BIOLOGY & SOCIETY (BA, BS)

College of Agriculture and Life Sciences, College of Arts and Sciences

Program Website (https://sts.cornell.edu/)

CIP: 30.2701 | **HEGIS:** 0499.00 | **NYSED:** 15253

Program Description

The Biology & Society major provides the skills and perspectives necessary to confront problems with biological, social, and ethical dimensions. The Biology & Society major is suited for students who wish to combine training in biology with perspectives from the social sciences and humanities aspects of modern biology. Because the Biology & Society major is multidisciplinary, students must attain a basic understanding of each of the several disciplines it comprises, by including courses in the fields of biology, humanities, social sciences, and mathematics. In addition, majors take core courses in Biology & Society, and a set of electives, and a special senior seminar that comprises their theme. Students are expected to select their theme courses to meet their own goals and interests in consultation with a faculty advisor. Some areas of interest may be genetic engineering, the right to medical care, health and society, biology and public policy, food and population, and environment and society.

The Biology & Society major, which involves faculty from throughout the university, is offered by the Department of Science & Technology Studies. Students in the College of Arts & Sciences and the College of Agriculture and Life Sciences are eligible for the major. The major is coordinated for students in both colleges through the Biology & Society Office.

Students who are admitted to Biology & Society as their major field of study graduate from Cornell with well-developed writing and analytical skills and a knowledge base that can lead to employment in a variety of fields. Many graduates have accepted positions as health counselors, writers, policy analysts and researchers for government organizations, medical institutions, consumer or environmental groups, or scientific research institutes. Students have found that Biology & Society is also excellent preparation for professional training in medicine, law, and health services administration and for graduate programs in such fields as genetic counseling, nutrition, clinical psychology, public health, environmental studies, anthropology, sociology, and other related fields.

Honors Program

The honors program is designed to provide independent research opportunities for academically talented undergraduate students whose major is Biology & Society (BSOC). Students who enroll in the honors program are expected, with faculty guidance, to do independent study and research dealing with issues in Biology & Society. Students participating in the program should find the experience intellectually stimulating and rewarding whether or not they intend to pursue a research career.

Biology & Society majors are considered for entry into the honors program at the end of the second semester of the junior year. Application forms, and more information about the honors program, are available on the Biology & Society webpage. The honors program is available to Biology & Society majors from the Colleges of Arts and Sciences and Agriculture and Life Sciences. To qualify for the Biology & Society honors program, students must have an overall Cornell cumulative grade point average (GPA) of at least 3.3, have formulated a research topic, and have found a project supervisor (with an academic appointment at Cornell) and another faculty member willing to serve as their project advisor. At least one of these must be a member of the Biology & Society major. Applications will be reviewed by a committee headed by the director of undergraduate studies, who will notify students directly of the outcome. Students will be permitted to register for the honors program only by permission of the department. Students must enroll for both the fall and spring semesters.

For additional information about the Biology & Society Major and Honors Program:

General Information: Contact the Biology & Society Advising Office, bsoc@cornell.edu.

Admission to the Major

Because of the interdisciplinary nature and flexibility of the Biology & Society major, we do not allow students to triple major. All students should have completed a year of college-level biology or two entry-level biology courses before submitting an application during their sophomore year. An application deadline is in effect each semester for A&S students declaring a major or any students changing their major to Biology & Society; please check with the department for deadline dates. CALS students admitted into the major are encouraged to submit a course plan via the major application during that time, but these course plans will be accepted after the Spring deadline of their sophomore year. Applying during this period will ensure an optimal advising experience prior to pre-enrollment. Juniors are considered on a case-by-case basis. Upper-division applicants should realize the difficulties of completing the major requirements in fewer than two years. The application includes

1. a one-page statement explaining the student's intellectual interests in the Biology & Society major and why the major is consistent with the student's academic goals and interests;
2. the theme the student wishes to pursue in the major; and
3. a tentative plan of courses fulfilling Biology & Society requirements, including courses already taken and those the student plans to take.

A minimum average grade of C is required for the two introductory biology courses. Each course must be passed with a grade of at least C-. Sophomores and above in the process of completing this prerequisite may be admitted to the major on a provisional basis. It is the student's responsibility to assure that final acceptance is granted upon satisfactory completion of the introductory biology requirement. Although only introductory biological science is a prerequisite for acceptance, students find it useful to have completed some of the other requirements (listed below) by the end of their sophomore year, preferably by the end of the first semester. Students who are considering the major may also find it beneficial to take STS 2011 What Is Science? An Introduction to the Social Studies of Science and Technology, in their first or sophomore year.

Note: Biology and Society majors may not double major in Biological Sciences.

Program Information

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

Program Requirements

- The major requires 17 unique courses: 4 basic courses of two introductory biology, calculus, and statistics, and 13 courses that make up the Foundation, Core, and Theme of the major
- No single course may satisfy more than one major requirement
- All courses must be taken for a letter grade and at least 3 credits
- Students must have at least a C- or above in all courses taken towards the major

Note: Students pursuing the Bachelor of Science must meet College of Agriculture and Life Sciences Graduation Requirements. Students pursuing the Bachelor of Arts must meet College of Arts & Sciences Graduation Requirements.

Prerequisite and Basic Courses

Code	Title	Hours
Introductory Biology [1]		
Select one of the following sequences:		
BIOG 1440	Introductory Biology: Comparative Physiology	3
or BIOG 1445	Introduction to Comparative Anatomy and Physiology, Individualized Instruction	
BIOEE 1610	Introductory Biology: Ecology and the Environment	3-4
or BIOSM 1610	Ecology and the Marine Environment	
BIOMG 1350	Introductory Biology: Cell and Developmental Biology	3
BIOEE 1780	An Introduction to Evolutionary Biology and Diversity	4-5
or BIOSM 1780	Evolution and Marine Diversity	

[1] AP credit is not accepted by the Biology & Society major to fulfill the Intro Bio requirement. See the DUS or Advising Staff in 303 Morrill Hall (bsoc@cornell.edu) for other options.

Code	Title	Hours
College Calculus [1]		
Select one of the following: (AP credit may be accepted for Calculus)		
MATH 1106	Modeling with Calculus for the Life Sciences	4
MATH 1110	Calculus I	4
MATH 1120	Calculus II	4
or any higher-level calculus course		

[1] Students may petition to take a second statistics course (an advanced course, in sequence with the statistics course taken in the foundation) in place of the calculus requirement.

Code	Title	Hours
Statistics [1]		
Select one of the following: (AP credit may be accepted for Calculus)		
AEM 2100	Introductory Statistics	4
ECON 3130	Probability and Statistics	4
ILRST 2100	Introductory Statistics and Data Science	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	4
STSCI 2150	Introductory Statistics for Biology	4

[1] Students may petition to take a second statistics course (an advanced course, in sequence with the statistics course taken in the foundation) in place of the calculus requirement.

Code	Title	Hours
Recommended for Students on a Pre-health Careers Track		
General chemistry (one-year sequence) (prerequisite to biochemistry and other chemistry courses):		
Select one of the following:		4-6
CHEM 2070 & CHEM 2071	General Chemistry I and General Chemistry I Laboratory (or)	
CHEM 2080 & CHEM 2081	General Chemistry II and General Chemistry II Laboratory (or)	
CHEM 2150	Honors General and Inorganic Chemistry	

Foundation Courses

(Should be completed by end of junior year.) Foundation courses are intended to provide a broad introduction to methodology and theory in their area.

All courses must be above the 2000-level (with the exception of: STS 1180, NS 1150, and NS 1220), at least 3 credit hours, and taken for a letter grade. For a course to count towards the major, students must receive at least a C- as a final grade. Transfer course accepted where applicable.

Code	Title	Hours
Ethics		
Select one course to be complete by the end of junior year:		*4*
BSOC 2051	Ethical Issues in Health and Medicine	
BSOC 2061	Ethics and the Environment	

Social Sciences/Humanities Foundation

Code	Title	Hours
Select two courses; must be taken from two different subject areas:		
History of Science		
BSOC 2071	Introduction to the History of Medicine (crosslisted)	
BSOC 2581	Environmental History (crosslisted)	
BSOC 2599	Medicine, Magic and Science in the Ancient Near East (crosslisted)	
BSOC 2640	Introduction to Ancient Medicine (crosslisted)	
CLASS 2643	The Birth of Science: Discovering the World from Antiquity to Today (crosslisted)	
HIST 2920	Inventing an Information Society (crosslisted)	
STS 1180	Evolution (crosslisted)	
Philosophy of Science		
PHIL 2455	Introduction to Bioethics (crosslisted)	
STS 2831	Introduction to the Philosophy of Science (crosslisted)	
Sociology of Science		
BSOC 2201	Society and Natural Resources (crosslisted)	

BSOC 2468	Medicine, Culture, and Society (crosslisted)
BSOC 3011	Life Sciences and Society (crosslisted)
GDEV 3400	Agriculture, Food, Sustainability and Social Justice
NS 2450	Social Science Perspectives on Food and Nutrition
STS 2011	What Is Science? An Introduction to the Social Studies of Science and Technology (crosslisted)
STS 3111	Social Studies of Medicine (crosslisted)
Politics of Science	
BSOC 3311	Environmental Governance (crosslisted)
PUBPOL 2350	The U.S. Health Care System
PUBPOL 3780	Sick Around the World? Comparing Health Care Systems Around the World
STS 3241	Environmental Sociology (crosslisted)
STS 3911	Science in American Politics (crosslisted)
Science Communication	
COMM 3210	Communication and the Environment
STS 2851	Communication, Environment, Science, and Health (crosslisted)
STS 3020	Science Writing for the Media (crosslisted)
STS 4661	Public Communication of Science and Technology (crosslisted)
Literature and Science	
COML 2035	Science Fiction (crosslisted)
ENGL 2350	Literature and Medicine (crosslisted)
Anthropology of Science, Medicine, and Environment	
ANTHR 2201	Early Agriculture (crosslisted)
ANTHR 2245	Health and Disease in the Ancient World (crosslisted)
ANTHR 2420	Nature-Culture: Ethnographic Approaches to Human Environment Relations (crosslisted)
ANTHR 2424	Culture and Mental Health: Anthropological Perspectives

Biology Foundation (Breadth Requirement)

Code	Title	Hours
Three courses; must be taken from three different subject areas:		
Anatomy and Physiology		
ANSC 2400	Biology of Reproduction	
BIOAP 3110	Principles of Animal Physiology (crosslisted)	
NS 3410	Human Anatomy and Physiology	
Animal Behavior		
ANTHR 2310	The Natural History of Chimpanzees and the Origins of Politics	
BIONB 2210	Neurobiology and Behavior I: Introduction to Behavior	
Biochemistry, Molecular and Cell Biology		
BIOMG 3300	Principles of Biochemistry, Individualized Instruction	
BIOMG 3310	Principles of Biochemistry: Proteins and Metabolism	
BIOMG 3350	Principles of Biochemistry: Proteins, Metabolism, and Molecular Biology	
NS 3200	Introduction to Human Biochemistry	
Biological Diversity		
BIOEE 2740	The Vertebrates: Comparative Anatomy, Function, Paleontology, and Evolution	
BIOEE 3730	Biodiversity and Biology of the Marine Invertebrates	
BIOEE 4750	Ornithology, Lectures	
BIOEE 4760	Ichthyology: Biology of Fishes, Lectures	
BIOMI 2900	General Microbiology Lectures	
BIOSM 3210	Anatomy and Function of Marine Vertebrates	
BIOSM 3740	Field Ornithology	
ENTOM 2120	Insect Biology	
PLSCI 2410	Introductory Plant Diversity and Evolution	
PLSCI 2480	Vascular Plant Systematics	
PLSCI 3010	Biology and Management of Plant Diseases	
PLSCI 4300	Mycology	
Genetics and Development		
BIOMG 2800	Lectures in Genetics and Genomics	
NTRES 2830	DNA, Genes and Genetic Diversity (crosslisted)	
PLSCI 2250	Plant Genetics	
Neurobiology		
BIONB 2220	Neurobiology and Behavior II: Introduction to Neuroscience	
Nutrition		
NS 1150	Nutrition, Health, and Society	
NS 1220	Nutrition and the Life Cycle	

Biology Foundation (Depth Requirement)

One biology course for which one of the above (Biology Foundation- Breadth requirement) is a prerequisite. The depth course must include as a prerequisite a course you have completed as part of Biology Foundation- Breadth requirement. Please note that a year of introductory biology courses will not count as a prerequisite for the depth requirement.

Code	Title	Hours
Complete one sequence from any one of the following subject areas:		
Anatomy and Physiology		
Sequence 1		
ANSC 2400	Biology of Reproduction (and)	
ANSC 5450	Reproductive Physiology and Management of Dairy Cattle (Depth Course)	
Sequence 2		
BIOAP 3110	Principles of Animal Physiology (and)	
BIOAP 4140	Principles of Pharmacology (Depth course)	
Sequence 3		
NS 3410	Human Anatomy and Physiology (and)	
BIOAP 4140	Principles of Pharmacology (Depth course)	
Animal Behavior		
Sequence 1		
ANTHR 2310	The Natural History of Chimpanzees and the Origins of Politics (and)	3
Sequence 1 Depth course: No Depth Courses Available		
Sequence 2		
BIONB 2210	Neurobiology and Behavior I: Introduction to Behavior (and)	3-4
Sequence 2 Depth course: Select one of the following:		

BIONB 4220	Modeling Behavioral Evolution	
BIONB 4260	Animal Communication	
BIONB 4560	Neural Control of Food Intake and Energy Metabolism	
HD 3220	Hormones and Behavior	
Biochemistry, Molecular and Cell Biology		
Sequence 1		
BIOMG 3300	Principles of Biochemistry, Individualized Instruction (and)	4
Sequence 1 Depth course: Select one of the following:		
BIOMG 3800	Advanced Genetics and Genomics	
BIOMG 4000	Genomics: Technology, Data, and Applications	
BIOMG 4311	Proteins: Structure, Function and Evolution	
BIOMG 4320	Survey of Cell Biology	
BIOMG 4380	RNA in Biology and Medicine	
BIOMG 4390	Molecular Basis of Disease	
BIOMG 4610	Development and Evolution	
NS 3310	Human Nutrition and Nutrient Metabolism	
NS 4300	Proteins, Transcripts, and Metabolism: Big Data in Molecular Nutrition	
BIOMI 4090	Principles of Virology	
BIOMI 4850	Bacterial Genetics	
BIONB 3950	Molecular and Genetic Approaches to Neuroscience	
BIONB 4300	Experimental Molecular Neurobiology	
Sequence 2		
BIOMG 3310	Principles of Biochemistry: Proteins and Metabolism (and)	3
Sequence 2 Depth course: Select one of the following:		
BIOMG 4000	Genomics: Technology, Data, and Applications	
BIOMG 4311	Proteins: Structure, Function and Evolution	
BIOMG 4320	Survey of Cell Biology	
BIOMG 4380	RNA in Biology and Medicine	
BIOMG 4390	Molecular Basis of Disease	
BIOMG 4610	Development and Evolution	
BIOMI 4850	Bacterial Genetics	
NS 3310	Human Nutrition and Nutrient Metabolism	
NS 3320	Methods in Nutritional Sciences	
BIONB 4300	Experimental Molecular Neurobiology	
Sequence 3		
BIOMG 3350	Principles of Biochemistry: Proteins, Metabolism, and Molecular Biology (and)	4
Sequence 3 Depth course: Select one of the following:		
BIOMG 4000	Genomics: Technology, Data, and Applications	
BIOMG 4311	Proteins: Structure, Function and Evolution	
BIOMG 4320	Survey of Cell Biology	
BIOMG 4380	RNA in Biology and Medicine	
BIOMG 4390	Molecular Basis of Disease	
BIOMG 4610	Development and Evolution	
BIOMI 4850	Bacterial Genetics	
PLSCI 4000	Concepts and Techniques in Computational Biology	
Sequence 4		
NS 3200	Introduction to Human Biochemistry (and)	4
Sequence 4 Depth course: Select one of the following:		
NS 3310	Human Nutrition and Nutrient Metabolism	
NS 4300	Proteins, Transcripts, and Metabolism: Big Data in Molecular Nutrition	
NS 4410	Nutrition and Disease	
Biological Diversity		
Sequence 1		
BIOEE 2740	The Vertebrates: Comparative Anatomy, Function, Paleontology, and Evolution (and)	4
Sequence 1 Depth course: Select one of the following:		
BIOEE 4700	Herpetology, Lectures	
BIOEE 4760	Ichthyology: Biology of Fishes, Lectures	
EAS 4795		
Sequence 2		
BIOEE 3730	Biodiversity and Biology of the Marine Invertebrates (and)	3
Sequence 2 Depth course: No Depth Courses Available		
Sequence 3		
BIOEE 4750	Ornithology, Lectures (and)	3
Sequence 3 Depth course: No Depth Courses Available		
Sequence 4		
BIOEE 4760	Ichthyology: Biology of Fishes, Lectures (and)	3
Sequence 4 Depth course: No Depth Courses Available		
Sequence 5		
BIOMI 2900	General Microbiology Lectures (and)	3-4
Sequence 5 Depth course: Select one of the following:		
BIOMI 3210	The Gut Microbiome	
BIOMI 3940	Applied and Food Microbiology	
BIOMI 4040	Pathogenic Bacteriology	
BIOMI 4090	Principles of Virology	
BIOMI 4300	Computational Approaches for Microbial Systems	
BIOMI 4850	Bacterial Genetics	
Sequence 6		
BIOSM 3210	Anatomy and Function of Marine Vertebrates (and)	3
Sequence 6 Depth course: No Depth Courses Available		
Sequence 7		
BIOSM 3740	Field Ornithology (and)	3
Sequence 7 Depth course: No Depth Courses Available		
Sequence 8		
ENTOM 2120	Insect Biology (and)	4
Sequence 8 Depth course: Select one of the following:		
ENTOM 3150	Spider Biology	
ENTOM 3310	Insect Diversity and Evolution	
ENTOM 3440	Insect Conservation Biology	
ENTOM 4830	Insect Physiology	
Sequence 9		
PLSCI 2410	Introductory Plant Diversity and Evolution (and)	3
Sequence 9 Depth course: Select one of the following:		
PLSCI 2430	Ecology and Evolution of Plants	
PLSCI 2480	Vascular Plant Systematics	
PLSCI 3420	Plant Physiology, Lectures	
PLSCI 4020	Plant Propagation	

Sequence 10		
PLSCI 2480	Vascular Plant Systematics (and)	4
Sequence 10 Depth course: No Depth Courses Available		
Sequence 11		
PLSCI 3010	Biology and Management of Plant Diseases (and)	4
PLSCI 5020	Systems Epidemiology for Plant Pathology (Depth course)	3
Sequence 12		
PLSCI 4300	Mycology (and)	3
Sequence 12 Depth course: No Depth Courses Available		
Genetics and Development:		
Sequence 1		
BIOMG 2800	Lectures in Genetics and Genomics (and)	3
Sequence 1 Depth course: Select one of the following:		
BIOMG 3800	Advanced Genetics and Genomics	
BIOMG 3850	Developmental Biology	
BIOMG 4000	Genomics: Technology, Data, and Applications	
BIOMG 4311	Proteins: Structure, Function and Evolution	
BIOMG 4320	Survey of Cell Biology	
BIOMG 4390	Molecular Basis of Disease	
BIOMG 4610	Development and Evolution	
BIOMI 4300	Computational Approaches for Microbial Systems	
BIOMI 4850	Bacterial Genetics	
Sequence 2		
NTRES 2830	DNA, Genes and Genetic Diversity (and)	4
Sequence 2 Depth course: No Depth Courses Available		
Sequence 3		
PLSCI 2250	Plant Genetics (and)	4
Sequence 3 Depth course: No Depth Courses Available		
Neurobiology		
Sequence 1		
BIONB 2220	Neurobiology and Behavior II: Introduction to Neuroscience	3-4
Sequence 1 Depth course: Select one of the following:		
BIONB 3215	Gender and the Brain	
BIONB 3220	Hormones and Behavior	
BIONB 3280	Biopsychology of Learning and Memory	
BIONB 3300	Introduction to Computational Neuroscience	
BIONB 3920	Drugs and the Brain	
BIONB 3950	Molecular and Genetic Approaches to Neuroscience	
BIONB 4320	Neural Circuits for Motor Control in Health and Disease	
BIONB 4370		
BIONB 4560	Neural Control of Food Intake and Energy Metabolism	
BIONB 4740	Neural Dynamics of Learning, Memory and Decision Making	
BIONB 4750	Sleep - Evolution and Neural Basis	
BIONB 4910	Principles of Neurophysiology	
Nutrition		
Sequence 1		
NS 1150	Nutrition, Health, and Society (and)	3
Sequence 1 Depth course: Select one of the following:		
NS 2750	Human Biology and Evolution	
NS 3060	Nutrition and Global Health	
NS 3150	Obesity and the Regulation of Body Weight	
NS 3200	Introduction to Human Biochemistry	
NS 3310	Human Nutrition and Nutrient Metabolism	
NS 3320	Methods in Nutritional Sciences	
NS 3410	Human Anatomy and Physiology	
NS 3450	Introduction to Physiochemical and Biological Aspects of Foods	
NS 4200	Diet and the Microbiome	
NS 4250	Nutrition Communications and Counseling	
NS 4300	Proteins, Transcripts, and Metabolism: Big Data in Molecular Nutrition	
NS 4410	Nutrition and Disease	
NS 4500	Public Health Nutrition	
Sequence 2		
NS 1220	Nutrition and the Life Cycle	3
Sequence 2 Depth course: Select one of the following:		
NS 2750	Human Biology and Evolution	
NS 3060	Nutrition and Global Health	
NS 3150	Obesity and the Regulation of Body Weight	
NS 3200	Introduction to Human Biochemistry	
NS 4140	Maternal and Child Nutrition and Health	
NS 3310	Human Nutrition and Nutrient Metabolism	
NS 3320	Methods in Nutritional Sciences	
NS 3410	Human Anatomy and Physiology	
NS 3450	Introduction to Physiochemical and Biological Aspects of Foods	
NS 4200	Diet and the Microbiome	
NS 4250	Nutrition Communications and Counseling	
NS 4300	Proteins, Transcripts, and Metabolism: Big Data in Molecular Nutrition	
NS 4410	Nutrition and Disease	
NS 4420	Implementation of Nutrition Care	

Core Courses

One course. Should be completed by end of junior year.

Code	Title	Hours
Select one of the following:		
BSOC 2071	Introduction to the History of Medicine	3
BSOC 2468	Medicine, Culture, and Society	4
BSOC 3011	Life Sciences and Society	3

Theme

(Five courses that correspond to the theme selected by the student). These courses must be above the 2000-level, at least 3 credit hours, and taken for a letter grade. For a course to count towards the major, students must receive at least a C- as a final grade. Choose these courses as follows:

Natural Science issues/Biology Electives (two courses). Select from the list of BSOC approved Natural Sscience issues/Biology Elective courses.

Code	Title	Hours
Natural Science/Biology Electives (two courses)		
Select two courses from the following list of BSOC approved Natural Science/Biology Elective courses:		
ANSC 2400	Biology of Reproduction	3
ANTHR 3235	Bioarchaeology (crosslisted)	3
ANTHR 3390	Primate Behavior and Ecology with Emphasis on African Apes (crosslisted)	3
BEE 3299	Sustainable Development	3
BIOAP 2140	Sex Ed: Understanding Human Reproduction	3
BIOMI 2600	Microbiology of Human Contagious Diseases	3
BIOMS 4150	Essential Immunology	3
BIONB 3215	Gender and the Brain (crosslisted)	3
BSOC 2101	Plagues and People (crosslisted)	3
BSOC 3441	Insect Conservation Biology (crosslisted)	3
ENTOM 2030	Honey Bees: Their Intriguing Biology and Interactions with Humans and More	3
ENTOM 4520	Biology of Disease Vectors	3
HD 2200	The Human Brain and Mind: An Introduction to Cognitive Neuroscience (crosslisted)	3
HD 3210	Developmental Cognitive Neuroscience	3
HD 3320	Gender and Psychopathology (crosslisted)	3
HD 4260	Translational Research on Memory and Neuroscience (crosslisted)	3
NS 3060	Nutrition and Global Health	3
NS 3150	Obesity and the Regulation of Body Weight (crosslisted)	3
NS 3310	Human Nutrition and Nutrient Metabolism	4
NS 3600	Epidemiology	3
NTRES 2010	Environmental Conservation	4
NTRES 4280	Principles and Practices of Applied Wildlife Science	3
PLSCI 2400	Green World, Blue Planet	3
PLSCI 2470	Plants and Cultures around the World	3
PSYCH 2230	Intro to Behavioral Neuroscience (crosslisted)	3
PSYCH 2750	Introduction to Personality (crosslisted)	3

Code	Title	Hours
Humanities/Social Sciences Electives (two courses) [1]		
Select two courses from the following list of BSOC approved Humanities/Social Science Elective courses:		
ANTHR 2421	Worlding Sex and Gender (crosslisted)	3
ANTHR 3230	Humans and Animals (crosslisted)	4
ANTHR 3390	Primate Behavior and Ecology with Emphasis on African Apes (crosslisted)	3
ANTHR 4530	Mental Health, Healing Systems, Community-Based Care: Resilience in the Nilgiris Biosphere Reserve	4
BEE 3299	Sustainable Development	3
BSOC 2101	Plagues and People (crosslisted)	3
BSOC 2561	Medicine and Healing in China (crosslisted)	4
BSOC 2350	Literature and Medicine (crosslisted)	3
BSOC 2581	Environmental History (crosslisted)	4
BSOC 2640	Introduction to Ancient Medicine (crosslisted)	4
BSOC 3181	Living in an Uncertain World: Science, Technology, and Risk (crosslisted)	4
BSOC 3311	Environmental Governance (crosslisted)	3
BSOC 3460	Anthropology of the Body (crosslisted)	3
BSOC 4351	Postcolonial Science (crosslisted)	3
BSOC 4413	Environments, Disasters, Health (crosslisted)	3
BSOC 6703	(crosslisted)	3
DEA 4220	Ecological Literacy and Design (crosslisted)	3
GDEV 2010	Population and Social Change	3
GDEV 3030	FoodCycle: Systems Thinking Toward Circular Economy for Organic Resources	3
GDEV 3230	Gender and Development	3
HD 2510	Social Gerontology: Aging and the Life Course (crosslisted)	3
HD 3190	Memory and the Law (crosslisted)	3
HD 3620	Human Bonding	3
HD 4260	Translational Research on Memory and Neuroscience (crosslisted)	3
NS 2600	Introduction to Global Health	3
NS 3150	Obesity and the Regulation of Body Weight (crosslisted)	3
NS 3600	Epidemiology	3
NS 4450	Toward a Sustainable Global Food System: Food Policy for Developing Countries (crosslisted)	3
NS 4570	Health, Poverty, and Inequality: A Global Perspective (crosslisted)	3
NTRES 3330	Ways of Knowing: Indigenous and Place-Based Ecological Knowledge (crosslisted)	3
PUBPOL 2300	Introduction to Policy Analysis	4
PUBPOL 2350	The U.S. Health Care System	3
PUBPOL 3280	Fundamentals of Population Health (crosslisted)	3
PUBPOL 4370	The Economics of Health Care Markets (crosslisted)	3
PSYCH 2750	Introduction to Personality (crosslisted)	3
PSYCH 2800	Introduction to Social Psychology (crosslisted)	3
PSYCH 3250	Adult Psychopathology (crosslisted)	3

[1] Courses from the list of senior seminars may be used as theme electives if not used to meet another requirement.

Code	Title	Hours
Senior Seminar (one course taken junior or senior year)		
Select from the list of BSOC approved Senior Seminars: [1]		
ANTHR 4448	Death, Dying, and the Dead (crosslisted)	3
ANTHR 4682	Medicine and Healing in Africa (crosslisted)	3
ASRC 4602	Women and Gender Issues in Africa (crosslisted)	3
BSOC 4101	The Entangled Lives of Humans and Animals	4
BSOC 4131	Comparative Environmental History (crosslisted)	3
BSOC 4227	Embodiment of Inequality: A Bioarchaeological Perspective (crosslisted)	3
BSOC 4425	(crosslisted)	4
BSOC 4634	Curating the British Empire (crosslisted)	3
BSOC 4682	Medicine and Healing in Africa (crosslisted)	3
BSOC 4691	Food, Agriculture, and Society (crosslisted)	3

BSOC 4911	Vitality and Power in China (crosslisted)	4
COMM 4300	Ethics in New Media, Technology, and Communication (crosslisted)	3
DEA 4500	Policy Meets Design: High-Impact Facilities of the 21st Century	3
ENGL 4425	(crosslisted)	4
HD 4250	Translational Research on Decision Making	3
HIST 4127	The Body Politic in Asia (crosslisted)	4
NS 4450	Toward a Sustainable Global Food System: Food Policy for Developing Countries (crosslisted)	3
NS 4570	Health, Poverty, and Inequality: A Global Perspective (crosslisted)	3
NTRES 4300	Environmental Policy Processes I	0.5
STS 4041	Controversies in Science, Technology and Medicine: What They Are and How to Study Them	3
STS 4231	Gender and Technology in Historical Perspectives (crosslisted)	4
BSOC 4412	Conceptions of the Body in Medicine and Healing (crosslisted)	3
STS 4561	Evaluation and Society (crosslisted)	4
STS 4661	Public Communication of Science and Technology (crosslisted)	3

[1] Select from the list of BSOC approved Senior Seminars. Or any 4000-level or above Social Science or Humanities course that has a significant focus on the life sciences (for example; biological science, medicine, environment, healthcare, the body). This includes 4000-level Humanities/Social Science Electives

Note:

- Students may take BIOAP 2140 Sex Ed: Understanding Human Reproduction or ANSC 2400 Biology of Reproduction for Animal Science major credit, but not both.
- First-year writing seminars and introductory courses may not be used to fulfill major requirements.

Independent Study

Permission of faculty supervisor required. Enrollment limited to: biology and society majors. To apply for independent study, please complete the on-line form (https://data.arts.cornell.edu/as-stus/indep_study_intro.cfm).

Projects under the direction of a Biology & Society faculty member are encouraged as part of the program of study in the student's theme area. Applications for research projects are accepted by individual faculty members. Students may enroll in 1–4 credits of BSOC 3751 - Independent Study (https://courses.cornell.edu/preview_program.php?catoid=60&poid=30245#tt7450); with written permission of the faculty supervisor and may elect either the letter grade or the S–U option. Students may elect to do an independent study project as an alternative to, or in advance of an honors project. Information on faculty research, scholarly activities, and undergraduate opportunities are available in the Biology & Society office, 303 Morrill Hall. Independent study credits may not be used in completion of the major requirements.

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.

CALS Graduation Requirements for the Bachelor of Science

Students are responsible for understanding and fulfilling all the requirements necessary for graduation. Additionally, students must promptly notify the college of any discrepancies or issues with their academic records.

CALS undergraduate students follow college distribution requirements corresponding to their matriculation/entry term and class standing. Students matriculating/entering before Fall 2025 will complete the existing CALS distribution requirements. First-year students matriculating/entering Fall 2025 or later will be subject to the new CALS 2025+ distribution requirements. However, sophomore and junior transfer students matriculating/entering in Fall 2025 will follow the existing CALS distribution requirement to align with students in their corresponding cohort year. All students must adhere to the requirements designated for their matriculation/entry term and class standing. *There are no exceptions to this policy.*

Although specific requirements vary between the curriculums, all students must complete the following Graduation Requirements to earn the Bachelor of Science degree:

1. University Graduation Requirements
2. Credit Requirements
3. Distribution Requirements
4. Residency Requirement
5. GPA Requirement
6. Major Requirements
7. Application to Graduate

Credit Requirement Policies

1. Minimum total credits: 120 academic credits are required for graduation.
   - Important Exceptions:
     - Repeated Cornell courses that do not allow repeat for credit will not count towards the number of credits required for graduation. These credits do count toward the minimum twelve (12) credits required for full-time status and good academic standing.
     - Forbidden Overlaps will not count towards credits required for graduation. These credits do count toward the minimum twelve (12) credits required for full-time status and good academic standing. More information can be found under the Course Enrollment and Credits page.
     - Review or supplemental courses (e.g., 1000- to 1099-level) do not count towards the number of credits required for graduation. These credits do not count toward the minimum twelve (12) credits required for full-time status or good academic standing.
     - Physical Education courses do not count toward the required 120 credits for graduation. They also do not count toward the minimum twelve (12) credits required for full-time status or good academic standing.
2. Minimum Credits at Cornell: Sixty (60) academic credits must be completed at Cornell (includes Cornell in Rome, Capital Semester, and Brooks School Cornell in Washington DC Connect Program, and Shoals Marine Laboratory).
3. Maximum Non-Cornell Credits: Sixty (60) non-Cornell credits (AP, CASE, IB, GCE, French Baccalauréat, Cambridge Pre-University, and external transfer coursework) can be applied toward degree requirements. A student can transfer in a maximum of fifteen (15) academic credits earned before matriculation as a first-year student at any accredited college/university (AP, CASE, IB, GCE, French Baccalauréat, and external transfer credits). Refer to Non-Cornell (Transfer) Credit under Policies and Procedures for additional information.
4. All CALS students are required to fulfill a minimum number of CALS Credits, structured credits, and letter-graded credits. Specific policies are in the curriculum sections below.

Residency Requirements

- Eight (8) semesters of full-time study are expected. External transfer students are credited with one (1) semester in residence for each full-time semester (or equivalent) completed at another accredited institution prior to matriculation at Cornell.
- Internal transfer students must complete two (2) semesters in residence in CALS.
- The final semester before graduation must be completed in a Cornell program as a full-time student. Summer or winter semesters cannot be counted as a final semester. (The School of Continuing Education does not count towards a final semester in residency.)
- Students in the ninth (9^{th}) (or equivalent) and final semester may be eligible to apply for prorated tuition. The eligibility criteria are listed online (https://cals.cornell.edu/undergraduate-students/cals-student-services/degree-advising/cals-graduation-requirements-for-bachelor-of-science/).
- The following programs are in residency: Cornell in Washington DC Connect Program (Fall or Spring only), Capital Semester, Shoals Summer Semester.

Grade Point Average (GPA) Requirements

Minimum cumulative GPA: 2.00 or above must be maintained. Students must earn a minimum cumulative GPA of 2.00 or better to graduate. The cumulative GPA includes all letter grades earned at Cornell.

CALS Degree Requirements Prior to 2025 (applies to Transfers entering Fall 2025)

These requirements apply to: First-year students who matriculated before Fall 2025, sophomore transfers who matriculate prior to Fall 2026, and

junior transfers who matriculate before Fall 2027. All students must follow the requirements based on their matriculation and expected graduation dates. *There are no exceptions to this policy.*

Students are required to fulfill:

1. University Graduation Requirements:
   a. Physical Education.
   b. Swim Requirement.
2. Credit Requirements: 120 academic credits, of which a minimum of fifty-five (55) must be taken from the College of Agriculture and Life Sciences at Cornell. A minimum of one hundred (100) credits must be in courses for which a letter grade was received. PE and supplemental courses do not count as academic credit.
   a. Fifty-five (55) CALS Credits are required for graduation. CALS Credits consist of courses offered within CALS and in Applied Economics and Management, Biological Sciences, Biology & Society, Earth and Atmospheric Sciences, Environment and Sustainability, Information Science, Nutritional Science, and the Department of Statistics and Data Science. CALS Credits include all courses with the following subjects: AGSCI, AIISP, ALS, AEM, ANSC, BEE, BIOG, BIOAP, BIOCB, BIOEE, BIOMG, BIOMI, BIOMS, BIONB, BIOSM, BSOC, BTRY, COMM, DSOC, EAS, EDUC, ENTOM, ENVS, FDSC, GDEV, IARD, INFO, LA, LEAD, NS, NTRES, PLBIO, PLBRG, PLHRT, PLPPM, PLSCI, PLSCS , STSCI, VIEN.
   b. Minimum Letter-Graded Credits: One hundred (100) credits. Proration of letter-graded credits may be applicable to students that transfer non-Cornell credits (see Proration Chart for non-Cornell credit (https://experience.cornell.edu/sites/default/files/resource-files/Proration%20Chart%20for%20Students%20with%20Non%20Cornell%20Credit.pdf)).
   c. Maximum Credits earned through Special Studies (Independent Study, Research, Teaching Assistantships, and/or Internships): Fifteen (15) credits of "unstructured" coursework can be applied towards graduation requirements. Proration of structured credits may be applicable to students that transfer non-Cornell credits (see Proration Chart for non-Cornell credit (https://experience.cornell.edu/sites/default/files/resource-files/Proration%20Chart%20for%20Students%20with%20Non%20Cornell%20Credit.pdf)).
3. Residency: Eight (8) semesters of full-time study are expected. External transfer students are credited with one (1) semester of residence for each full-time semester (or equivalent) completed at another accredited institution prior to matriculating at Cornell.
4. GPA: Students must earn a minimum cumulative GPA of 2.00 or better to graduate. The cumulative GPA includes all letter grades earned at Cornell.
5. Physical and Life Sciences: Eighteen (18) credits, of which six (6) credits must be Introductory Life Sciences/Biology and three (3) credits must be Chemistry or Physics.
6. Quantitative Literacy: Faculty legislation requires minimum competency in quantitative literacy. This requirement can be satisfied by taking an approved calculus or statistics class.
7. Social Science and Humanities: Students must complete four (4) courses within the seven (7) categories of Humanities and Social Sciences. The courses MUST span at least three (3) different categories. Human Diversity (D) is a required category. Humanities courses must be a minimum of three (3) credits.
8. Written and Oral Expression: Nine (9) credits total, of which at least six (6) must be in Written Expression. Oral Expression is not required by the college but may be required for some majors. If Oral Expression is not required by the major, all nine credits may be in Written Expression.
9. Major: See individual department listings for major requirements.
10. Application to Graduate: See Graduation Resources (https://cals.cornell.edu/undergraduate-students/cals-student-services/graduation-resources/).

Distribution Requirements

The purpose of the distribution requirement is to have all students achieve common learning outcomes. It is expected that through college and major course requirements graduates will be able to:

- Explain, evaluate, and effectively interpret factual claims, theories, and assumptions in the student's discipline(s) (especially in one or more of the college's priority areas of Food & Energy Systems, Social Sciences, Life Sciences, and Environmental Sciences) and more broadly in the sciences and humanities.
- Find, access, critically evaluate, and ethically use information.
- Integrate quantitative and qualitative information to reach defensible and creative conclusions.
- Communicate effectively through writing, speech, and visual information.
- Articulate the views of people with diverse perspectives.
- Demonstrate the capability to work both independently and in cooperation with others.

Through the study of Physical and Life Sciences, students develop their understanding and appreciation of the physical sciences, enhance their quantitative reasoning skills, and gain an appreciation of the variability of living organisms. Social Sciences and Humanities gives students perspective on the structure and values of the society in which we live and prepares them to make decisions on ethical issues that will affect their work and role in society. Written and Oral Expression is designed to help students become competent and confident in the use of oral and written communication to express themselves and their ideas.

Important Notes:

- Credits received for independent study, fieldwork, teaching, research, work experience, and internships cannot be used to fulfill the distribution requirements
- Review or supplemental courses, such as 1000- to 1099-level courses, will not be counted in the distribution areas.
- First-Year Writing Seminars (FWS) cannot be used to satisfy the Physical and Life Sciences distribution area.
- Courses that fulfill distributions are approved by the CALS Curriculum Committee. Distributions cannot be applied to a course retroactively, and individual student petitions for Cornell courses to fulfill distributions will not be accepted. Students may request a review of external transfer courses for fulfilling distribution requirements.

Physical and Life Sciences:

Eighteen (18) credits, of which six (6) credits must be Introductory Life Sciences/Biology and three (3) credits in Chemistry or Physics. Courses that count for Introductory Life Sciences/ Biology, Chemistry/Physics, Quantitative Literacy, and Other Physical and Life Sciences count towards the eighteen (18) credits for this requirement

Introductory Life Sciences/Biology Requirement (BIO-AG):
Students must complete at least six (6) academic credits of Introductory Life Sciences/Biology. Courses that count towards this requirement have

the BIO-AG distribution attribute. Note: CALS does NOT accept BIO-AS for BIO-AG.

Offerings in the area provide a foundation in the field of biology. Courses must include: an evolutionary component, instruction on applying the process of science and a significant student-centered teaching component.

Chemistry/Physics (CHPH-AG):
Students must complete a minimum of three (3) credits of Chemistry or Physics. Includes all Cornell courses with the CHEM or PHYS prefix (excluding courses that are supplemental, independent study, research, TA, internship, and First-Year Writing Seminar). Courses that count towards this requirement have a CHPH-AG distribution attribute. Additionally, courses with the prefix CHEM or PHYS of at least 11xx numbering and a minimum of three (3) credits are accepted as fulfilling CHPH-AG.

Courses that meet the CALS Chemistry or Physics (CHPH) requirement provide students with a foundational understanding of key scientific principles. These courses delve into the study of chemistry (focusing on the composition, properties, and transformations of substances) or physics (exploring the principles of matter, energy, and their interactions). Fulfilling this requirement equips students with essential scientific knowledge that supports practical and innovative applications in fields like agriculture, environmental science, and food science, thereby fostering their ability to address and solve critical challenges within these domains.

Quantitative Literacy (MQL-AG):
Students must complete one (1) Quantitative Literacy course. Courses that count towards these requirements have an MQL-AG distribution attribute. Additionally, courses of at least 11xx numbering with the MATH prefix may fulfill this category. Calculus courses and Introductory Statistics courses may also fulfill MQL-AG.

Faculty legislation requires minimum competency in quantitative literacy. Courses that fulfill the Mathematics and Quantitative Literacy distribution in CALS enhance students' problem-solving skills by teaching them to understand abstract, logical relationships. These classes focus on the mathematical analysis of data, modeling natural and man-made systems, and developing algorithms critical for computation. Students will learn various quantitative methods and how to apply quantitative reasoning across different fields.

This requirement can also be satisfied by earning a score of four (4) or five (5) on the AP Calculus exam or a score of five (5) on the AP Statistics exam, or transfer of an approved calculus or statistics course with a minimum letter grade of "C" or better.

Other Physical Life Sciences (OPHLS-AG):
Other Physical Life Sciences courses count towards the eighteen (18) credit total for the Physical and Life Sciences requirement. Courses that count towards this requirement have the OPHLS-AG distribution attribute. The number of OPHLS-AG courses taken will vary by student. Courses with the following distributions are also accepted for the CALS OPHLS-AG distribution: PBS-HE, BIO-AS, PHS,AS, SDS-AS. Additionally, any course with BIO-AG, CHPH-AG or MQL-AG may alternatively fulfill OPHLS-AG.

Offerings in this area explore additional physical and life science subjects as well as quantitative literacy (math) courses. Courses satisfying this requirement help students understand and appreciate the physical sciences, enhance quantitative reasoning skills, or explore the variability of living organisms.

Social Sciences and Humanities:
Students must complete four (4) courses within the seven (7) categories of Humanities and Social Sciences. The courses MUST span at least three (3) different categories. Human Diversity (D) is a required category. Humanities courses must be a minimum of three (3) credits.

No more than two (2) courses in the same department will be counted toward the distribution requirement. Social Sciences & Humanities Categories:

(Also refer to Distribution Requirement Codes (https://catalog.cornell.edu/general-information/distribution-codes/))

Cultural Analysis (CA-AG)
These courses study human life in particular cultural contexts through interpretive analysis of individual behavior, discourse, and social practice. Topics include belief systems (science, medicine, religion), expressive arts and symbolic behavior (visual arts, performance, poetry, myth, narrative, ritual), identity (nationality, race, ethnicity, gender, sexuality), social groups and institutions (family, market, community), and power and politics (states, colonialism, inequality).

CALS also accepts courses of at least three (3) credits with the following distributions as fulfilling CA-AG: ALC-AS, ALC-HA, ALC-AAP, CA-HE, CA-AAP, GLC-AS

Foreign Language (FL-AG)
Foreign Language courses available for CALS students at Cornell are offered by several departments, including Africana Studies and Research Center (AS&RC – language courses only), Asian Studies with languages such as Bangla-Bengali, Burmese, Chinese, Hindi, Indonesian, Japanese, Khmer, Korean, Sanskrit, Tagalog, Thai, and Vietnamese, and Classics (CLASS – language courses only). Additional offerings are provided by German Studies, which includes German, Dutch, and Swedish (language courses only), Linguistics (LING – language courses only), Near Eastern Studies (NES - language courses only), Romance Studies with languages like Catalan, French, Italian, Portuguese, Quechua, and Spanish, and Russian Studies, covering Russian, Hungarian, Polish, Serbian/Croatian, and Ukrainian. CALS will recognize these Foreign Language (FL) classifications by any college at Cornell, provided the class is taken for three (3) or more credits. Transfer students may have non-Cornell courses that meet SUNY World Languages requirements and are a minimum of three (3) credits reviewed as fulfilling FL-AG.

Human Diversity (D-AG)
These courses analyze historical or contemporary marginalized communities and the culturally specific contexts that produce unequal power relations in terms of race, nationality, ethnicity, indigeneity, sexuality, disability, religion, gender, or economic status.

Definition of "marginalize": Any groups with reduced access to social status, political influence, economic advancement, educational advancement, healthcare, information, or any of the goods, services, and powers of a society can be considered "marginalized." Causes of marginalization may be related to ethnic status, religion, country of origin, sexual orientation, geography, economics, and government policies. Those who exist on the furthest margins of a society are frequently subject to several of these forces.

CALS also accepts courses of at least three (3) credits with the following distributions as fulfilling D-AG: SCD-AS, SCD-HA, D-HE.

Non-equated external transfer courses will only be considered for junior transfer students who have taken an appropriate course at their prior institution and whose schedule does not allow space to take a Human Diversity (D-AG) course at Cornell. These situations will be reviewed individually after a required appointment with CALS Student Services.

Historical Analysis (HA-AG)
These courses interpret continuities and changes—political, social, economic, diplomatic, religious, intellectual, artistic, scientific—through time. The focus may be on groups of people, dominant or subordinate, a specific country or region, an event, a process, or a time period.

CALS also accepts courses of at least three (3) credits with the following distributions as fulfilling HA-AG: HA-AAP, HST-AAP, HST-AS, HST-HA, HA-HE

Knowledge, Cognition, and Moral Reasoning (KCM-AG)
These courses investigate the bases of human knowledge in its broadest sense, ranging from cognitive faculties shared by humans and animals such as perception, to abstract reasoning, to the ability to form and justify moral judgments. Courses investigating the sources, structure, and limits of cognition may use the methodologies of science, cognitive psychology, linguistics, or philosophy. Courses focusing on moral reasoning explore ways of reflecting on ethical questions that concern the nature of justice, the good life, or human values in general.

CALS also accepts courses of at least three (3) credits with the following distributions as fulfilling KCM-AG: ETM-AAP, ETM-AS, ETM-HA, KCM-AAP, KCM-HE

Literature and the Arts (LA-AG)
These courses explore literature and the arts in two different but related ways. Some courses focus on the critical study of artworks and on their history, aesthetics, and theory. These courses develop skills of reading, observing, and hearing and encourage reflection on such experiences; many investigate the interplay among individual achievement, artistic tradition, and historical context. Other courses are devoted to the production and performance of artworks (in creative writing, performing arts, and media such as film and video). These courses emphasize the interaction among technical mastery, cognitive knowledge, and creative imagination.

CALS also accepts courses of at least three (3) credits with the following distributions as fulfilling LA-AG, ALC-AS, ALC-HA, ALC-AAP, LA-AAP

Social and Behavioral Analysis (SBA-AG)
These courses examine human life in its social context through the use of social scientific methods, often including hypothesis testing, scientific sampling techniques, and statistical analysis. Topics studied range from the thoughts, feelings, beliefs, and attitudes of individuals to interpersonal relations between individuals (e.g., in friendship, love, conflict) to larger social organizations (e.g., the family, society, religious or educational or civic institutions, the economy, government) to the relationships and conflicts among groups or individuals (e.g., discrimination, inequality, prejudice, stigmas, conflict resolution).

CALS also accepts courses of at least three (3) credits with the following distributions as fulfilling SBA-AG: SSC-AS, SBA-HE, SBA-AAP, SSC-AAP

Written and Oral Expression:

Nine (9) credits total, of which at least six (6) must be in Written Expression. Oral Expression is not required by the college but may be required for some majors. If Oral Expression is not required by the major, all nine (9) credits may be in Written Expression. Writing in the Majors (WIM) courses do not count towards Written Expression.

Written Expression (WRT-AG)
All students are required to take at least six (6) credits of Written Expression and may take nine (9) credits to fulfill the Written and Oral Expression requirement. Courses that fulfill the Written Expression requirement in CALS focus on enhancing students' writing skills. Courses meeting this requirement devote at least 50% of class time to writing proficiency, involve at least five (5) writing assignments with detailed feedback, and emphasize revision and development. These courses ensure personalized attention and help students articulate ideas clearly, argue effectively, and engage with evidence critically. This structure supports students in improving both their writing mechanics and their ability to communicate persuasively across contexts.

CALS also accepts FWS courses as fulfilling WRT-AG. Transfer students may have courses that meet the SUNY Writing Requirement considered to fulfill this requirement.

Oral Expression (ORL-AG)
Students may take one (1) Oral Expression course towards the nine (9) required credits for Written and Oral Expression. Courses that fulfill the CALS Oral Expression requirement enhance students' public speaking and communication skills. Courses meeting this requirement center on improving oral proficiency, dedicating over 50% of class time to the principles of effective communication. Each course involves at least five (5) formal oral presentations, with four (4) undergoing detailed revisions based on structured feedback that focuses on speech organization, clarity, evidence use, and delivery. These courses offer personalized guidance and encourage students to apply feedback to subsequent presentations. The aim is to refine students' abilities to articulate ideas persuasively and adapt messages for different contexts, ensuring they can communicate effectively on any topic.

CALS 2025+ Degree Requirements (applies to first-year students who start Fall 2025 or after)

The 2025+ CALS Curriculum applies to first-year students who enter CALS starting Fall 2025 and all semesters after. Transfer students entering Fall 2025 and all continuing students will follow the Prior to Fall 2025 Requirements. There are no exceptions to this policy.

All students are required to complete:

1. University Graduation Requirements
2. Credit Requirements
3. 120 Credits are required to graduate, of the 120:
    - A minimum seventy-five (75) must be CALS Credits (fifty-five (55) for transfer students).
    - A minimum of 105 must be structured academic credits (transfer courses can count towards this requirement).
    - A minimum of one hundred (100) letter-graded academic credits (transfer courses can count towards this requirement).
    - The following courses do not count towards the 120: PE course, courses numbered 1000-1099, forbidden overlap courses, and repeated courses (that do not allow repeats).
4. Residency Requirement
5. GPA Requirement
6. Distribution Requirements
7. E3 Learning Milestone

8. Major Requirements: See individual department listings for major requirements.
9. Application to Graduate: Information can be found on graduation webpage.

75 CALS Credits

Students are required to take seventy-five (75) CALS Credits. The following counts as CALS Credit:

- Any course with the following prefixes: AGSCI, AIIS, ALS, ANSC, BEE, BIOG, BIOAP, BIOCB, BIOEE, BIOMG, BIOMI, BIOMS, BIONB, BIOSM, BSOC, BTRY, COMM, EAS, EDUC, ENTOM, ENVS, FDSC, GDEV, INFO, LA, LEAD, NS, NTRES, PLSCI, STSCI, VIEN
- Courses with the FWS attribute (two (2) courses maximum)
- For BSBU students only: prefix AEM
  - AEM courses will not count towards the required seventy-five (75) CALS Credits, except for students who have officially been accepted to the AEM major. CALS students who choose to complete an AEM minor cannot count AEM courses towards their seventy-five (75) required CALS courses.

Students with matriculation status of Transfer will have a requirement of fifty-five (55) CALS Credits.

Distribution Requirements

The College of Agriculture and Life Sciences (CALS) college distribution requirements are the cornerstone of a diverse and comprehensive education.

These requirements encourage our students to venture beyond familiar subjects, develop a deeper understanding of others, uncover insights that can spark new interests, and pave the way toward meaningful careers that can shape a just and sustainable future.

The CALS distribution requirements consist of:

- A minimum of thirty-nine (39) credit hours of coursework.
- A single course may not fulfill more than one college distribution requirement. However, a single course can simultaneously fulfill college and major requirements.
- Students in CALS have the option to take some of these courses either for a grade or using S/U grading. However, letter grades may be required for some majors.
- Non-academic credit courses (numbered 1000-1099 and PE) do not fulfill distribution requirements. Special Topics Courses (numbered 4940) do not fulfill distribution requirements.
- Courses that fulfill distributions are approved by the CALS Curriculum Committee. Distributions cannot be applied to a course retroactively, and individual student petitions for Cornell courses to fulfill distributions will not be accepted. Students may request a review of external transfer courses for fulfilling distribution requirements.

Students must complete all of the following:

Agriculture, Food Systems & Human Nutrition (AFS-AG)

- Take one (1) Agriculture, Food Systems & Human Nutrition (AFS-AG) course.

The Agriculture, Food Systems & Human Nutrition distribution requirement at CALS emphasizes a comprehensive understanding of the food system, including production, processing, distribution, consumption, and waste, with a focus on the integration of these multiple components. Students must learn to describe, analyze, and understand the interdependent nature and the environmental and nutritional impacts of the food system. To fulfill the requirement, a course must cover at least two components of the food system, analyze their interactions, and dedicate at least half of its content to this holistic view, potentially including topics like agricultural history, food sustainability, and nutrition access.

Biological Sciences (BSC-AG)

- Take one (1) Biological Sciences (BSC-AG) course. Note: the following are NOT accepted as fulfilling BSC-AG: BIO-AG, BIO-AS.

Courses that meet the Biological Sciences requirement for CALS dedicate most of their content (at least 75%) to exploring one or more of the following biological concepts: evolution, structure and function, the flow, exchange and storage of information, pathways and transformations of energy and matter, or living systems. These courses include an evolutionary component, teach students how to apply scientific methods, and include at least one of the following competencies: quantitative reasoning, modeling and simulation, interdisciplinary thinking, interdisciplinary collaboration and communication, or science and society relational understanding. Courses also emphasize student-centered learning activities such as labs, problem solving, case studies, research projects, or collaborative projects. Some courses within this distribution are identified as suitable for non-life sciences majors— these courses have no prerequisites and require only high school-level science knowledge.

Physical Sciences (PSC-AG)

- Take one (1) Physical Sciences (PSC-AG) course.

CALS Physical Sciences courses cover at least 75% of their content in fields such as chemistry, physics, earth science, atmospheric science, or astronomy, connecting theoretical knowledge to practical applications. Courses also emphasize student-centered learning activities such as labs, problem solving, case studies, research projects, or collaborative projects. Some courses within this distribution are identified as suitable for non-sciences majors - these courses have no prerequisites and require only high school-level science knowledge.

Sustainability Challenges (SCH-AG)

- Take one (1) Sustainability Challenges (SCH-AG) course.

Courses that satisfy the sustainability distribution requirement in CALS must allocate at least 30% of content or learning outcomes to examining the intricate interplay between economic, socio-political, and environmental aspects of sustainability issues or their solutions or to exploring the connections among three or more UN Sustainable Development Goals in relation to the main class topic. Additionally, the course must incorporate a learning outcome focused on one of three key proficiencies: systems thinking, decision-making amidst uncertainty, or understanding the factors that constrain sustainability, thereby ensuring students gain a comprehensive and interdisciplinary perspective on sustainability challenges.

Data Literacy (DLG-AG and DLS-AG)

Two required courses:

- Take one (1) course with attribute Data Literacy Statistics (DLS-AG).
- Take one (1) course with attribute Data Literacy General (DLG-AG) OR one (1) course with attribute Data Literacy Statistics (DLS-AG).

CALS courses fulfilling the Data Literacy General (DLG-AG) requirement are designed to teach students how to interpret and articulate insights

from both quantitative and qualitative data, with an emphasis on various competencies such as data analysis, acquisition methods, curation, and security. Students will be expected to understand the types of data, their applications, and the ethical implications of data misuse upon completion of these courses. The courses must dedicate a significant portion of content to at least three (3) specific data literacy competencies and include at least one of these competencies as a main learning outcome.

Courses that fulfill Data Literacy Statistics (DLS-AG) additionally provide explicit instruction on mathematical approaches to collection, description, analysis, and inference of conclusions from quantitative data. Course content focuses on the Data Manipulating & Analysis competency: Ability to draw conclusions from data with quantitative and/or qualitative methods, which may include statistical or computational methods and may include tools like R, Python, Stata, Tableau, Unix, NVivo, QGIS, Excel, SPSS, etc.

Ethics (ETH-AG)

- Take one (1) course with attribute Ethics (ETH-AG). Note the following are NOT accepted as fulfilling ETH-AG: KCM-AG, ETM-AAP, ETM-AS, ETM-HA, KCM-AAP, KCM-HE.

Courses that fulfill the CALS Ethics requirement are designed to immerse students in the study of ethical principles impacting various facets of life, including personal, social, and global spheres, as well as in research and professional practices. These courses aim for students to critically engage with their values, understand diverse ethical perspectives, and articulate reasoned ethical positions. To satisfy the Ethics requirement, a course must devote over half of its content to ethical issues relevant to its main topic, incorporate historical or modern ethical debates, foster personal ethical reflection, and include specific learning outcomes focused on ethics.

Human Diversity (D-AG)

- Take one (1) course with attribute Human Diversity (D-AG).

CALS Human Diversity courses foster a comprehensive understanding of the complexities surrounding historically or contemporarily marginalized communities, emphasizing the critical analysis of unequal power dynamics shaped by factors such as race, nationality, ethnicity, indigeneity, sexuality, disability, religion, gender, or economic status. To meet this requirement, a course must allocate at least 50% of its content to examining these issues, be a minimum of three (3) credits, and achieve specific learning outcomes. These outcomes include demonstrating knowledge of diverse cultural practices, understanding systemic oppression, and assessing personal cultural perspectives to identify potential biases.

CALS also accepts courses of at least three (3) credits with the following distributions as fulfilling D-AG: SCD-AS, SCD-HA, D-HE.

Non-equated external transfer courses will only be considered for junior transfer students who have taken an appropriate course at their prior institution and whose schedule does not allow space to take a Human Diversity (D-AG) course at Cornell. These situations will be reviewed individually after a required appointment with CALS Student Services.

Cultural, Social & Historical Understanding

Take two (2) courses of the below distributions, with a maximum of one (1) course in each category: CA-AG, FL-AG, HA-AG, LA-AG, SBA-AG.

Cultural Analysis (CA-AG)

These courses study human life in particular cultural contexts through interpretive analysis of individual behavior, discourse, and social practice. Topics include belief systems (science, medicine, religion), expressive arts and symbolic behavior (visual arts, performance, poetry, myth, narrative, ritual), identity (nationality, race, ethnicity, gender, sexuality), social groups and institutions (family, market, community), and power and politics (states, colonialism, inequality).

CALS also accepts courses of at least three (3) credits with the following distributions as fulfilling CA-AG: ALC-AS, ALC-HA, ALC-AAP, CA-HE, CA-AAP, GLC-AS.

Foreign Language (FL-AG)

Foreign Language - Foreign Language courses available for CALS students at Cornell are offered by several departments, including Africana Studies and Research Center (AS&RC – language courses only), Asian Studies with languages such as Bangla-Bengali, Burmese, Chinese, Hindi, Indonesian, Japanese, Khmer, Korean, Sanskrit, Tagalog, Thai, and Vietnamese, and Classics (CLASS – language courses only). Additional offerings are provided by German Studies, which includes German, Dutch, and Swedish (language courses only), Linguistics (LING – language courses only), Near Eastern Studies (NES - language courses only), Romance Studies with languages like Catalan, French, Italian, Portuguese, Quechua, and Spanish, and Russian Studies, covering Russian, Hungarian, Polish, Serbian/Croatian, and Ukrainian. CALS will recognize these Foreign Language (FL) classifications by any college at Cornell, provided the class is taken for three (3) or more credits. Transfer students may have non-Cornell courses that meet SUNY World Languages and are a minimum of three (3) credits reviewed as fulfilling FL-AG.

Historical Analysis (HA-AG)

These courses interpret continuities and changes - political, social, economic, diplomatic, religious, intellectual, artistic, scientific - through time. The focus may be on groups of people, dominant or subordinate, a specific country or region, an event, a process, or a time period.

CALS also accepts courses of at least three (3) credits with the following distributions as fulfilling HA-AG: HA-AAP, HST-AAP, HST-AS, HST-HA, HA-HE.

Literature and the Arts (LA-AG)

These courses explore literature and the arts in two different but related ways. Some courses focus on the critical study of artworks and on their history, aesthetics, and theory. These courses develop skills of reading, observing, and hearing and encourage reflection on such experiences; many investigate the interplay among individual achievement, artistic tradition, and historical context. Other courses are devoted to the production and performance of artworks (in creative writing, performing arts, and media such as film and video). These courses emphasize the interaction among technical mastery, cognitive knowledge, and creative imagination.

CALS also accepts courses of at least three (3) credits with the following distributions as fulfilling LA-AG: ALC-AS, ALC-HA, ALC-AAP, LA-AAP.

Social and Behavioral Analysis (SBA-AG)

These courses examine human life in its social context through the use of social scientific methods, often including hypothesis testing, scientific sampling techniques, and statistical analysis. Topics studied range from the thoughts, feelings, beliefs, and attitudes of individuals to interpersonal relations between individuals (e.g., in friendship, love, conflict) to larger social organizations (e.g., the family, society,

religious or educational or civic institutions, the economy, government) to the relationships and conflicts among groups or individuals (e.g., discrimination, inequality, prejudice, stigmas, conflict resolution).

CALS also accepts courses of at least three (3) credits with the following distributions as fulfilling SBA-AG: SSC-AS, SBA-HE, SBA-AAP, SSC-AAP.

Written and Oral Expression

Nine (9) credits total, of which at least six (6) must be in Written Expression. Oral Expression is not required by the college but may be required for some majors. If Oral Expression is not required by the major, all nine (9) credits may be in Written Expression. Writing in the Majors (WIM) courses do not count towards Written Expression.

Written Expression (WRT-AG)

All students are required to take at least six (6) credits of Written Expression and may take nine (9) credits to fulfill the Written and Oral Expression requirement. Courses that fulfill the Written Expression requirement in CALS focus on enhancing students' writing skills. Courses meeting this requirement devote at least 50% of class time to writing proficiency, involve at least five (5) writing assignments with detailed feedback, and emphasize revision and development. These courses ensure personalized attention and help students articulate ideas clearly, argue effectively, and engage with evidence critically. This structure supports students in improving both their writing mechanics and their ability to communicate persuasively across contexts.

CALS also accepts FWS courses as fulfilling WRT-AG. Transfer students may have courses that meet the SUNY Writing Requirement considered to fulfill this requirement.

Oral Expression (ORL-AG)

Students may take one (1) Oral Expression course towards the nine (9) required credits for Written and Oral Expression. Courses that fulfill the CALS Oral Expression requirement enhance students' public speaking and communication skills. Courses meeting this requirement center on improving oral proficiency, dedicating over 50% of class time to the principles of effective communication. Each course involves at least five (5) formal oral presentations, with four (4) undergoing detailed revisions based on structured feedback that focuses on speech organization, clarity, evidence use, and delivery. These courses offer personalized guidance and encourage students to apply feedback to subsequent presentations. The aim is to refine students' abilities to articulate ideas persuasively and adapt messages for different contexts, ensuring they can communicate effectively on any topic.

Engaged, Experiential, Entrepreneurial (E3) Learning Milestone

The E3 Learning Milestone allows students to blend experiential learning with academics, apply theory to practice, and deepen their community and professional engagement. This milestone emphasizes learning through experience, engagement, and/or entrepreneurship, encouraging students to apply their academic knowledge in real-world settings in collaboration with diverse groups and community partners. By completing an E3-designated course or experience, students are able to link their classroom learning with practical application, understand how their experiences align with their academic goals at Cornell, and recognize their contributions to a broader community. Eligible E3 experiences include community-engaged courses, undergraduate research, internships, study-abroad programs, and more—each designed to foster these outcomes and enhance the student's role in their field and community.

Learning Outcomes

Upon completion of a course or experience that fulfills the E3 Learning Milestone requirement, students should be able to:

- Make connections between their disciplinary and scholarly learning and the practice or application of that knowledge.
- Explain how their course/experience contributes to and is informed by their learning goals at Cornell (i.e. in their major or course of study, as they define it).
- Explain how they engaged with and contributed to, or served, a community or cause greater than themselves.

The E3 Learning Milestone can be fulfilled by courses or non-course-based experiences. Courses cannot apply to another distribution requirement if used for E3.

The following courses are accepted as fulfilling E3:

- Any course with CU-CEL attribute.
- Any course with EEE-AG distribution.
- CALS E3 Research and Teaching courses with EEE-AG. With advisor approval some Independent Study (4970) and Internship academic components (4960) may fulfill this requirement.

Courses and experiences that fulfill the E3 Learning Milestone must meet the following requirements:

1. Involve practice and application of knowledge in a real context.
2. Provide learning outcomes at the outset of the course or experience, including but not limited to the learning outcomes articulated above.
3. Include an assignment or activity that promotes student reflection on their experience.

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).