multidisciplinary introduction to sustainability, energy, and environment intersecting the arts, natural sciences, public policy, ethics, environmental justice, spirituality, and economic systems. Students will learn about complex issues from different disciplinary points of view, be introduced to current literature on sustainability, and learn how ethical, scientific and sociopolitical perspectives work together in the investigation of sustainability issues.

SEE 280. Sustainable Communities. 3 Hours

Introduction to fundamental concepts in Sustainability with a focus on the built environment, locality, and community. Includes investigation of how the relationship of social and environmental justice is intrinsic to the study of sustainable communities. Key concepts include social constructions of privilege and social inequality, as well as the characteristics of resilient and adaptive communities.

SEE 301. Global Change & Earth Systems. 3 Hours

Multidisciplinary introduction to the science of the earth system. Focus is on the interrelatedness of geological, biological, chemical and physical processes, and on methods used to understand both the past natural history and potential future scenarios for change in the earth system.

SEE 303. Constructions of Place. 3 Hours

Multidisciplinary, art and design-based course that explores the complex connections between our sense of place, space, and the environmental conditions that influence landscapes and communities on local and global levels. We use the history and practice of Eco-Art and comparisons of built and natural environments as a starting point to explore topics including art history, studio arts, photography, design and socially-engaged art through both scholarly and experiential, project-based learning.

SEE 310. Sustainability Scenarios. 3 Hours

Introduction to the structure, development, communication, and limitations of scenarios used for visioning trajectories and outcomes for human and environmental systems. The course more deeply examines the structure of scenarios as frameworks and stories for engaging critically with a multiplicity of possible outcomes. In analyzing and developing scenarios that address environmental risks and sustainable practices, students learn what a scenario is, how a scenario is created, and in what ways a scenario can be applied, compared and evaluated. Prerequisite(s): SEE 250 or SEE 280.

SEE 322. Cities and Suburbs: Urban Sustainability. 3 Hours

Exploration of urban sustainability that equips students with knowledge of the vital role cities can play in stewardship of the planet, while creating vibrant and inclusive opportunities for their inhabitants. Economic, social, and environmental forces that shape urban environments and the strategies needed to make cities and suburbs sustainable (economically vibrant, socially just, and environmentally sustainable) will be the focus. Prerequisite(s): SEE 250 or SSC 200 or by the approval of program director.

SEE 325. Sustainable Development Goals. 3 Hours

Analysis of the Sustainable Development Goals as a framework for approaching complex, international challenges of sustainable development, environmental sustainability, climate change mitigation and adaptation, and human rights. Background to the goals, metrics for evaluating progress toward the goals, and interactions between various goals will be evaluated through readings and discussion. Prerequisite(s): SEE 250 or SEE 280.

SEE 390. Special Topics in Sustainability, Energy and the Environment. 1-3 Hours

Examination of a specific problem or topic relating to sustainability, energy and the environment at the regional, national, or global scale including particular topics relating to global sustainability policy and sustainable development goals, human rights and climate change and access to modern energy systems. Students will analyze the topic from multiple perspectives possibly including artistic, technical, scientific, social, economic, ethical, and faith-based. Students will apply interdisciplinary knowledge to characterize systems, resources, and stakeholders relevant to the particular problem or topic and discuss solutions to establish more resilient and sustainable systems. Prerequisite(s): SEE 250.

SEE 398L. Experiential Learning Laboratory. 1-3 Hours

Students participate and contribute in experiential learning projects connected to the SEE 'verticals' (e.g., projects linked to UD external communities with long-term SEE commitment). In the experiences, students team with faculty mentors to address real needs in the targeted communities; analyzing and developing solutions from integrative perspectives; communicating results; identifying future projects for achieving desired impact or growing impact. Students are required to develop and maintain a portfolio to archive collective learning and results; document individual learning; and to document reflection about the impact of the experience on their vocation. Prerequisites: SEE 250.

SEE 401. Sustainability Research I. 3 Hours

Interdisciplinary exploration of the issues of sustainability. The scientific, moral, spiritual, social, political, historical, ethical and economic dimensions of sustainability will be explored. Exploration of the foundations of ethical theory and their application to environmental issues. Students will pursue a research project with the primary focus on sustainability on campus. Prerequisite(s): PHL 103 or ASI 112 or ASI 120; completion of General Education Natural Science or CAP Natural Science Requirements: junior or senior standing.

SEE 402. Sustainability Research II. 3 Hours

Interdisciplinary exploration of the issues of sustainability as they affect the Dayton community. Course will also explore political philosophy and the ethical foundations of public policy. Students will choose an in-depth community-based research project. CAPSTONE COURSE for the BS in Sustainability, Energy and Environment, or BA in Sustainability Studies. Prerequisites: PHL 103 or ASI 120; SEE 250; and Junior or Senior standing.

SEE 435. System Modeling for Sustainability. 3 Hours

Interdisciplinary approach and means to modeling as a tool for determining successful sustainability related systems. Students learn to translate qualitative scenario descriptions for environmental, socioeconomic and energy systems into quantitative output. The course focuses on defining needs and requirements for success, documenting requirements, then proceeding with systems design synthesis and system validation while considering environmental, socioeconomic, and resource impacts, as well as schedule. This subject emphasizes the links of systems fundamentals of decision theory, statistics, and optimization. It also introduces the most current, commercially successful computer-based systems modeling tools. Prerequisites: SEE 250 or MTH 148 or MTH 168 and MTH 207 or MTH 367 or DSC 210 or PSY 216.

SEE 477. Sustainability, Energy & Environment Honors Thesis Project. 3 Hours

First of two courses leading to the selection, design, investigation, and completion of an independent, original Honors Thesis project under the guidance of a faculty research advisor. Restricted to students in the University Honors Program with permission of the program director and department chairperson. Students pursuing an interdisciplinary thesis topic may register for three semester hours each in two separate disciplines in consultation with department chairpersons. Prerequisite(s): Approval of University Honors Program.

SEE 478. Sustainability, Energy & Environment Honors Thesis Project. 3 Hours

Second of two courses leading to the selection, design, investigation, and completion of an independent, original Honors Thesis project under the guidance of a faculty research advisor. Restricted to students in the University Honors Program with permission of the program director and department chairperson. Students pursuing an interdisciplinary thesis topic may register for three semester hours each in two separate disciplines in consultation with department chairpersons. Prerequisite(s): Approved 477; approval of University Honors Program.

SEE 490. Experiential Study in Sustainability, Energy and the Environment. 1-3 Hours

Experiential study of a topic in Sustainability, Energy and the Environment. Students will study a topic of their choosing in consultation with instructor or faculty advisor. Topics will be problem-driven and focused on developing sustainable solutions at the local, national, or global scale. Prerequisite(s): SEE 250.