ENVIRONMENT & SUSTAINABILITY (BA)

College of Arts and Sciences

Program Website (https://as.cornell.edu/department_program/environment-sustainability-program/)

CIP: 03.0104 | **HEGIS:** 1999.20 | **NYSED:** 39709

Program Description

The Environment & Sustainability (E&S) major is available in the College of Agriculture and Life Sciences and the College of Arts and Sciences. The E&S major spans perspectives needed to build a world with more socially just and sustainable conditions for biodiversity and human prosperity. E&S provides students with a basis for understanding the structure and functioning of the earth's environment, and critically analyzing the sustainability of social-ecological systems. How do we as humans value, use, benefit from, and protect the environment? What is sustainability and how should it be measured? Students take courses in environmental natural sciences, social sciences, humanities, and examine how sustainability challenges are multidisciplinary and require integrative solutions.

The E&S curriculum relies upon a core foundation in biology, physical and social science, humanities, economics, and statistics, supplemented by coursework and experiences integrating these topics of study. In addition, E&S focused electives allow students to pursue greater depth in specific disciplines encompassing environment and sustainability issues, taking advantage of a diverse range of courses in two colleges.

Requirements for the E&S major are the same in both colleges, but distinct college requirements will result in students taking different overall courses to complete their degrees. All students complete a set of foundation courses (core curriculum (https://cals.cornell.edu/environment-sustainability/education/core-curriculum/)) after which students tailor their upper-division courses by selecting one of six focused electives: Environmental Biology and Applied Ecology (EBAE), Environmental Humanities (EH), Environmental Policy and Governance (EPG), Land, Air and Water Resources (LAWR), Sustainable Business and Environmental Economics (SBEE), or a Student-Designed Focused Elective (SD).

E&S requirements leave room for students to study abroad, engage in research and pursue other opportunities offered by Cornell. More information on the E&S Research Honors Program (https://cals.cornell.edu/environment-sustainability/research-opportunities/honors-program/) can be found on the E&S program page (https://cals.cornell.edu/environment-sustainability/research-opportunities/). Prospective students are encouraged to explore the learning outcomes, curriculum requirements, and career paths pursued by recent graduates.

The E&S Program Office is located in 117 Kennedy Hall on the Cornell Ithaca campus. Instruction mode is in-person for courses in the E&S curriculum unless otherwise noted. For any questions, please email environment@cornell.edu.

Program Information

- Instruction Mode: In Person
- Location: Ithaca, NY
- Minimum Credits for Degree: 120

Program Requirements

- Students declaring or adding the E&S major must complete at least three Core Curriculum courses beforehand. This does not apply to first-year CALS students who are admitted directly into the E&S major.
- Once matriculated, one class in the Core Curriculum may be taken S/U. All other requirements must be taken for a letter grade unless the course is offered S/U only.
- A grade of C- or higher must be earned to meet major requirements.
- 10 courses with a minimum of 28 total credits are required for the Core.
- 7-9 courses with a minimum of 21 credits are required for the focused elective requirements.

In addition to the major requirements outlined below, all students must meet their college graduation requirements:

- Arts and Sciences Graduation Requirements

Foundation Course

Code	Title	Hours
NTRES 1101	Understanding Environment and Sustainability (crosslisted)	3

Social Science

Code	Title	Hours
NTRES 2201	Society and Natural Resources (crosslisted)	3

Biology

Choose one course:

Code	Title	Hours
Ecology		
BIOEE 1610	Introductory Biology: Ecology and the Environment	3-4
BIOSM 1610	Ecology and the Marine Environment	3
Evolution/Diversity		
BIOEE 1780	An Introduction to Evolutionary Biology and Diversity	4-5
BIOEE 1781	Introduction to Evolution and Diversity	4
BIOSM 1780	Evolution and Marine Diversity	4

Note:

- BIOSM designates summer courses at Shoals Marine Laboratory (https://www.shoalsmarinelaboratory.org/).
- The EBAE and LAWR focused electives require more than one biology course. See focused elective descriptions (https://cals.cornell.edu/environment-sustainability/education/concentrations/) for details.
- Advanced placement (AP) biology credits are not accepted for substitution or placement out of any introductory biology course.

Chemistry/Physics

Choose one course:

Code	Title	Hours
CHEM 1560 & CHEM 1561	Introduction to General Chemistry and Introduction to General Chemistry Laboratory	4
CHEM 2070 & CHEM 2071	General Chemistry I and General Chemistry I Laboratory	4
EAS 1600	Environmental Physics	3

Note:

- The EBAE and LAWR focused electives require students to complete at least one physics and one chemistry course.
- AP/IB/Case Credit for Chemistry and Physics accepted to fulfill this requirement.

Statistics

Choose one course:

Code	Title	Hours
AEM 2100	Introductory Statistics	4
BIOEE 1760	Biostatistics with R programming language	3
BTRY 3010	Statistics I (crosslisted)	4
MATH 1710	Statistical Theory and Application in the Real World	4
PUBPOL 2100	Introduction to Statistics	4
PSYCH 2500	Statistics and Research Design	3
SOC 3010	Statistics for Sociological Research	4
STSCI 2100	Introductory Statistics and Data Science (crosslisted)	4
STSCI 2150	Introductory Statistics for Biology	4

Note:

- AP/IB Statistics credit accepted to fulfill this requirement.

Humanities

Choose one course:

Code	Title	Hours
ANTHR 2201	Early Agriculture (crosslisted)	3
ANTHR 2420	Nature-Culture: Ethnographic Approaches to Human Environment Relations (crosslisted)	4
ANTHR 2482	Anthropology of Climate Change (crosslisted)	3
ASIAN 2273	Religion and Ecological Sustainability (crosslisted)	3
BSOC 2061	Ethics and the Environment (crosslisted)	4
COML 2036	Literature and the Elements of Nature	3
ENGL 3795	Communicating Climate Change	3
ENGL 4675	The Environmental Imagination in American Literature (crosslisted)	4
HIST 2581	Environmental History (crosslisted)	4
NTRES 3330	Ways of Knowing: Indigenous and Place-Based Ecological Knowledge (crosslisted)	3
PHIL 1440	Ethics of Eating	3

Economics

Choose one course:

Code	Title	Hours
AEM 1500	An Introduction to the Economics of Environmental and Natural Resources (crosslisted)	3
AEM 2500	Environmental and Resource Economics (crosslisted)	3

Note:

- The SBEE focused elective requires AEM 2500 Environmental and Resource Economics. ECON 1110 Introductory Microeconomics is a prerequisite for AEM 2500.
- AP/IB credit accepted for ECON 1110 and ECON 1120.

Field/Engaged Experience

Choose one course:

Code	Title	Hours
BIOEE 2525 & BIOEE 2526 & BIOEE 2527	Ecology and Conservation of Wildlife in the Neotropics and Ecology and Conservation of Wildlife in the Neotropics II and Neotropical Wildlife Biology	4
BIOEE 3611	Field Ecology	3
BIOEE 4570 & BIOEE 4571	Limnology: Ecology of Lakes, Lectures and Limnology: Ecology of Lakes, Laboratory	5
ENTOM 2120	Insect Biology	4
NTRES 2100	Introductory Field Biology (crosslisted)	4
NTRES 2400	Field Methods in Avian Ecology (crosslisted)	3
NTRES 2600	Field Research in the Ecological Arts (crosslisted)	3
NTRES 3020	Earth Projects (crosslisted)	3
NTRES 3150 & NTRES 3151 & NTRES 3152	Introduction to Conservation Bioacoustics and Conservation Bioacoustics Field Course Preparation and Field Methods in Conservation Bioacoustics: Hawai'i Experience	5.5
NTRES 4560	Stream Ecology (crosslisted)	4
BIOSM 2500	Coastal Habitat Field Research Methods	3
BIOSM 3330	Marine Parasitology and Disease	3
BIOSM 3340	Marine Invasive Species: Ecology, Evolution and Management	3
BIOSM 3450	Marine Mammal Biology	3
BIOSM 3650	Underwater Research	3

Note:

- BIOSM designates summer course at Shoals Marine Laboratory (https://www.shoalsmarinelaboratory.org/) (SML).

Sustainability Science Colloquium

Choose one course:

Code	Title	Hours
ENVS 2000	Environment and Sustainability Colloquium (crosslisted)	1
ENVS 2010	Discussions of Environment and Sustainability (crosslisted)	3

BEE 2000	Perspectives on the Climate Change Challenge (crosslisted)	1.5
BEE 2010		3

Capstone Course

NOTE: Only juniors and seniors are eligible for capstone requirement fulfillment.

Choose one from the following courses:

Code	Title	Hours
BIOSM 3750	Marine Ecosystem Research and Management	3
COML 4103	Nabokov, Naturally (crosslisted)	3
ENGL 4795	Climate Communications Capstone	3
ENVS 4940	Capstone Special Topics Course in Environment and Sustainability	3-4
HIST 4262	Environmental Justice: Past, Present, Future (crosslisted)	4
NTRES 4400	Nature-Based Climate Solutions?	3
NTRES 4500	Climate Solutions Capstone (crosslisted)	3
NTRES 4600	Planning for Environmental Conservation and Sustainability (crosslisted)	3
NTRES 4700	Art and Science of the Mohawk River Watershed (crosslisted)	3
NTRES 4800	Wildlife Corridor Conservation & Crossing Design (crosslisted)	3

Note:

- BIOSM designates summer course at Shoals Marine Laboratory (https://www.shoalsmarinelaboratory.org/) (SML).

Focused Electives

The E&S major comprises an interdisciplinary core curriculum coupled with the completion of courses in a thematic focused elective of your choice. All students must select one of six focused electives, consisting of seven to nine additional courses beyond the core. All students should familiarize themselves with the requirements of focused electives in which they may be interested. Several focused electives require students to complete specific courses as part of their core requirements.

Students must declare their focused elective by pre-enroll in Spring of their sophomore year. External/internal transfers and Arts & Sciences students declaring their major in sophomore year will be required to submit a focused elective plan before pre-enroll in their first semester of junior year.

- Students may not use the same course to fulfill both a core and focused elective requirement
- Students may not use the same course within a focused elective to fulfill more than one requirement.
- (*) marks courses common to both a core requirement and the focused elective.

Focused Electives (Acronyms)

- Environmental Biology & Applied Ecology (EBAE)
- Environmental Humanities (EH)
- Environmental Policy & Governance (EPG)
- Land, Air & Water Resources (LAWR)
- Sustainable Business & Environmental Economics (SBEE)
- Student-Designed Focused Elective (SD)

Environmental Biology & Applied Ecology Focused Elective

The Environmental Biology and Applied Ecology (EBAE) focused elective provides students with the scientific basis for understanding the sustainability of various ecological systems. Students will learn advanced principles of biology and ecology and their application to problems of environmental management. Students with interests in many topics may undertake this focused elective, for example, wildlife and fisheries management; forest, wetland and aquatic ecology; environmental microbiology; conservation science; endangered and invasive species management; biological and ecological consequences of pollutants in the environment.

Required Courses from Core Curriculum

Code	Title	Hours
BIOEE 1610	Introductory Biology: Ecology and the Environment	3-4
EAS 1600	Environmental Physics	3

Additional Required Courses:

Biological Science (Choose One)

Code	Title	Hours
BIOEE 1780	An Introduction to Evolutionary Biology and Diversity	4-5
or BIOEE 1781	Introduction to Evolution and Diversity	
BIOSM 1780	Evolution and Marine Diversity	4

Chemistry (Choose One)

Recommended:

Code	Title	Hours
CHEM 1560 & CHEM 1561	Introduction to General Chemistry and Introduction to General Chemistry Laboratory	4

Other chemistry options include:

Code	Title	Hours
CHEM 1570	Introduction to Organic and Biological Chemistry	3
CHEM 2070 & CHEM 2071	General Chemistry I and General Chemistry I Laboratory	4
CHEM 2080 & CHEM 2081	General Chemistry II and General Chemistry II Laboratory	4

- AP/IB/CASE Chemistry credit accepted to fulfill this requirement.

Calculus (Choose One)

Code	Title	Hours
MATH 1106	Modeling with Calculus for the Life Sciences	4
MATH 1110	Calculus I	4

- AP/IB/CASE Calculus credit accepted to fulfill this requirement.

Note: It is recommended (but not required) that students take a second semester of calculus, MATH 1120 Calculus II.

Quantitative (Choose One)

Choose from any quantitative field that aligns with your career goals. Some fields/courses from which to choose are an additional calculus or statistics beyond the core and concentration requirements, population modeling (BIOEE or NTRES) and/or applied analytical courses, computer programming, or Geographical Information Systems (GIS). See EBAE

webpage for suggestions. Additional courses may be considered with approval from the E&S Program.

Code	Title	Hours
AEM 2770	Excursions in Computational Sustainability	3
BIOEE 3550	Data Analysis and Visualization in Ecology and Environmental Science	3
BTRY 3020	Statistics II	4
CS 1110	Introduction to Computing: A Design and Development Perspective	4
EAS 2900	Introduction to Programming for Meteorology and Climate Science	3
ENTOM 3030	Applied Statistics: Biological Experiments in Practice	4
GDEV 4295	Data Science Workshop with R	3
MATH 1120	Calculus II	4
NTRES 4100	Advanced Conservation Biology	4
PLSCI 2200	Introduction to Mapping and Spatial Analysis with GIS	3
STSCI 3110	Applied Probability and Statistics	4

Introductory Genetics (Choose One)

Code	Title	Hours
NTRES 2830	DNA, Genes and Genetic Diversity	4
BIOMG 2800 & BIOMG 2801	Lectures in Genetics and Genomics and Laboratory in Genetics and Genomics	5

Advanced Ecology (Choose One)

Code	Title	Hours
BIOEE 3610	Advanced Ecology	4
NTRES 3100	Applied Population Ecology	3

Elective Courses

Three additional courses from EBAE elective lists: Choose one course from **List 1**, one course from **List 2** and one more course from either list that must be at the 4000 level or above.

List 1 - Ecosystems: The Physical and Biological Environment

Code	Title	Hours
BIOEE 3610	Advanced Ecology	4
BIOEE 3690	Chemical Ecology	3
BIOEE 4570	Limnology: Ecology of Lakes, Lectures	3
BIOEE 4690	Food, Agriculture, and Society	3
BIOEE 4780	Ecosystem Biology and Global Change	4
EAS 3030	Introduction to Biogeochemistry	4
NTRES 3150	Introduction to Conservation Bioacoustics	3
NTRES 3240	Sustainable, Ecologically Based Management of Water Resources	3
NTRES 3250	Forest Management and Maple Syrup Production	3
NTRES 4560	Stream Ecology (crosslisted)	4
PLSCI 3210	Soil and Crop Management for Sustainability	3
PLSCI 4730	Ecology of Agricultural Systems	4.5
PLSCI 4660	Soil Ecology	3-4

List 2 - Organisms: Plants, Animals, Microbes

Code	Title	Hours
BIOEE 2740	The Vertebrates: Comparative Anatomy, Function, Paleontology, and Evolution	4
BIOEE 3610	Advanced Ecology	4
BIOEE 3611	Field Ecology	3
BIOEE 3730	Biodiversity and Biology of the Marine Invertebrates	3
BIOEE 4460	Plant Behavior and Biotic Interactions, Lecture	3
BIOEE 4500		3
BIOEE 4660	Physiological Ecology, Lectures	3
BIOEE 4700 & BIOEE 4701	Herpetology, Lectures and	3
BIOEE 4750	Ornithology, Lectures	3
BIOEE 4760	Ichthyology: Biology of Fishes, Lectures	3
BIOEE 4800	Ecological Genetics	4
BIOMI 2900	General Microbiology Lectures	3-4
BIOMI 3500	Marine Microbes and Disease in a Changing Ocean (crosslisted)	3
BIOMI 6300	Computational Approaches for Microbial Systems	3
BIOSM 3290	Field Animal Behavior	3
BIOSM 3330	Marine Parasitology and Disease	3
BIOSM 3450	Marine Mammal Biology	3
BIOSM 3740	Field Ornithology	3
BIOSM 4650	Shark Biology and Conservation	3
ENTOM 2120	Insect Biology	4
ENTOM 3150	Spider Biology	3
ENTOM 3440	Insect Conservation Biology (crosslisted)	3
ENTOM 3630	Bugs in Bugs– Insect Pathology and Immunity	3
ENTOM 3755	Social Animal Behavior: Arthropods to Apes	3
ENTOM 4440	(crosslisted)	4
ENTOM 4550	Insect Ecology (crosslisted)	4
NTRES 3100	Applied Population Ecology	3
NTRES 3110	Fish Ecology, Conservation, and Management	3
NTRES 3150	Introduction to Conservation Bioacoustics	3
NTRES 3260	Applied Conservation Ecology (crosslisted)	3
NTRES 3400	Molecular Tools for Ecology, Conservation, and Natural Resource Management	3
NTRES 4100	Advanced Conservation Biology	4
NTRES 4120	Wildlife Population Analysis: Techniques and Models	3
NTRES 4280	Principles and Practices of Applied Wildlife Science	3
PLSCI 2410	Introductory Plant Diversity and Evolution	4
PLSCI 3010	Biology and Management of Plant Diseases	4
PLSCI 3150	Weed Biology and Management	4
PLSCI 3420	Plant Physiology, Lectures	3
PLSCI 4300	Mycology	3

Environmental Humanities

The Environmental Humanities (EH) focused elective emphasizes the important role the humanities, arts, and interpretive social sciences can play not just in producing solutions to environmental problems but in understanding how those problems arose and reframing them to improve environmental outcomes. All humans, including environmental scientists, engage in the arts of imagination, narration, reflection, and persuasion that lie at the core of humanistic fields of study. The environmental humanities explore how the environment is constructed and represented in relation to humans, and how these divergent visions impact both

knowledge and action. Courses exploring subjects such as art, culture, ethics, history, and literature can help students appreciate the underlying values and belief systems that drive much of human behavior vis-à-vis the biological and geo-physical systems that we inhabit and transform.

The Environmental Humanities focused elective is designed for students who wonder why so many innovative, promising scientific and technical solutions to environmental problems have foundered in particular social, cultural, and political contexts—and are interested in learning how to mobilize humanistic knowledges and skills to ensure more sustainable and livable futures.

Career options available to students who complete the EH course of study include policy, media, corporate sustainability, education, law, and the non-profit sector.

- **Minimum of 24 credits** (8 courses) selected from the following categories.
- With approval from the E&S Program, additional courses may be considered, including the Society for the Humanities (SHUM) and other one-time course offerings.
- (*) marks courses common to both the humanities core requirements and the concentration. **The same course may not fill both requirements.**

Anthropology

Code	Title	Hours
ANTHR 2201	Early Agriculture	3
ANTHR 2420	Nature-Culture: Ethnographic Approaches to Human Environment Relations (crosslisted) *	4
ANTHR 2482	Anthropology of Climate Change (crosslisted)	4
ANTHR 3152		3
ANTHR 3230	Humans and Animals (crosslisted)	4
ANTHR 3248	Finger Lakes and Beyond: Archaeology of the Native Northeast (crosslisted)	3
ANTHR 3325	Food and Work	3
ANTHR 3422	Culture, Politics, and Environment in the Circumpolar North (crosslisted)	3
ANTHR 4101	The Entangled Lives of Humans and Animals (crosslisted)	4
ANTHR 4442	Toxicity (crosslisted)	3

Africana Studies

Code	Title	Hours
ASRC 3565	Black Ecoliterature (crosslisted)	3

Asian Studies

Code	Title	Hours
ASIAN 2273	Religion and Ecological Sustainability (crosslisted)	3

Biology & Society

Code	Title	Hours
BSOC 2061	Ethics and the Environment (crosslisted) *	4

Classics

Code	Title	Hours
CLASS 2010	Discussions of Environment and Sustainability (crosslisted)	3
CLASS 2729	Climate, Archaeology and History (crosslisted)	3
CLASS 3750	Introduction to Dendrochronology (crosslisted)	4

Comparative Literature

Code	Title	Hours
COML 2036	Literature and the Elements of Nature *	3
COML 3111	Literature, Art and Environment	3
COML 3264	Poetics, Economies, Ecologies	3
COML 3336	Border Environments (crosslisted)	3
COML 3435	Art, Nature, and Empire in Russian and Soviet Culture (crosslisted)	3
COML 4902	Environmental Humanities: Theories and Methods (crosslisted)	3

English

Code	Title	Hours
ENGL 3795	Communicating Climate Change *	3
ENGL 4675	The Environmental Imagination in American Literature	4
ENGL 4795	Climate Communications Capstone (crosslisted) *	3

French

Code	Title	Hours
FREN 4250	(crosslisted)	3

History

Code	Title	Hours
HIST 2371	US Climate Catastrophes: Rethinking US History through the Climate	4
HIST 2581	Environmental History (crosslisted) *	4
HIST 4262	Environmental Justice: Past, Present, Future (crosslisted)	4

History of Art and Visual Studies

Code	Title	Hours
ARTH 2255	Ecocriticism and Visual Culture	4
ARTH 3620	After Nature: Art and Environmental Imagination	4

Natural Resources

Code	Title	Hours
NTRES 3330	Ways of Knowing: Indigenous and Place-Based Ecological Knowledge (crosslisted) *	3

Philosophy

Code	Title	Hours
PHIL 1440	Ethics of Eating *	3

Science & Technology Studies

Code	Title	Hours
STS 3181	Living in an Uncertain World: Science, Technology, and Risk (crosslisted)	4
STS 4131	Comparative Environmental History (crosslisted)	3
STS 4460	Lightscapes (crosslisted)	4

Society for the Humanities

Code	Title	Hours
SHUM 4697		3

Spanish

Code	Title	Hours
SPAN 4690	Latin American and Latinx Environmentalisms	3

Environmental Policy & Governance Focused Elective

E&S students with a focused elective area in Environmental Policy and Governance (EPG) will study policy and broader social dimensions of environmental issues. Foundational courses in several realms of the environmental social sciences will acquaint students with different approaches to studying human-environment relationships. Students will also learn about the design, construction, implementation and evaluation of environmental policy and management. Whether a student is interested in a policy career or social-environmental analysis, this focused elective area provides a foundation for understanding human-environmental relationships holistically.

- Students may not use the same course to fulfill both a core and focused elective requirement.
- (*) denotes courses that may be used to fulfill core requirements.

Seven courses beyond the E&S core requirements consisting of the following:

Foundational Themes (4 Courses)

The **four foundational themes** provide a grounding in key concepts of environmental action and management. **Environment and Law** introduces legal tools relevant to environmental issues. **Environment and Human Behavior** gives students approaches to understanding varying ways that people and human communities create, understand, struggle over, and resolve environmental concerns. **Environment and Institutions** acquaints students with key institutions through which people use or interact with environmental resources and equips students to analyze variation and change in environmental management. **Environment and Policy** provides insight about how people construct and implement policies and regulations concerning natural resources and the environment.

Environment and Law (Choose One)

Code	Title	Hours
CRP 4590	Land Use Law	3
LAW 4131	The Nature, Functions, and Limits of Law (crosslisted)	4
LAW 4330	Environmental Law and Policy (crosslisted)	3
LAW 4443	International Environmental Law and Policy	3
LAW 6361	Environmental Law	3
LAW 7358	International Environmental Law	3
PUBPOL 5132	Legal Aspects of Public Agency Decision-Making	3

Environment and Human Behavior (Choose One)

Code	Title	Hours
ANTHR 2420	Nature-Culture: Ethnographic Approaches to Human Environment Relations (crosslisted) *	4
BSOC 2061	Ethics and the Environment (crosslisted) *	4
DEA 1500	Introduction to Environmental Psychology (crosslisted)	3
GDEV 3240	Environmental Sociology (crosslisted)	3
NTRES 3330	Ways of Knowing: Indigenous and Place-Based Ecological Knowledge (crosslisted) *	3

Environment and Institutions (Choose One)

Code	Title	Hours
AEM 4500	Resource Economics (crosslisted)	3
AEM 4510	Environmental Economics (crosslisted)	3
CRP 3860	Planning for Sustainable Transportation	3
GOVT 1817	Making Sense of World Politics	4
GOVT 3613 & GOVT 3614 & GOVT 3623	Politics of Sustainable Development in Latin America I and Politics of Sustainable Development in Latin America II and Politics of Sustainable Development in Latin America III (crosslisted)	4
HIST 2581	Environmental History (crosslisted) *	4
NTRES 3311	Environmental Governance (crosslisted)	3
NTRES 4600	Planning for Environmental Conservation and Sustainability (crosslisted) *	3

Environment and Policy (Choose One)

Code	Title	Hours
BME 4440	Science Policy Bootcamp: Concept to Conclusion	3
GOVT 3032	Politics of Public Policy in the U.S. (crosslisted)	4
GOVT 3583	Comparative Public Policy: Political Pathways to Equality (crosslisted)	4
PUBPOL 3590	Environmental Justice and Policy	3
PUBPOL 3670	Economics and Environmental Policy (crosslisted)	3
PUBPOL 3730	Comparative Environmental Policy ((crosslisted))	3
PUBPOL 3910 & PUBPOL 5441	Federal Policy Making in Action and Effective Writing for Public Policy	2.5

Methods/Tools Course

Choose one of the following methods/tools courses to acquire tools that will enhance your ability to do research and analysis on the social dimensions of environments. Students may not use the same course to fulfill both a core and focused elective requirement. (*) denotes courses that may be used to fulfill core requirements.

Code	Title	Hours
AEM 2770	Excursions in Computational Sustainability (crosslisted)	3
CRP 3555	Environmental Planning and Practice	3
CRP 4080	Introduction to Geographic Information Systems (GIS)	4
EAS 2400	Observing the Earth: Remote Sensing and GIS	3
GDEV 2130	Introduction to Social Science Research Methods	3
GDEV 3140	Mapping Our Worlds: Cartography and Analysis in GIS	4
GDEV 3680	Environmental Decision Making	3
NTRES 4600	Planning for Environmental Conservation and Sustainability (crosslisted) *	3
PLSCI 2200	Introduction to Mapping and Spatial Analysis with GIS	3
PLSCI 4200	Geographic Information Systems (GIS): Concepts and Application	3

Additional Environmental Courses (Choose Two)

Students may not use the same course to fulfill both a core and focused elective requirement. For example, if you took HIST 2581 Environmental History to fulfill the Humanities core requirement, you

could not also count it toward this requirement, but you could additionally take NTRES 3330 Ways of Knowing: Indigenous and Place-Based Ecological Knowledge for this requirement. Courses not in this list that are relevant to social and policy dimensions of environmental issues can be considered for this requirement with approval of the E&S Program. (*) denotes courses that may be used to fulfill core requirements.

Code	Title	Hours
AEM 2000	Contemporary Controversies in the Global Economy	3
AEM 4500	Resource Economics (crosslisted)	3
AEM 4510	Environmental Economics	3
AEM 4880	Global Food, Energy, and Water Nexus – Engage the US, China, and India for Sustainable Future	3-4
ANTHR 2420	Nature-Culture: Ethnographic Approaches to Human Environment Relations (crosslisted) *	4
ANTHR 3422	Culture, Politics, and Environment in the Circumpolar North (crosslisted)	3
ANTHR 4410		3
BIOEE 4690	Food, Agriculture, and Society (crosslisted)	3
BSOC 2061	Ethics and the Environment (crosslisted) *	4
CEE 5970	Risk Analysis and Management	3
COML 2036	Literature and the Elements of Nature	3
COMM 2850	Communication, Environment, Science, and Health (crosslisted)	3
COMM 3210	Communication and the Environment	3
COMM 4860	Risk Communication	3
CRP 3840	Green Cities	3
CRP 4080	Introduction to Geographic Information Systems (GIS)	4
CRP 5080	Introduction to GIS for Planners	4
DEA 1500	Introduction to Environmental Psychology (crosslisted)	3
DEA 4220	Ecological Literacy and Design (crosslisted)	3
FSAD 3200	Global Textile and Apparel Sustainability	3
GDEV 2010	Population and Social Change (crosslisted)	3
GDEV 2065	Environment and Development	3
GDEV 3010	Theories of Society and Development	3
GDEV 3020	Political Ecologies of Health	3
GDEV 3031		3
GDEV 3150	Climate Change and Global Development: Living in the Anthropocene	3
GDEV 3400	Agriculture, Food, Sustainability and Social Justice	3
GOVT 3781	Human Rights in Law and Culture	3
HIST 2581	Environmental History (crosslisted) *	4
NS 4450	Toward a Sustainable Global Food System: Food Policy for Developing Countries (crosslisted)	3
NTRES 3330	Ways of Knowing: Indigenous and Place-Based Ecological Knowledge (crosslisted) *	3
NTRES 4320		3
SOC 3650	Sociology of Disasters	3
STS 3181	Living in an Uncertain World: Science, Technology, and Risk (crosslisted)	4
STS 4131	Comparative Environmental History	3

Land, Air & Water Resources Focused Elective

The Land, Air, and Water Resources (LAWR) focused elective is especially good for students interested in climate change, soil, air, and water pollution, and environmental consequences of food production. The focused elective in LAWR provides a sound foundation in the diversity and integration of Earth's environments, as well as data science needed for environmental studies. Coursework includes atmospheric sciences, ecosystem ecology, soil science, water systems, and ways to compare among each.

Required Courses from Core Curriculum

Code	Title	Hours
BIOEE 1610	Introductory Biology: Ecology and the Environment	3-4
EAS 1600	Environmental Physics	3

Additional Required Courses (Choose Four)

Choose four courses beyond the E&S core requirements consisting of the following:

Biological Science (Choose One)

Code	Title	Hours
BIOG 1440	Introductory Biology: Comparative Physiology	3
BIOEE 1780	An Introduction to Evolutionary Biology and Diversity	4-5
or BIOEE 1781	Introduction to Evolution and Diversity	
or BIOSM 1780	Evolution and Marine Diversity	
BIOMG 1350	Introductory Biology: Cell and Developmental Biology	3

Chemistry

Code	Title	Hours
CHEM 1560 & CHEM 1561	Introduction to General Chemistry and Introduction to General Chemistry Laboratory	4
CHEM 2070 & CHEM 2071	General Chemistry I and General Chemistry I Laboratory	4

- AP/IB/Case accepted to fulfill this requirement.

Quantitative (Choose One)

Code	Title	Hours
MATH 1106	Modeling with Calculus for the Life Sciences	4
MATH 1110	Calculus I	4

- AP/IB/Case credit accepted to fulfill this requirement.

Biogeochemistry (Choose One)

Code	Title	Hours
EAS 3030	Introduction to Biogeochemistry	4
PLSCI 3650	Environmental Chemistry: Soil, Air, and Water	3

LAWR Elective Courses

Choose five additional courses from the LAWR elective lists:

- One course from LAWR List 1: Chemical/Physical environmental science
- One course from LAWR List 2: Environmental informatics
- One course from LAWR List 3: Integrated ecosystems/ecology
- One additional elective from LAWR List 1, 2, or 3
- One additional elective from LAWR List 1, 2, or 3

Other Cornell University courses similar in content and level (3000-level or above), but not on these lists, may be chosen in consultation with your advisor.

LAWR List 1 – Chemical/Physical Environmental Science Atmosphere/Climate

Code	Title	Hours
EAS 1310	Basic Principles of Meteorology	3
EAS 2680	Climate and Global Warming	3
EAS 3050	Climate Dynamics	3
EAS 3340	Microclimatology	3
EAS 3420	Atmospheric Dynamics	3
BEE 4800	Atmospheric Chemistry: From Air Pollution to Global Change (crosslisted)	3

Terrestrial/Soil Science/Geology

Code	Title	Hours
EAS 2250	The Earth System	4
EAS 3010	Evolution of the Earth System	4
EAS 3030	Introduction to Biogeochemistry	4
PLSCI 2600	Soil Science	4
PLSCI 3210	Soil and Crop Management for Sustainability	3
PLSCI 3630	Soil Genesis, Classification, and Survey	4
PLSCI 3650	Environmental Chemistry: Soil, Air, and Water	3

Water Management/Hydrology

Code	Title	Hours
BEE 3500	Heat and Mass Transfer in Biological Engineering	4
BEE 3710	Physical Hydrology for Ecosystems	3
BEE 4110		
BEE 4270	Water Measurement and Analysis Methods	3
BEE 4710	Introduction to Groundwater (crosslisted)	3
CEE 3310	Fluid Mechanics	4
EAS 3530	Physical Oceanography	3
NTRES 3240	Sustainable, Ecologically Based Management of Water Resources	3

LAWR List 2 – Environmental Informatics

Code	Title	Hours
BIOEE 3550	Data Analysis and Visualization in Ecology and Environmental Science	3
CRP 4080	Introduction to Geographic Information Systems (GIS)	4
EAS 2400	Observing the Earth: Remote Sensing and GIS	3
EAS 2900	Introduction to Programming for Meteorology and Climate Science	3
PLSCI 2200	Introduction to Mapping and Spatial Analysis with GIS	3
PLSCI 4200	Geographic Information Systems (GIS): Concepts and Application	3

LAWR List 3 – Integrated Ecosystems/Ecology

Code	Title	Hours
BIOEE 4570	Limnology: Ecology of Lakes, Lectures	3
BIOEE 4620		3
BIOEE 4780	Ecosystem Biology and Global Change	4
NTRES 3220	Global Biodiversity	3
NTRES 4560	Stream Ecology (crosslisted)	4
PLSCI 4730	Ecology of Agricultural Systems	4.5
PLSCI 4660	Soil Ecology	3-4
PLSCI 4720	Nutrient and Carbon Cycling and Management in Ecosystems	3

Sustainable Business & Environmental Economics Focused Elective

E&S students with a focused elective in Sustainable Business and Environmental Economics will use economic principles to understand the interrelation between society and the environment and study how environmental policies should be structured to address the environmental challenges by understanding behavioral responses of economic agents to these policies. Total credits required: 21.5 credits.

Required Courses from Core Curriculum:

Code	Title	Hours
AEM 2500	Environmental and Resource Economics	3

Additional Required Courses:

Code	Title	Hours
ECON 1110	Introductory Microeconomics	3
ECON 1120	Introductory Macroeconomics	3
ECON 3030	Intermediate Microeconomic Theory	4
or AEM 2600	Managerial Economics	
MATH 1110	Calculus I	4

- AP/IB/Case credit accepted where applicable

Resource/Environmental Economics (Choose a Minimum of 5.5 Credits, 2-3 Courses)

Code	Title	Hours
AEM 3115	Evaluation of Green Energy Strategies and Markets	3
AEM 4090	Environmental Finance and Markets	3
AEM 4490	Financial Markets and Sustainability	3
AEM 4500	Resource Economics	3
AEM 4510	Environmental Economics (crosslisted)	3
or ECON 3850	Economics and Environmental Policy	
AEM 4515		3
AEM 4585	Sustainable Business	3
AEM 4940	Undergraduate Special Topics in Applied Economics and Management [1]	1-4
NBA 6030	Strategies for Sustainability	1.5
NBA 6380	Finance and Sustainable Global Enterprise Colloquium (crosslisted)	1

[1] Topic approved by advisor.

Data Analysis/Econometrics (Choose One)

Code	Title	Hours
AEM 2770	Excursions in Computational Sustainability (crosslisted)	3
AEM 2840	Python Programming for Data Analysis and Business Modeling	3
AEM 2850	R Programming for Business Analytics and Data Visualization	3
AEM 3100	Business Statistics	3

AEM 4110	Introduction to Econometrics	3
CRP 4080	Introduction to Geographic Information Systems (GIS)	4
ECON 3120	Applied Econometrics	4
ECON 3140	Econometrics	4
ILRST 2110	Statistical Methods for the Social Sciences II	4
PLSCI 2200	Introduction to Mapping and Spatial Analysis with GIS	3
STSCI 4060	Python Programming and its Applications in Statistics	4

Student-Designed Focused Elective

The Student-Designed (SD) Focused Elective within the E&S major allows students to pursue a specific intellectual/professional goal not encompassed by the structured focused elective (EBAE, EH, EPG, LAWR and SBEE). These structured concentrations were carefully designed by E&S faculty to serve the breadth of interests for most students in the major, and they are organized around learning goals that position students to develop expertise and professional success in core environmental fields.

If a student finds that the 5 existing structured focused elective do not match their educational objectives, they can work with their advisor and a faculty mentor to propose an alternative course of study comprised of a minimum of 8 courses (24 credits) focused around a specified intellectual/professional goal.

Course Requirements

- Minimum of eight courses (24 credits) beyond the E&S core requirements.
- At least 18 credits (six of the eight courses) must be 3000-level or above.
- A course may only be used once to meet either a core or focused elective requirement.
- Courses should reflect an environment or sustainability theme.
- Independent study courses, internship credits, TA credit and research credits are not eligible for the SD focused elective.

Student-Designed Focused Elective proposals will only be considered if the student follows the submission timeline and eligibility requirements. Proposals will be carefully evaluated, and only those that feature clear and compelling objectives, justifications, and planning will be accepted.

Eligibility

To be eligible to submit a SD proposal students must have completed or be enrolled in

- Core Foundation class (NTRES 1101/ENVS 1101 **AND**
- 3 Additional Disciplinary Core Requirements from the following:
  - Social Science (NTRES 2201)
  - Biology (BIOEE 1610 or BIOEE 1780)
  - Chemistry/Physics (CHEM 1560/CHEM 1561 or CHEM 2070/CHEM 2071 or EAS 1600)
  - Environmental Humanities (see Core list)
  - Environmental Economics (AEM 1500 or AEM 2500)

Objectives and Rationale

Approval of a student-designed focused elective is contingent upon a proposal explaining in detail the educational and career goals that motivate your plan and why these goals are better met by a student-designed focused elective than by any of the E&S structured focused electives.

The ~500-word, double-spaced proposal should include:

- Student Name
- Title /Theme for the plan of study
- Identify your educational and career goals that motivate the proposed plan of study, and why these goals are better met by a student-designed plan over any of the structured focused electives.
- How each proposed course, contributes to a coherent curriculum that advances your educational AND professional goals in the Environment and Sustainability major. This should be done by consulting course learning outcomes in the Catalog and providing links to each proposed course. Emphasize how the classes build your depth of understanding and relate to each other rather than reiterating course descriptions.

Proposal Submission Timeline

A student-designed plan will not be accepted after the focused elective declaration deadline.

To apply to the SD focused elective, visit the E&S Student-Designed web page (https://cals.cornell.edu/environment-sustainability/education/concentrations/student-designed-concentration/) for more information and the application link.

University Graduation Requirements Requirements for All Students

In order to receive a Cornell degree, a student must satisfy academic and non-academic requirements.

Academic Requirements

A student's college determines degree requirements such as residency, number of credits, distribution of credits, and grade averages. It is the student's responsibility to be aware of the specific major, degree, distribution, college, and graduation requirements for completing their chosen program of study. See the individual requirements listed by each college or school or contact the college registrar's office (https://registrar.cornell.edu/service-resources/college-registrar-directory/) for more information.

Non-academic Requirements

Conduct Matters. Students must satisfy any outstanding sanctions, penalties or remedies imposed or agreed to under the Student Code of Conduct (Code) or Policy 6.4. Where a formal complaint under the Code or Policy 6.4 is pending, the University will withhold awarding a degree otherwise earned until the adjudication process set forth in those procedures is complete, including the satisfaction of any sanctions, penalties or remedies imposed.

Financial Obligations. Outstanding financial obligations will not impact the awarding of a degree otherwise earned or a student's ability to access their official transcript. However, the University may withhold issuing a diploma until any outstanding financial obligations owing to the University are satisfied.

Additional Requirements for Undergraduate Students

The University has two requirements for graduation that must be fulfilled by all undergraduate students: the swim requirement, and completion of two physical education courses. For additional information about fulfilling University Graduation Requirements, see the Physical Education website (https://scl.cornell.edu/pe/).

Physical Education

All incoming undergraduate students are required to take two credits (two courses) of Physical Education prior to graduation. It is recommended they complete the two courses during their first year at Cornell. Credit in Physical Education may be earned by participating in courses offered by the Department of Athletics and Physical Education (https://courses.cornell.edu/preview_program.php?catoid=60&poid=30232) and Cornell Outdoor Education, by being a registered participant on a varsity athletic team, or performing in the marching band.

Students with medical concerns should contact the Office of Student Disability Services (http://sds.cornell.edu/).

Swim Requirement

The Faculty Advisory Committee on Athletics and Physical Education has established a basic swimming and water safety competency requirement for all undergraduate students. Normally, the requirement is taken during the Fall Orientation process at Helen Newman Hall or Teagle Hall pools. The requirement consists of the following: jump or step feet-first into the deep end of the pool, float or tread for one minute, turn around in a full circle, swim 25 yards using any stroke(s) of choice without touching the bottom or holding on to the sides (there is no time limit) and exit from the water. Students who do not complete the swim requirement during their first year, during a PE swim class or during orientation subsequent years, will have to pay a $100 fee. Any student who cannot meet this requirement must register for PE 1100 Beginning Swimming as their physical education course before electives can be chosen.

If a student does not pass the swim requirement in their first Beginning Swimming PE class, then the student must take a second Beginning Swimming PE class (PE 1100 or PE 1101). Successful completion of two Beginning Swimming classes (based on attendance requirements) with the instructor's recommendation will fulfill the University's swim requirement.

Students unable to meet the swim requirement because of medical reasons should contact the Office of Student Disability Services (http://sds.cornell.edu/). When a waiver is granted by the Faculty Committee on Physical Education, an alternate requirement is imposed. The alternate requirement substitute is set by the Director of Physical Education.

College of Arts and Sciences Graduation Requirements

Undergraduate Degrees

Graduation Requirements for the Bachelor of Arts Degree

Credit Requirement: 120 academic credits are required, 100 of which must be taken in the College of Arts & Sciences. 100 credits in Arts & Sciences is a minimum number, as is the 120 credit total. A minimum of 80 credits must be in courses for which a letter grade was received. AP, IB, CASE and A-Level credits count toward the 120 total credits but not toward the 100 A&S credits. Transfer credits for non-transfer students cannot count towards the 100 A&S credits. (See list of courses (https://as.cornell.edu/registrar/courses-that-dont-count/) that do not count as academic credit.)

Residency Requirement: eight full-time semesters in residence (in person) are expected to complete degree requirements with a minimum of six full-time semesters being required. External transfer students must complete a minimum of four full-time residence semesters.

First-year Writing Seminar (FWS) Requirement: two courses are required. A 5 on either the AP English Composition or Literature exam, or a 7 on the IB HL English Literature or Language exam will count towards one of these seminars. First-year students should take an FWS during their first semester at Cornell and are required to complete two by the end of their sophomore year.

Foreign Language Requirement: a student must either pass an intermediate Cornell language course at the 2000-level or above (Option 1) or complete at least 11 credits in a single foreign language at Cornell (Option 2). AP and IB credits cannot complete this requirement, but usually indicate that a student can place into a higher level course. Note: Native speakers of a foreign language may be exempted from this requirement. For a list of language offerings and placement, see Language Study at Cornell.

Distribution Requirement: Must take a minimum of 8 courses of at least 3 credits to fulfill 10 distribution categories. How an individual course is categorized is indicated with the appropriate abbreviation in its course description. It is important to recognize that only courses with the proper designation in the catalog can be used toward fulfilling the distribution requirements in Arts and Sciences. Unless otherwise specified, variable credit courses, including independent study courses, may not be used for distribution credit.

Arts & Sciences Distribution Requirement Categories:

- Arts, Literature, and Culture (ALC-AS)
- Biological Sciences (BIO-AS)
- Ethics and the Mind (ETM-AS)
- Global Citizenship (GLC-AS)
- Historical Analysis (HST-AS)
- Physical Sciences (PHS-AS)
- Social Difference (SCD-AS)
- Social Sciences (SSC-AS)
- Statistics and Data Science (SDS-AS)
- Symbolic and Mathematical Reasoning (SMR-AS)

Distribution Requirement Definitions

Arts, Literature, and Culture (ALC-AS)

Courses in this area examine arts, literature, and culture in various contexts. Students gain insights into the interplay of individual or collaborative creativity and social practice, and understand the complexities of the expression of the human condition. Topics include the analysis of artworks and literary texts, and the belief systems of social groups, cultures, and civilizations; they also focus on artistic expression itself (in creative writing, performing arts, and media such as film and video).

Biological Sciences (BIO-AS)

Courses in this area focus on understanding a wide range of life forms, from single cells to plants, animals, and their ecosystems. Topics include the molecular and biochemical makeup of life, the sub-cellular, cellular and organismal structures of life, and the evolutionary relatedness of all life forms. Students learn to describe how organisms are connected

to each other and to their physical environment. Many courses address how genetic information is expressed from DNA, and how this expression leads to complex function and behavior.

Ethics and the Mind (ETM-AS)
Courses in this area investigate the human mind and its capacities, ranging from cognitive faculties shared by humans and animals such as perception, to language and abstract reasoning, to the ability to form and justify ethical values. Courses investigating the mind may use the methodologies of psychology, linguistics, or philosophy. Those focusing on ethics explore ways of reflecting on questions that concern the nature of justice, the good life, or human values in general. Many courses combine these topics and methodologies.

Global Citizenship (GLC-AS)
Courses in this area examine the history, culture, politics, religion, and social relations of peoples in different parts of the world, as well as their interactions. They encourage students to think broadly about the global community and their place within it, beyond the boundaries of their particular national or cultural group, and cultivate skills of intercultural engagement that are vital to their role as global citizens. These courses introduce students to global challenges such as war and peace, social and economic inequalities, international migration, and environmental sustainability, and encourage students to think critically about international responses to these challenges.

Historical Analysis (HST-AS)
Courses in this area train students in the analysis of documentary, material, and oral evidence about social phenomena, institutions, events and ideas of the past. Students learn to evaluate and critically assess differing analyses and interpretations of former times so that they may acquire a better understanding of the origins and evolution of the present. Questions addressed in HA courses include why and under what circumstances changes have occurred in how people have interacted with one another and with the environments in which they live.

Physical Sciences (PHS-AS)
Courses satisfying this requirement provide an appreciation of how science generates and categorizes enduring knowledge of our physical world. This includes the physics, chemistry, and technology involved, of everything from light to atoms, DNA molecules, Earth science, our Solar system, and to the Cosmos. These courses expose students to both the process and some of the substance of science. By learning the universal aspects of scientific enquiry, students will be better equipped to form opinions on scientific issues that affect the world.

Social Difference (SCD-AS)
Courses in this area examine social differences relevant to the human experience. Social categories include class, race, ethnicity, indigeneity, nationality, language, religion, gender, sexuality, and ability as objects of study. Students develop a deeper understanding of these categories and their intersections. Topics may include: how hierarchies in power and status shape social differences; how social, economic and political systems can impact the interpretation of social differences; and how differences attributed to various groups are explained.

Social Sciences (SSC-AS)
Courses in this area examine social, economic, political, psychological, demographic, linguistic, and relational processes. Topics include understanding how different social contexts, for example neighborhoods, families, markets, networks, or political organizations, shape social life. Students learn to identify, describe, and explain the causes and consequences of social phenomena using quantitative and/or qualitative evidence based on systematic observation of the social world. They also learn to link evidence to theory through rigorous and transparent reasoning, and/or reflect critically on the concepts through which people make sense of the social world.

Statistics and Data Science (SDS-AS)
Courses in this area develop data literacy, essential to be an informed citizen in today's world. Students learn and apply statistical and computational techniques to effectively collect, visualize, analyze and interpret data, and present conclusions. Applications span a wide variety of contexts: providing a better understanding of the communities in which we live, guiding and enriching our lives, and driving forward scientific inquiry. Students gain an appreciation of how to ask the right questions, and how statistics can depend on the context, assumptions, and limitations of data.

Symbolic and Mathematical Reasoning (SMR-AS)
Courses satisfying this requirement help students develop the skills to solve problems through understanding abstract, logical relationships. Such skills include mathematical analysis of patterns and phenomena, modeling natural and technological systems, and creating algorithms essential to computation. These courses explore specific quantitative and symbolic methods, strategies for applying logical reasoning in diverse areas, and the intrinsic elegance of mathematics.

Major Requirement: students must complete the requirements for at least one major in A&S. See individual major listings for major requirements.

Physical Education Requirement: completion of the university requirement of two PE courses and passing the swim test. Note: physical education credit is not academic credit and does not count toward the 120 credits needed to graduate.

Policies on Applying Cornell and Non-Cornell Courses and Credits to Distribution Requirements

Restrictions on Applying AP/Test Credit and Courses from Other Institutions to the Distribution Requirements

- Students may not apply AP/test credit or transfer credit from another institution to the distribution requirements.
- Students who transfer to the college from another institution are under the above rules for advanced placement credit, but are eligible to have credit for post–high school course work taken during regular full-time semesters (not summer terms) at their previous institution count toward all distribution requirements. Transfer students receive a detailed credit evaluation when they are accepted for admission.

Restrictions on Applying Cornell Courses to the Distribution Requirements

- First-year writing seminars and ENGL 2880 Expository Writing or ENGL 2890 taken to satisfy a first-year writing seminar requirement may not count toward any other college or major requirement.
- Only courses with the proper designation in the Courses of Study can be used toward fulfilling the distribution requirements in Arts and Sciences.
- Students may not petition to change the category of any given course, nor may any faculty member change the category of a course for an individual student. Faculty members wishing to change the category for a course in which they are the primary instructor must petition the Educational Policy Committee for a change in category. If

granted, the new category must be applied to the course as a whole and not for an individual student.

Courses That May Fulfill More Than One Requirement

- A course may fulfill more than one college requirement in any of the following situations:
- A course may be used to fulfill distribution and a major requirement (except if prohibited by one of the restrictions noted on applying AP/test credit, transfer credit, and Cornell courses to distribution requirements).
- A course may satisfy a maximum of two distribution categories. Students can only double-count distribution requirements on a maximum of two courses.
- A one-semester course in foreign literature (not language) or culture that is acceptable for certifying option 1 in that language may also be applied to the relevant distribution requirement.
- Courses may count toward any other requirement except first-year writing seminars.

Credit Requirement

Credits and Courses: Students must earn a minimum of 120 academic credits (which may include AP/test credits). Of the 120, a minimum of 100 must be from courses taken in the College of Arts and Sciences at Cornell.

Courses that do not count toward the 120 credits required for the degree. The College of Arts and Sciences does not grant credit toward the degree for every course offered by the university. Courses in military training, service as a teaching assistant, physical education, remedial or developmental training, precalculus mathematics, supplemental science and mathematics, offered by the Learning Strategies Center, and English as a second language are among those for which degree credit is not awarded. Students can view the list of courses that do not count for academic credit here (https://as.cornell.edu/registrar/courses-that-dont-count/).

Other cases in which a course may not receive credit include the following:

- A course identified as a prerequisite for a subsequent course may not be taken for credit once a student completes that subsequent course.
- A repeated course. (For more information, see "Repeating courses," below.)
- A "forbidden overlap," that is, a course with material that significantly overlaps with material in a course a student has already taken. Students should consult the list of Forbidden Overlaps for more information.

Courses that count toward the 100 required Arts and Sciences credits may include liberal arts courses approved for study abroad during a semester or academic year of full-time study (not summer abroad study), courses taken in certain off-campus Cornell residential programs, and a maximum of three courses that majors may accept from other colleges at Cornell as fulfilling major requirements. A&S courses taken in Cornell's summer session may count towards the 100 A&S credits.

Courses that do not count toward the 100 required Arts and Sciences credits include credits earned in other colleges at Cornell (except in the cases specifically noted in this section), transfer credits earned in any subject at institutions other than Cornell, and advanced placement/test credits. AP/test credits count as part of the 120 credits required for the degree but not as part of the 100 Arts and Sciences credits and may not be applied to distribution requirements. AP credits are posted on the transcript. If, subsequently, a student takes the course out of which they had placed, the AP credit will be removed because of the overlap in content.

Repeating Courses

Students occasionally need to repeat courses. Some courses, such as independent study, some music and performance courses, and specific topical seminars, in which content is significantly different, do grant credit when the course is taken more than once. For all repeated courses, both grades appear on the transcript and are included in both the term and cumulative GPA. For repeated courses that do not grant credit more than once, only one instance counts toward degree credits and requirements.

Residency Requirement

The College of Arts & Sciences is a residential community and students typically spend eight semesters of full-time study in residence to earn the B.A. degree.

The completion of a fall or spring term as a full-time registered student at Cornell counts as a semester in residence. Summer and winter terms at Cornell, study in Cornell's School of Continuing Education and at other institutions do not count as semesters of residence.

The residency requirement has two components: a minimum number of semesters in residence and a requirement to spend the last full-time semester of study in residence.

Students matriculating into the College of Arts & Sciences as first-year students must have a minimum of six semesters in residence before graduating. First-year matriculants into A&S can count up to two semesters in an approved off-campus program as semesters in residence. Approved off-campus programs include A&S approved study abroad programs, Cornell in Washington, Cornell in Rome, and the Cornell-China & Asia-Pacific Studies (CAPS) Program.

Students who transfer into the College of Arts & Sciences after matriculating in their first-year in another Cornell college (internal transfers) must have a minimum of six semesters in residence, and a minimum of two semesters in the College of Arts and Sciences before graduating. Internal transfers can count up to two semesters in an approved off-campus program as semesters in residence.

Students who transfer into Cornell from another institution (external transfers) must have a minimum of four semesters in residence, and a minimum of two semesters in the College of Arts & Sciences, before graduating. External transfers can count up to one semester in an approved off-campus program as a semester in residence.

In addition to the minimum number of semesters in residence, all students must complete their final full-time semester of study (i.e., the last semester in which at least 9 academic credits are needed to meet graduation requirements) in residence. Students who have fewer than 9 credits to complete degree requirements, and have met the minimum number of semesters residency requirement, may elect to complete their degree requirements during Cornell summer and winter terms registered as an A&S student or at another institution with approved transfer credit. Students cannot meet final degree requirements registered as an extramural student at Cornell.

Exceptions to the residence requirement are not petitionable.

Foreign Language Requirement

The faculty considers competence in a foreign language essential for an educated person. Studying a language other than one's own helps students understand the dynamics of language, our fundamental intellectual tool, and enables students to understand another culture. The sooner a student acquires this competence, the sooner it will be useful. Hence, work toward the foreign language requirement should be undertaken in the first two years. Students postponing the language requirement for junior and senior years risk not graduating on time. Courses in foreign languages and/or literature are taught in the College of Arts and Sciences by the following departments: Africana Studies and Research Center, Asian Studies, Classics, Comparative Literature, German Studies, Linguistics, Near Eastern Studies, and Romance Studies. For a list of languages and placement see Language Study at Cornell.

The language requirement may be satisfied in one of the following ways:

Option 1 (FLOPI): Passing (a) a non-introductory foreign language course of 3 or more credits at Cornell at the 2000-level or above or (b) any other non-introductory course at the 2000-level or above conducted in a foreign language at Cornell. OR

Option 2: Passing at least 11 credits of study in a single foreign language (taken in the appropriate sequence) at Cornell.

Any exceptions to these rules will be noted elsewhere in individual department descriptions.

Students whose speaking, reading, and writing competence in a language other than English is at the same level we would expect our entering first-year students to have in English (as shown by completing high school in that language or by special examination during their first year here at Cornell) are exempt from the college's language requirement.

Major Requirement

Most departments and programs specify certain prerequisites for admission to the major; they are found on the pages for each department and program available at Degree Programs.

Students may apply for acceptance into the major as soon as they have completed the prerequisites and are confident of their choice. This may be as early as the second semester of their first year, and must be no later than the end of the second semester of sophomore year. A student without a major at the beginning of the junior year is not making satisfactory progress toward the degree and risks not being allowed to continue in the college. Undeclared first-term juniors must file a Late Declaration of Major form with Student Services and may be placed on a leave of absence during their junior year if they have not yet declared a major.

Double Majors

Completion of one major is required for graduation. Some students choose to complete more than one major. No special permission or procedure is required; students simply become accepted into multiple majors and are assigned to an advisor in each department. All completed majors are posted on the official transcript. Students are not allowed to continue their studies past their eighth semester to complete additional majors.

Early and Delayed Graduation

Graduating Early

A student may elect to graduate early if they are able to complete all graduation requirements in fewer than eight semesters.

Students must still satisfy the college's residency requirement as part of the graduation requirements. This residency requirement requires that students who are first-year matriculants into Cornell spend a minimum of six semesters in residence, external transfers must spend a minimum of four. To request an early graduation, students must notify the A&S Registrar's Office in KG 17 Klarman Hall or at as-studentservices@cornell.edu (as-studentservices@cornell.edu?subject=Early%20Graduation%20Request).

The earliest a student can request to graduate early and officially change their graduation date is immediately following the pre-enrollment period for their anticipated final semester. The student should have pre-enrolled in the classes required to meet the graduation requirements by the requested graduation date. The student must then complete Part I in DUST and have Part II completed by their major advisor.

Graduating Late: Ninth Term Enrollment

The Bachelor of Arts degree is expected to be completed in eight terms. If degree requirements cannot be completed in eight terms, students may seek permission to continue their studies. Requests will only be granted for students who have found themselves in emergent circumstances beyond their control which have prevented them from completing the degree in eight terms. Requests cannot be made until a student's final expected graduation term and will not be reviewed and approved until after the university drop deadline for that semester. Study beyond the eighth term is not automatically granted for the purposes of changing a major. Such requests must be discussed with a college academic advisor and require registrar approval. Requests to add an additional major or minor will not be approved for study beyond the eighth term.

If approved, students in the ninth and tenth term will be on a conditional status and will have restrictions placed on their enrollment to ensure successful completion of their degree. To request a ninth term, students must have their faculty advisor update Part II for any remaining major requirements. They will also need to submit a study plan to their college advisor listing the specific courses that will meet degree requirements for one major.

Student may elect to prorate credits if enrolling in 9 or fewer credits or take a full-time load if they desire. However, enrollment will be limited to 18 credits for the term so students can focus on their remaining required courses. In the rare case where a student may need to enroll in a tenth term to complete their degree, they will be required to prorate tuition and their enrollment will be limited to only the courses/credits needed for successful completion of one major. Additional enrollments will not be allowed.

Graduation Procedures

Application to Graduate

In the first semester of their senior year, students are prompted by Arts & Sciences Student Services to complete an online application to graduate. The application is intended to help seniors identify problems early enough in the final year to make any necessary changes in course selection to satisfy those requirements. Nonetheless, ensuring graduation requirements are fully met is the student's responsibility and any problems that are discovered, even late in the final semester, must be resolved by the student before the degree can be granted. Students are responsible for checking their DUST (https://data.arts.cornell.edu/

as-stus/degree_reqts.cfm) reports and transcripts each term and alerting Student Services of any problems with their academic record. To check on their progress in the major, students should consult with their major advisors.

Degree Dates

Cornell has three official degree conferral dates in the year: December, May, and August. Students who plan to graduate in August may attend commencement ceremonies in the preceding or subsequent May. Students graduating in December are invited to a special recognition ceremony in December and may also attend Commencement the following May. All academic work must be complete by the official conferral date in order to receive a degree on that date. Incomplete academic work will result in a later conferral date.

Honors

Notice: beginning with the December 2026 conferral date, Cornell University will institute a standardized Latin Honors system based solely on final cumulative undergraduate GPA. The Latin Honors categories include: Summa Cum Laude (top 5%), Magna Cum Laude (next 10%), and Cum Laude (next 15%).

The student's cumulative undergraduate GPA percentile at the time of degree conferral will be computed with respect to the student's particular college. Existing college-specific Latin Honors systems not based upon the new standardized criteria will be discontinued at the end of Summer 2026. This will apply to all major honors in Arts & Sciences as they will no longer use Latin Honors and will award "Honors in X" (e.g. Honors in Chemistry, Honors in English, etc.) Please see Graduation and Academic Honors for more information.

Bachelor of Arts with Honors

Almost all departments offer honors programs for students who have demonstrated exceptional accomplishment in the major and succeeded in research. The conferring of honors, and the requirements for conferral (cum laude, magna cum laude, or summa cum laude) are set by the departments for each major, the Independent Major Program, or the College Scholar Program. Minors do not offer honors programs. Students should contact the Director of Undergraduate Studies (https://as.cornell.edu/about/directors-undergraduate-study/) with questions about honors in the respective program.

Bachelor of Arts with Distinction

The degree of Bachelor of Arts with distinction in all subjects will be conferred on students who have completed the requirements for the degree of Bachelor of Arts, if they have met the following requirements by the end of their final semester:

1. completed at least 60 credits while registered in regular sessions at Cornell;
2. achieved a GPA in the upper 30 percent of their class at the end of the seventh semester, or next-to-last semester for transfers and accelerants;
3. received a grade below C– in no more than one course;
4. received no failing grade (excluding PE);
5. have no frozen Incompletes on their records; and
6. maintained good academic standing, including completing a full schedule of at least 12 academic credits, in each of their last four semesters. (Students who have been approved to have prorated tuition for their final semester are considered to be in good academic standing).

Learning Outcomes

Students will be able to:

- Compare and contrast multiple perspectives on the sustainability of social-ecological relationships, including implications for food, land, air, water, energy, climate, and biodiversity.
- Evaluate claims about sustainability using approaches and perspectives from the natural sciences, humanities, and social sciences.
- Apply diverse scholarly approaches to critically evaluate information and build deeper disciplinary knowledge in one of six focused electives.
- Work collaboratively and across disciplines to formulate approaches to environmental challenges that could help build sustainable human-ecological systems.
- Communicate across disciplines, and demonstrate the capacity to enter the public dialogue regarding complex environmental issues using a variety of communication strategies.