Sustainability Studies (SUS)

Major and Minor in Sustainability Studies

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Sustainability Studies (SUS)

The Sustainability Studies major, leading to a Bachelor of Arts degree, provides the skills, knowledge, and preparation for students to understand and address the environmental, social, political, economic and ethical issues related to the transformation of our current societies to ones that are sustainable. The curriculum integrates principles and methodologies from social sciences, natural sciences, and humanities.

The major prepares students for entry-level employment in the public, private, or non-profit sectors in a variety of fields including economic development, foreign aid, public administration, law, diplomacy, public policy, public health, resource and energy conservation, business, finance, international trade, or eco-tourism. The major prepares students for graduate study in social science, political science, law, management and business.

The major builds on the interdisciplinary sustainability core curriculum. Students will enroll in major-specific courses in their junior and senior year. As part of the preparation, students will work in teams with students enrolled in related majors to collaboratively solve problems. Students are encouraged to take advantage of internships, project courses, independent research, and field courses to gain real-world experience.

Requirements for the Major and Minor in Sustainability Studies (SUS)

Requirements for the Major in Sustainability Studies (SUS)

A. Required Foundation Courses (32-33 credits)

- BIO 201 Fundamentals of Biology: Organisms to Ecosystems
- CHE/ENV 115 Chemistry, Life, Environment (Note: CHE 129, 131, or 152 may be substituted for CHE/ENV 115)
- ECO 108 Introduction to Economics
- MAT 125 (or MAT 130/MAT 125) or MAT 131 or AMS 151. If students do not place into MAT 125 or MAT 131 or AMS 151 on the basis of the math placement examination, MAT 123 (or MAT 119/MAT 123) is a required course for the major.
- PHI 104 Moral Reasoning or PHI 105 Politics and Society
- POL 102 Introduction to American Government
- SUS 111 Introduction to Sustainability Studies (formerly offered as SBC 111) or ENS 101 Prospects for Planet Earth
- SUS 113 Physical Geography (formerly offered as SBC 113) or GEO 102 The Earth
- SUS 115 Introduction to Human Demographics (formerly offered as SBC 115)
- SUS 201 Systems and Models (formerly offered as SBC 201)
- SUS 206 Economics and Sustainability (formerly offered as SBC 206)

B. Career and Leadership Skills (6 credits)

- SUS 301 Technical Writing and Communication (formerly offered as CSK 302)
- SUS 305 Collective Action and Advocacy (formerly offered as CSK 305)

C. Core Courses (27 credits)

Required:

- SUS 302 Integrative Assessment Models
- SUS 366 Philosophy of the Environment

Required seven (7) three-credit courses with a minimum of one (1) course in each of the following five groups:

Group 1: Physical Environment and Renewable and Non-Renewable Resources

- ENV 304 Environmental Global Change
- ENV 340 Contemporary Topics in Environmental Science
- GEO 313 Understanding Water Resources for the 21st Century
• SUS 342 Energy and Mineral Resource
• SUS 343 Age of the Anthropocene
• SUS 344 Sustainable Natural Resources (formerly offered as EHI 343)

Group 2: Ecology

• BIO 351 Ecology
• ENS 311 Ecosystem Ecology and Global Environment
• SUS 313 Ecosystem-Based Management (formerly offered as EHI 311)
• SUS 319 Preservation and Restoration of Ecosystems (formerly offered as EHI 310)
• SUS 326 Conservation Genetics
• SUS 340 Ecological and Social Dimensions of Disease (formerly offered as EHI 340)
• SUS 351 Design Ecotoxicology Research (formerly offered as EHI 350)
• SUS 352 Conduct Ecotoxicology Research (formerly offered as EHI 351)

Group 3: Human Population

• ENS 312 Population, Technology, and the Environment
• GSS 317 Geospatial Narratives: Deep Mapping for Humanities and Social Sciences
• SOC 344 Environmental Sociology
• SUS 303 Demographic Change and Sustainability
• SUS 310 Migration, Development and Population Redistribution (formerly offered as SBC 310)
• SUS 322 Human Ecology (formerly offered as EHI 322)
• SUS 324 Human Geography and the Environment
• SUS 327 Human Reproductive Ecology (formerly offered as EHI 321)
• SUS 362 Resilient Communities

Group 4: Economics

• ECO 373 Economics of the Environment and Natural Resources
• EDP 303 Spatial Economics
• SUS 306 Business and Sustainability
• SUS 307 Environmental Economics and Management
• SUS 308 Economic Development

Group 5: Environment, Policy and Society

• EDP 305 Risk Assessment and Sustainable Development
• ENS 333 Environmental Law
• ENV 310 Sustainability and Renewable Energy in Costa Rica
• ENV 316 Coastal Zone Management
• ENV 339 Economics of Coastal and Marine Ecosystems
• HIS 352 Environmental History of China
• MAR 394 Environmental Toxicology and Public Health**
• SUS 309 Global Environmental Politics (formerly offered as SBC 309)
• SUS 311 Disasters and Society: A Global Perspective (formerly offered as SBC 311)
• SUS 312 Environment, Society, and Health (formerly offered as SBC 312)
• SUS 316 Cuba and Sustainability (formerly offered as EHM 316)
• SUS 317 Environmental History of North America (formerly offered as SBC 307)
• SUS 318 American Environmental Politics (formerly offered as SBC 308)
• SUS 320 Utopia and Dystopia and the Environment in Literature and Culture (formerly offered as EHM 321)
• SUS 321 Ecology and Evolution in American Literature (formerly offered as SBC 321)
• SUS 341 Environmental Treatises and Protocols
• SUS 350 Contemporary Topics in Sustainability
• SUS 487 Research
• SUS 488 Internship

**Has a prerequisite outside of the major.
Other classes may be substituted with permission of undergraduate director.

D. Systems Courses (3 credits)

One course selected from the two choices below:

• ENV 301 Sustainability of the Long Island Pine Barrens
• SUS 401 Integrative, Collaborative Systems Project (formerly offered as SBC 401)
E. Communications and Writing Requirement

The advanced writing component of the major in SUS requires registration in the 0-credit SUS 459 and approval of either a term paper or a laboratory report written for an advanced course in the appropriate major at Stony Brook (including Readings and Research courses). Completion of SUS 459 with a grade of S will result in approval of the WRTD requirement. A list of preapproved courses can be obtained through the department.

Students should consult with the department advisor to ensure that their plan for completing the Upper Division Writing Requirement is consistent with university graduation requirements for General Education. Students completing the Stony Brook Curriculum (SBC) must complete a course that satisfies the "Write Effectively within One's Discipline" (WRTD) learning objective to graduate. The Upper Division Writing Requirement is consistent in most cases with the SBC learning outcomes for WRTD.

Note:
No more than one course (4 credits maximum) with a passing grade lower than C can be credited towards the major. Course taken with the Pass/NC option may not be applied to the major.

Study Abroad

Stony Brook University offers study abroad experiences that are focused on issues of sustainability in Cuba, Madagascar, and the Turkana Basin (Kenya). While issues of climate change, water and energy security, sustainable agriculture, environmental justice, sustainable economic development, conservation of unique and threatened ecosystems, population growth, and human health are important everywhere, viewing these issues through the lens of a different place and a different culture provides a valuable perspective. Students are encouraged to participate in study abroad experiences and to talk with their major director to determine how study abroad coursework can be used to fulfill some requirements for their major.

Double Majors

Excluding ENV 301 (Sustainability of the Long Island Pine Barrens), SUS 301 (Technical Writing and Communication), SUS 305 (Collective Advocacy and Action), and SUS 401 (Integrative Collaborative Systems Studies), no more than 6 credits of 300-400 level course credits can be applied to two majors within the School of Marine and Atmospheric Sciences.

Minor in Sustainability Studies (SUS)

The Sustainability Studies minor is intended for students who seek to complement their chosen major with a foundation in the social, economic, and environmental aspects of sustainability.

Declaration of the Minor

Students should declare the Sustainability Studies minor no later than the middle of their sophomore year, at which time they should consult with the minor coordinator or undergraduate director and plan their course of study for fulfillment of the requirements.

Requirements for the Minor in Sustainability Studies (SUS)

At least 12 credits applied to the minor may not be applied to any major or other minor within the School of Marine and Atmospheric Sciences. No more than one three-credit course in the minor may be taken under the Pass/No Credit option. All upper-division courses offered for the minor must be passed with a letter grade of C or higher. Completion of the minor requires 18 credits.

A. Required introductory courses:

- SUS 111 Introduction to Sustainability Studies (formerly offered as SBC 111) or ENS 101 Prospects for Planet Earth
- SUS 206 Economics and Sustainability (formerly offered as SBC 206)

And one of the following four courses:

- PHI 104 Moral Reasoning
- SUS 115 Introduction to Human Demography (formerly offered as SBC 115)
- POL 102 Introduction to American Government
- CHE/ENV 115 Chemistry, Life, Environment (Note: CHE 129, 131, or 152 may be substituted for CHE/ENV 115)

B. Required three courses from the following:

- EDP 303 Spatial Economics
- ENS 311 Ecosystem Ecology and Global Environment
- ENS 312 Population, Technology and the Environment
- ENS 333 Environmental Law
- ENV 301 Sustainability of the Long Island Pine Barrens
- ENV 310 Sustainable and Renewable Energy in Costa Rica or SUS 316 Cuba and Sustainability (formerly offered as EHM 316)
- ENV 340 Contemporary Topics in Environmental Science*
- GSS 317 Geospatial Narratives: Deep Mapping for Humanities and Social Sciences
- SUS 306 Business and Sustainability
- SUS 307 Environmental Economics and Management
SUSTAINABILITY STUDIES (SUS)  
Fall 2020 Bulletin

- SUS 309 Global Environmental Politics (formerly offered as SBC 309)
- SUS 310 Migration, Development and Population Redistribution (formerly offered as SBC 310)
- SUS 311 Disasters and Society: A Global Perspective (formerly offered as SBC 311)
- SUS 312 Environment, Society, and Health (formerly offered as SBC 312)
- SUS 313 Ecosystem-Based Management (formerly offered as EHI 311)
- SUS 317 Environmental History of North America (formerly offered as SBC 307)
- SUS 318 American Environmental Politics
- SUS 321 Ecology and Evolution in American Literature (formerly offered as SBC 321)
- SUS 401 Integrative, Collaborative Systems Studies (formerly offered as SBC 401)
- SUS 341 Environmental Treatises and Protocols
- SUS 350 Contemporary Topics in Sustainability*
- SUS 366 Philosophy of the Environment

*An Internship with significant practical experience [SUS 488 Internship] or an approved research project [SUS 487 Research] may be substituted for SUS 350 or ENV 340.

Sample Course Sequence for the Major in Sustainability Studies
A course planning guide for this major may be found here.

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SUS
Sustainability Studies

SUS 111: Introduction to Sustainability
Survey course introduces concept of sustainability. Sustainability is often defined as the ability to provide for the needs of the world's current population without damaging the ability of future generations to provide for themselves. This course reviews the needs of the current population and future generations, trends that affect our ability to provide those needs, and possible solutions that are environmentally, economically, and socially acceptable. Formerly offered as SBC 111; not for credit in addition to SBC 111.

SBC: SNW
3 credits

SUS 113: Physical Geography Lecture
This study of geosystems examines modern environmental problems through quantitative methods, analysis, and modeling grounded in basic and applied science and research. The goal of the course is to introduce students to the fundamental processes that dominate the atmosphere, hydrosphere, lithosphere, and biosphere, their characteristics and complex interactions, and their impact on human life and society. Formerly offered as SBC 113; not for credit in addition to SBC 113.

DEC: E
SBC: SNW
3 credits

SUS 114: Physical Geography Lab
This laboratory course provides hands on experience in understanding the geosystems, including distribution and interrelationships of climate, vegetation, soils, and landforms. Formerly offered as SBC 114; not for credit in addition to SBC 114.

Pre- or corequisite: SUS 113 (formerly SBC 113)
1 credit

SUS 115: Introduction to Human Demography
An introductory course on the study of human population. Measurement issues and data in demographic analysis, as well as demographic perspectives on the basis of a review of major sources of information about population studies will be presented. Theories incorporating social, economic and political explanations for influences on human population growth will be considered. Population processes, with focus on fertility, mortality and migration, are reviewed. Population structure and characteristics, the interaction of the population processes and the number of people in a society of a given age, sex, race, ethnicity, socio-economic levels, marital status, and gender, are reviewed. Major issues related to sustainability (such as economic development, food and pollution, urbanization, gender and minority empowerment, and the human relationship and ecology with other organisms and species) are reviewed. Formerly offered as SBC 115; not for credit in addition to SBC 115.

Prerequisite: MAT 125, MAT 131, MAT 132, AMS 151, or level 6 or higher on math placement exam

SBC: SBS
3 credits

SUS 117: Design Drawing
This introductory course exposes the student to the fundamental theories and practices employed in visually representing design concepts from observational through technical and speculative drawing. The course content introduces the student to contour drawing, rendering, orthographic projection, and pictorial drawing. Project work engages the student in the application of the above-mentioned drawing techniques and develops skills through the solution of student tailored problems. Formerly offered as SBC 117; not for credit in addition to SBC 117.

DEC: D
SBC: TECH
3 credits

SUS 118: Introduction to the Natural History of Long Island
This multidisciplinary course focuses on the natural history of Long Island and the ecological analysis of local forests, salt marshes, marine intertidal systems and bogs. Students will become familiar with observation techniques and conceptual approaches used to investigate ecological patterns and processes in the local environment. Formerly offered as EHM 118; not for credit in addition to EHM 118.

DEC: E
SBC: SNW
3 credits

SUS 200: Human Settlement: History and Future
The history of city growth over the millennia as affected by technological change is a basis for understanding the future of human settlement. More than half of the world's population currently lives in cities and urbanization continues on a global scale. The universality of urban development and resulting patterns will be presented as well as limits on growth of cities. Architectonic and socioeconomic planning theories and strategies for sustainable growth are presented. The development of Long Island, which is a microcosm of national and global patterns, will be discussed in detail. Formerly offered as SBC 200; not for credit in addition to SBC 200.

Prerequisite: WRT 102

SUS 201: Systems and Models
Introduction to the dynamic modeling of complex systems. Students will learn to use simulation software that facilitates the visualization, formulation, and analysis of systems. Students will learn about systems with positive and negative feedbacks, the effects lags on system performance, and the difference between stocks and flows. Systems studied will include ecological models, economic models, chemical models, population models, epidemiological models, and models that include the interactions between population, economic development, and the environment. Formerly offered as SBC 201; not for credit in addition to SBC 201.

Prerequisite: AMS 102 or AMS 151 or MAT 125 or MAT 131 or MAT 141 or a score of 4 or better on the Math Placement Exam

SBC: TECH
3 credits

SUS 202: Introduction to Environmental Humanities
An interdisciplinary inquiry into ethics, arts, culture, and theory in relation to environmental humanities. The course will be an overview of the emerging field of environmental humanities and will draw from multiple disciplines (philosophy, history, cultural studies, and literary criticism) to better our relationship to the nonhuman world. This course is a reading and writing intensive seminar and will require extensive writing practice, journaling, fieldwork, and formal essays. While you will be presented with established ideas and trends in environmental humanities, students will also be encouraged to formulate their own approaches to the material. The instructor values projects which exhibit critical and creative thinking along with a thorough understanding of rhetorical skills. Formerly offered as EHM 202; not for credit in addition to EHM 202.

Prerequisite: WRT 102
SUS 203: Interpretation and Critical Analysis

An introduction to interdisciplinary inquiry and representation in arts, culture, and theory with emphasis on the roles of analysis, argument, and imagination in multiple media. Requires serious engagement with sophisticated texts. Formerly offered as SBC 203; not for credit in addition to SBC 203.

Pre- or corequisite: WRT 102

DEC: G
SBC: CER, HUM, WRTD
3 credits

SUS 204: Population Studies

The course will present basic mathematics of population growth and introduce various approaches for modeling populations, including population viability analysis (PVA). PVA, the quantitative assessment of the extinction risk of rare species or populations, takes biological information (habitat requirements, birth and death rates, population size) and makes predictions about future population sizes. Real examples will be discussed for a range of organisms, from bacteria to plants and mammals. This course will provide also the background for understanding human population growth. The impacts of human population growth in the developed and developing world on the ecology of other organisms, habitats and systems will also be discussed. Formerly offered as SBC 204; not for credit in addition to SBC 204.

Prerequisite: MAT 125, MAT 131, or AMS 151
DEC: E
SBC: STEM+
3 credits

SUS 206: Economics and Sustainability

Introduction to the basic economic concepts used in sustainability analysis. Students will learn the basic concepts and how to apply them in various context. Topics include the analysis of situations in which the behavior of individuals indirectly affects the well-being of others, strategic behavior and the environment, and the use of market-oriented policies to help in the stewardship of the environment. Formerly offered as SBC 206; not for credit in addition to SBC 206.

Prerequisite: ECO 108

DEC: F
SBC: SBS+
3 credits

SUS 301: Technical Writing and Communication

A course devoted to the presentation of technical information to different audiences. Styles of writing to be covered will include grant proposals, reports, and journal articles; principles of oral presentation will include elements of design and graphics. Formerly offered as CSK 302; not for credit in addition to CSK 302.

Prerequisite: WRT 102 and declared major or minor in: COS, EDP, EHI, EHM, ENS, GSS, or SUS
SBC: SPK
3 credits

SUS 302: Integrative Assessment Models

Use, evaluation, and development of integrated assessment models. These model typically integrate environmental concerns with variables from other disciplines for the purpose of providing policy advice to decision-makers. Students will learn about the most frequently used integrated assessment models and what we can learn from them. The models studies will include the World3 model, which was the basis of the famous book "The Limits to Growth."

Prerequisite: SUS 201 (formerly SBC 201): U3/U4 status
3 credits

SUS 303: Demographic Change and Sustainability

This course will assess the unprecedented demographic changes and diversity of the 21st century, through an interdisciplinary approach. It will explore themes such as population ageing and decline, migration in population replacement, demographic change and sustainable public health, social welfare programs, environmental degradation, and differential vulnerabilities (e.g., gender, poverty, age, education, ethnicity and race, empowerment and rights).

Prerequisite: SUS 115 (formerly SBC 115)
3 credits

SUS 304: Beyond Eden: Contact Narratives, Origins and Sin

This course surveys Pueblo, African, Spanish, British, and Shinnecock contributions to American literature from the 1500s through the 1900s. Students will extend their understanding of these diverse traditions by analyzing contemporary literature that addresses the themes of nature, origins and sin, and by engaging in their own creative work. A final project will require students to examine one tradition in depth, to demonstrate understanding of theoretical approaches to literature, and to engage in historical research. Formerly offered as EHM 310; not for credit in addition to EHM 310.

Prerequisite: WRT 102

DEC: K
SBC: HFA+
3 credits

SUS 305: Collective Action and Advocacy

This course will address the ways in which people act collectively to address social problems or to change social policy. The course will be divided into two sections: a general introduction to the study of collective action, and a set of case studies in environmental activism. Formerly offered as CSK 305; not for credit in addition to CSK 305.

Prerequisite: SUS 111 (formerly SBC 111) or ENS 101
Advisory Prerequisite: POL 102 or SOC 105

DEC: F
SBC: SBS+
3 credits

SUS 306: Business and Sustainability

This course examines the interface between business and sustainability. It considers opportunities for the development and growth of profit and not-for-profit businesses associated with the promotion of sustainability. It also covers how environmental concerns and related governmental regulations influence business operations and profitability. Students will apply career skills and concepts from environmental economics to understand how business functions (e.g., operations, public relations, sales, health and safety, and corporate social responsibility) are influenced by environmental concerns. The course will highlight current issues and cases, provide an overview of theory and practice, and generate research to test students' hypotheses, and generally explore opportunities and threats to business viability. Review of current affairs, case analyses, role plays, field trips, and guest speakers will be included along with required reading in seminal theory and research.

Prerequisite: ECO 108
3 credits

SUS 307: Environmental Economics and Management

This course presents advanced concepts in environmental economics and management through a series of detailed case studies. The cases include those concerning the US sulfur-
dioxide permit trading system, the Kyoto Protocol, zoning, coastal fisheries, the use of ethanol in gasoline, tradable development rights in the Long Island Pine Barrens and the conservation of endangered species.

Prerequisite: SUS 206 (formerly SBC 206)
SBC: STAS
3 credits

SUS 308: Economic Development
This course teaches students about economic development and its relationship to the environment. Students learn about both the theory of economic growth and the way development has proceeded in various regions of the world. Examples will come from the Asian tiger economies of East Asia and the development disasters in Sub-Saharan Africa. The relationships between the levels and rates of economic growth and environmental indices will be explored.

Prerequisite: SUS 206 (formerly SBC 206)
SBC: 3 credits

SUS 309: Global Environmental Politics
This course will explore the politics of global environmental policy-making within the international realm. Focused especially on environmental dilemmas that cross national boundaries (i.e., pollution), or that are shared by multiple nations (i.e., global warming) it will look at the ways that such problems have been defined and their solutions sought, both with and without an over-arching state or governance. It will survey the many groups, interests and values that have clashed and competed with one another to exert power and influence international environmental policies, as well as the variety of international institutions and agreements that have sought to formulate and implement solutions. One goal is to illuminate how and why effective solutions to global environmental problems differ from those to scientific or engineering puzzles. The course also aims to spur student engagement with the sometimes overwhelming nature of global environmental threats, the tenuous and sometimes counterproductive ways that knowledge and power can be linked, and the ways individuals may act powerfully in service of “sustainability.” Formerly offered as SBC 309; not for credit in addition to SBC 309.

Prerequisite: SUS 111 (formerly SBC 111) or ENV 115 or ENS 101 or GEO 101 or permission of instructor
SBC: GLO
3 credits

SUS 310: Migration, Development and Population Redistribution
This course draws upon the contributions of various social and natural sciences (including population and urban geography, demography, political science, sociology, history, economics, public health and environmental sciences) to explore the effects of migratory and demographic shifts on the environment, social welfare, public health, economic development, ethnic diversity, urbanization, public policy and planning. It will examine the political, social, environmental, health and economic effects on sustainability. Formerly offered as SBC 310; not for credit in addition to SBC 310.

Prerequisite: SUS 115 (formerly SBC 115)
3 credits

SUS 311: Disasters and Society: A Global Perspective
This class introduces students to the sociological examination of natural, technological, and industrial disasters. Students will explore how and why disasters are fundamentally social events: What do disasters reveal about society? Why are the human consequences of disasters unequally distributed? What are the typical ways in which states, organizations, and communities respond to disasters? Focusing on case studies from around the world, students will discuss: What are the long-term/short-term causes of particular disasters? What forms of suffering the disasters under consideration generated? What state/civil society actions did they trigger? What advocacy networks were put in place in their aftermath? Formerly offered as SBC 311; not for credit in addition to SBC 311.

Prerequisite: SUS 111 (formerly SBC 111), or ENS 101, or GEO 101; POL 102 or SOC 105
DEC: H
SBC: STAS
3 credits

SUS 312: Environment, Society, and Health
This class examines the interactions between environment, social structures, and institutions. The first part of the class examines the ways in which environmental issues are perceived and constructed by various social actors (lay public, state officials, scientists, activists, media). The second part of the class will examine the differential impact of class, race, and gender on the distribution of hazards and risks (what is commonly known as environmental inequality). In the third part of the class, students will be introduced to different cases of contested environmental illnesses (cancer, lead-poisoning, asthma).

Prerequisite: SUS 111 (formerly SBC 111), or ENS 101, or GEO 101; POL 102 or SOC 105
DEC: F
SBC: SBS+
3 credits

SUS 313: Ecosystem Based Management
Ecosystem-Based Management (EBM) is an emerging management paradigm for balancing ecosystem health and human activities. EBM stresses that management must 1) integrate ecological, social, economic, and institutional views, 2) produce sustainable results, 3) consider uncertainty and risks in making management decisions, and 4) utilize adaptive management practices. This course will examine these principles and identify ways they may be put into practice. Formerly offered as EHI 311; not for credit in addition to EHI 311.

Prerequisite: SUS 111 (formerly SBC 111) or ENS 101; BIO 351
SBC: STEM+
3 credits

SUS 314: Civilizations and Collapse
A comparative study of the development and collapse of civilizations. Changing case studies drawn from prehistoric and historic societies in the Americas provide students with an in-depth understanding of the ways in which two non-Western cultures were affected by and attempted to cope with environmental change. Students will learn to think critically about these processes and will complete the course with an increased awareness of the diversity of human responses to climatic change.

Formerly offered as EHM 314; not for credit in addition to EHM 314.

Prerequisite: U3 or U4 status
DEC: J
SBC: GLO
3 credits

SUS 315: Ethnographic Field Methods
Ethnographic Field Methods will explore and apply the methodological tools used by anthropologists to gather and interpret data. Using classic ethnographic texts, students will study a variety of anthropological methods. Both qualitative and quantitative methods will be examined. Students will apply the methods studied in class to an independent research project throughout the semester. Formerly offered as EHM 315; not for credit in addition to EHM 315.

Prerequisite: U3/U4 standing
Advisory Prerequisite: ANT 102
3 credits

SUS 316: Cuba and Sustainability
For a variety of reasons, Cuba represents a wonderful case study for the value of using the natural history, arts, media and cultural traditions as a means of encouraging citizens to adopt environmentally sustainable practices. Working with the University of Havana Geography department, as well as Artes Escenicas Cubanas (Performing Arts organization) and Cuban writers about the environment, the class will explore the complexities of sustainability with an emphasis on the role of humanities in a global context with hands-on experience. Formerly offered as EHM 316; not for credit in addition to EHM 316.
DEC: G
SBC: EXP+, GLO, HUM
3 credits

SUS 317: American Environmental History
This course provides an overview of the history of how Americans have used, viewed and valued the natural environment. Beginning with the Indians and the early colonists (15th-16th centuries), the course will examine the cultural, social, economic, political, and technological currents that shaped North Americans' relationships with their environment in early and later industrial eras, after World War II, and finally, in the late 20th and early 21st centuries. Historical snapshots will center on people living in more natural places, such as farms and forests, as well as more built places, such as factories, cities, and suburbs. Events in the northeastern U.S. will provide a geographic focus, but the course will also look at related happenings elsewhere on the North American continent and beyond. Finally, it will examine at the growing array of movements that have identified themselves as 'environmental,' at the 'greenness' of modern culture, and at the environmental dimensions of a globalizing era. Formerly offered as SBC 307; not for credit in addition to SBC 307.
Prerequisite: WRT 102
DEC: K & 4
SBC: SBS+, USA
3 credits

SUS 318: American Environmental Politics
This course will survey the politics of environmental policy-making in the United States. It examines how contrasting political, economic and social interests and values have clashed and contested with one another, and the exerted power, in the environmental policy realm. The course will explore past precedents and roots, but with a view to explain the shape of this realm in the modern United States, including the many actors and institutions: local, regional and national governments, non-governmental organizations and interest groups, as well as the public. It will look at the main patterns by which these groups have defined environmental problems and formulated and implemented solutions. A chief goal is to illuminate how and why solutions of real-world environmental problems, if they are to be effective, differ from those of scientific or engineering puzzles. Formerly offered as SBC 308; not for credit in addition to SBC 308.
Prerequisite: POL 102
DEC: G
SBC: HFA+
3 credits

SUS 319: Restoration Ecology
A study of the rationale, principles, practices, and legal, social, economic, and ethical issues associated with restoring the structure and function of degraded ecological systems. Restoration ecology draws heavily from ecological theory, and the process of restoring a site can in fact provide unique experimental opportunities to test how well ecological theories predict the responses of natural systems. Important ecological concepts applied in restoration include disturbances, succession, fragmentation, system function, as well as, emerging areas such as assembly theory and alternative stable states. Formerly offered as EHI 310; not for credit in addition to EHI 310.
Prerequisite: BIO 201
DEC: G
SBC: HFA+, WRTD
3 credits

SUS 320: Utopia and Dystopia and the Environment in Literature and Culture
Examines 20th and 21st century Western cultural depictions of utopias and dystopias in literature (nonfiction, fiction). The course will consider literary representations of ideal or fallen societies, as well as 'real life' communities such as intentional, communal, co-operative 'utopic' models across the globe. Students will consider the 'sustainability' implications of living in 'utopic' and 'dystopic' communities. Students will write six short analytical essays about the course readings, give an oral and visual presentation on a real-life global utopic/dystopic community, and design their own model environmental utopic/dystopic community. Formerly offered as EHM 321; not for credit in addition to EHM 321.
Prerequisite: U3 or U4 standing
Advisory Prerequisite: One literature course at the 200 level or higher
DEC: G
SBC: HFA+
3 credits

SUS 321: Ecology and Evolution in American Literature
This course is a review of 19th- and 20th-century American writers who trace the evolution of the US with respect to ecological practices through various multicultural perspectives. Literature covered will include transcendentalist essays, utopian/dystopian novels, ecofeminist fiction, and journalism. This course is offered as both EGL 319 and SUS 321. Formerly offered as SBC 321; not for credit in addition to SBC 321.
Prerequisite: WRT 102
Advisory Prerequisite: SUS 203 (formerly SBC 203)
DEC: G
SBC: HFA+, WRTD
3 credits

SUS 322: Human Ecology
Human ecology investigates how humans and human societies interact with nature and with their environment. Course first introduces the concepts and methods of human ecology. Following this foundation, the course will give special emphasis to empirical examples, case studies and lessons from history. The course will focus on individuals, communities and traditional societies. Human Ecology compliments Human Geography, which studies patternning at the larger scale. Formerly offered as EHI 322; not for credit in addition to EHI 322.
Prerequisite: BIO 201
SBC: STEM+
DEC: G
SBC: HFA+, WRTD
3 credits

SUS 323: Environmental Justice
Explores the inequitable distribution of environmental risks, such as exposure to toxic chemicals and materials, versus environmental benefits such as access to environmental protections and natural resources. Most importantly, this course explores the essential question of 'why' there is such an inequity and, oftentimes, 'who' permits or allows disparate treatment. As Dr. Robert Bullard states, "who gets what, why, and how much?" Understanding the moral questions that underpin environmental justice requires exploration from the sociopolitical standpoint, but also through legal, economic, policy, and historical standpoints on a domestic,
international, and transnational scale. The course will include readings from sociology and political science texts and perspectives, as well as literary and film portrayals of environmental justice topics. Formerly offered as EHM 323; not for credit in addition to EHM 323.

Prerequisite: WRT 102
Advisory Prerequisite: SUS 203 (formerly SBC 203)
DEC: E
SBC: STEM+
3 credits

SUS 327: Human Reproductive Ecology
Course builds on behavioral ecology to focus on why humans make the reproductive choices they do and examines cross cultural and individual differences in fertility, mortality and population growth. Course is organized around current debates in physiological, behavioral, and social aspects of human reproduction. A background in reproductive ecology allows students to think empirically about the demographic component of human environment interactions, and to better model sustainable futures. Formerly offered as EHI 321; not for credit in addition to EHI 321.

Prerequisite: BIO 201
DEC: H
SBC: CER, STAS, WRTD
3 credits

SUS 328: Ecofeminism, Literature & Film
Ecofeminism, Literature, and Film will examine the connections among ecology and feminism in literature, film, conservation and sustainability. Ecofeminism is a complex ecocritical and philosophical approach to reading literature, film, and culture; it asks that we rethink our relationship to the earth and our responsibilities as human beings to all living creatures and to people of all races, cultures, and genders. In this course, students will study ecofeminist concepts in poetry, nonfiction essays, fiction, and films, and they will examine the work of prominent women ecologists, conservationists, and environmentalists. Formerly offered as EHI 322; not for credit in addition to EHI 322.

Prerequisite: WRT 102
Advisory Prerequisite: SUS 203 (formerly SBC 203)
DEC: G
SBC: HFA+, WRTD
3 credits

SUS 329: Environmental Film, Media, Arts
This course is designed to develop visual communication skills and strategies to inspire environmental awareness and advocacy. The course extends beyond two-dimensional graphic design to include critical approaches to the practice of environmental design, film and visual art. With a focus on strategic messaging and technical skills, students will learn design principles, image making and filmmaking to bridge environmental issues through diverse media texts. Students will pick one topic, which will be used throughout the course as a primary theme and applied to various media and art projects. Each media project will use the tools of visual communication to engage the public and foster positive environmental, social, political, and ethical change. Formerly offered as EHM 325; not for credit in addition to EHM 325.

Prerequisite: SUS 111 (formerly SBC 111) or ENS 101; U3 or U4 status
Advisory Prerequisite: SUS 203 (formerly SBC 203)
SBC: HFA+
3 credits

SUS 330: Extreme Events in Literature
A course that examines the depiction of extreme events (both natural and human-related) in literature, journalism, art, and film, with special emphasis paid to the extended political and social issues that are raised by the events in question. Formerly offered as SBC 330; not for credit in addition to SBC 330.

Prerequisite: WRT 102
Advisory Prerequisite: SUS 203 (formerly SBC 203)
DEC: G
SBC: HFA+, WRTD
3 credits

SUS 331: Precolumbian Urbanism
An examination of the development of Precolumbian cities throughout the Americas. Specific attention will be paid to the interaction of urban development and environment, as well as the ways in which culture and cosmology impact architectural design. In depth consideration will be given to urban architecture of specific cultural groups in North, Central, and South America. Formerly offered as EHM 331; not for credit in addition to EHM 331.

Prerequisite: U3/U4 standing
DEC: J
SBC: GLO
3 credits

SUS 332: Conservation Genetics
This course is an introduction to genetics taught in the context of conservation. The course will cover a basic introduction to Mendelian, molecular, population, evolutionary and meta-population genetics, and then examine specific applications of these concepts to topics in conservation biology. Formerly offered as EHI 326; not for credit in addition to EHI 326.

Prerequisite: BIO 201
DEC: E
SBC: STEM+
3 credits

SUS 333: The Household in Non-Western Society
This course offers a survey of vernacular architecture in Non-Western societies worldwide. Students examine the design and meaning of vernacular architecture in a variety of cultures, exploring the ways in which construction practices and architectural
design are shaped by cultural requirements and social mores. Special attention will be given to the future of vernacular architecture, and the ways in which housing may be designed to be both sustainable and culturally appropriate. Formerly offered as EHM 330; not for credit in addition to EHM 330.

Prerequisite: U3 or U4 standing
Advisory Prerequisite: ANT 102, ANT 104, or ARH 205
DEC: J
3 credits

SUS 340: Ecological and Social Dimensions of Disease
The ecology and evolutionary biology of disease will be examined to provide a more general context for human diseases. Pathogens may have large effects on many different types of organisms, from bacteria to plants to humans. We will build on this biological background to examine the social dimensions of disease in human populations and societies, including historical, political and economic aspects to issues of money, power, sexuality, international development and globalization. Specific case studies (the chestnut blight in North America, AIDS in Africa, etc.) will be used to examine concepts and principles in detail in a real-world context. This course will investigate basic fundamentals and recent research on these issues in a unified framework. Formerly offered as EHI 340; not for credit in addition to EHI 340.

Prerequisite: BIO 201
DEC: H
SBC: STAS
3 credits

SUS 341: Environmental Treaties and Protocols
A multi-disciplinary study of the scientific basis, objective, development, implementation, and intended and unintended consequences of a single major Environmental Treatise or Protocol, such as the Kyoto Protocol. Official documents, secondary literature, as well as commentary on the Treatise or Protocol are studied.

Prerequisite: SUS 111 (formerly SBC 111), or ENS 101, or GEO 101; U3 or U4 standing
DEC: H
SBC: STAS
3 credits

SUS 342: Energy and Mineral Resources
This class will explore the origin, distribution, and importance of energy and mineral resources to modern civilization, with an emphasis on fossil fuels and non-renewable mineral resources extracted from Earth. Geological processes responsible for the formation and distribution of energy and mineral resources, as well as current and future supply and demand are discussed. The environmental implications of the extraction and use of energy and mineral resources as well as techniques to minimize the impact on the environment will be discussed.

Prerequisite: one D.E.C. E or SNW course
DEC: H
SBC: STAS
3 credits

SUS 343: Age of the Anthropocene
Provides a deeper understanding of the ways in which humans have interacted with and transformed the planet during recent geologic time, including the Holocene, Industrial Revolution, and into the present. We consider Earth as a global ecosystem, characterized by interacting and dynamic systems, including natural and anthropogenic. This course critically examines the current interpretations and applications of the term Anthropocene, and identifies the key tenants and societal outcomes of this powerful, and sometimes conflicting, idea as applied today in science, sustainability, and beyond.

Prerequisite: one of the following courses: SUS 111 (formerly SBC 111), SUS 113 (formerly SBC 113), ENS 101, GEO 101, GEO 102, ENV 115, CHE 131
DEC: H
SBC: STAS
3 credits

SUS 344: Sustainable Natural Resources
This course explores in depth the economic viability, social acceptance, and potential of sustainable natural resources to replace non-renewable resources. Examples are drawn from water resource management, agriculture, forestry, fisheries, and renewable energy resources (wind, solar, biofuel, etc.). There is particular emphasis on examples of integrated, participatory and sustainable natural resources management project in less developed countries. Formerly offered as EHI 343; not for credit in addition to EHI 344.

Prerequisite: SUS 111 (formerly SBC 111) or ENS 101; ENV 115 or CHE 131; BIO 201
DEC: H
SBC: STAS
3 credits

SUS 350: Contemporary Topics in Sustainability
This course deals with the meaning and the application of the idea of sustainability.
First, the mathematics of exponential and linear growth, and the concept of stability in complex systems will be developed. The idea of stable equilibrium and the long-term/short term distinction will also be discussed. Then, various subjects of sustainability—populations, species, habitats, ecosystems, resources, cultures, modes of production, economic systems, and political systems will be considered. Various purposes of sustainability for its own sake, for human welfare, for the welfare of nature will also be discussed. May be repeated as the topic changes.

Prerequisite: SUS 111 (formerly SBC 111); U3/U4 status
3 credits

SUS 351: Design and Implement a Research Project in Ecotoxicology
Research, design and implement a unique project in ecotoxicology. Course covers literature reviews, hypothesis formation, initial implementation of a research project, and some write-up. Projects vary by year but may involve ecotoxins such as acid rain, heavy metals, pesticides, plastics or herbicides and organisms such as soil microbes or earthworms. Students are encouraged but not required to enroll in SUS 352, offered in the spring, to complete and communicate their project. Course may be repeated once with director's approval. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information. Formerly offered as EHI 350; not for credit in addition to EHI 350.

Prerequisite: C or better in one of the following: BIO 201, BIO 202, BIO 203, CHE 115, CHE 123, CHE 129, CHE 131, CHE 141, CHE 152, PHY 121, PHY 125, ENV 115
SBC: EXP+, STEM+
3 credits

SUS 352: Conduct and Communicate a Research Project in Ecotoxicology
Conduct and communicate a student-designed project in ecotoxicology. Course covers data collection, data analysis and write up. Students will communicate their research at an appropriate venue such as URECA. Projects vary by year and will involve ecotoxins such as acid rain, heavy metals, pesticides, plastics or herbicides and organisms such as soil microbes or earthworms. Course builds on a project initiated in SUS 351, but SUS 351 is not a prerequisite. Course may be repeated once with the director's approval. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.
SUS 354: Drawing for Design--CAD
Techniques and Theory of Drawing; Architectural Drawing; Learning Computer Assisted Design (CAD). This course will serve as an introduction to CAD tools relevant to design and architectural rendering. Formerly offered as SBC 354; not for credit in addition to SBC 354.
Prerequisite: SUS 117 (formerly SBC 117)
SBC: STEM+ 3 credits

SUS 356: Philosophy of the Environment (III)
Philosophical questions raised by human relations with the natural world, ranging from basic concepts such as nature, ecology, the earth, and wilderness, to the ethical, economic, political, and religious dimensions of current environmental problems, including the question of whether there are values inherent in nature itself beyond those determined by human interests alone. This course is offered as both PHI 366 and SUS 366.
Prerequisite: PHI 104 or PHI 105
DEC: G
SBC: CER, HFA+ 3 credits

SUS 374: Environment and Development in African History
Provides a critical exploration of the history and political-economic of environmental changes and human activities in Africa from earlier times to the present. It examines the ways in which the dynamics of human-environment relationship have shaped the development of African societies and economies from the rise of ancient civilizations to the contemporary problems of war and famine. Although significant attention will be given to the pre-colonial era (like the impacts of iron-working, irrigation, deforestation and desertification), the focus of the course will be on the 20th and century and after, looking at the impacts of imperialism, colonialism, globalization and the postcolonial quest for development on the state of the environment in Africa. In the discussion, we will demonstrate that the shaping of African environments and ecologies is a product of complex, evolving and interconnected developments between humans and nature within and beyond the African continent. Offered as both AFS 374 and SUS 374. Not for credit in addition to SBC 320 or SBC 374.
Prerequisite: U3 or U4 status
DEC: J
SBC: GLO, SBS+ 3 credits

SUS 386: The Maya
For many, the word ‘Maya’ evokes images of a long dead culture and ruined pyramids. This course uses that familiarity as a starting point and follows the history of the Maya from ancient times to the present. We begin with an overview of what scholars know about the ancient Maya before tracing their experiences since the Spanish conquest, placing emphasis on Spanish colonization in the lowland areas of Mesoamerica, Mexico’s War of the Castas, and the diverse experiences of the modern Maya, including the Guatemalan Civil War and the Chiapas uprising, the impact of foreign tourism, and the experience of transnational migration. Special attention will be paid to the ways in which environmental and agrarian issues have impacted this diverse group of peoples. Offered as both HIS 386 and SUS 386. Formerly offered as EHM 386; not for credit in addition to EHM 386.
Advisory prerequisite: HIS 212
DEC: J
SBC: SBS+ 3 credits

SUS 390: Humanity’s Quest for Food Security: The Last 10,000 Years in the Turkana Basin
Explores human innovation in maintaining food security by examining the record of the Turkana Basin through the last 10,000 years of environmental change. Students will evaluate the sustainability of fishing-gathering-hunting strategies and consider mechanisms for the spread of herding into the Turkana Basin 4000 years ago as climate conditions became more arid. They will examine the development of diverse, complementary economic systems within the Turkana Basin from 3000 years ago to the present, and consider environmental and social impediments to farming in this area. Formerly offered as EHM 390; not for credit in addition to EHM 390.
Prerequisite: Permission of the instructor/Study Abroad office
DEC: E
SBC: SBS 3 credits

SUS 391: Nature & Nurture for Sustainable Health: Humans, Livestock & Vectors in the Turkana Basin
The Turkana Basin offers unique opportunities to explore questions related to health, environment, gender, changing livelihoods and vector biology. The added nexus of ongoing climate change, environmental degradation and shifting demographics have complex, intertwined influences on humans and livestock. Through hands-on activities, students will probe issues related to biology and public health. Students will learn basic biology, including life cycles and evolutionary history of disease vectors and their impact on humans and livestock. They will also gain experience in designing, conducting, presenting and evaluating studies concerning current applied questions in the Turkana region, eastern Africa and the broader developing world. Formerly offered as EHM 391; not for credit in addition to EHM 391.
Prerequisite: Permission of the instructor/Study Abroad office
DEC: F
SBC: SBS 3 credits

SUS 392: Water Security and Sustainable Development in the Turkana Basin
Lake Turkana, the world’s largest desert lake, is now the focus of numerous development projects that have serious environmental, social, and political impacts. These include multiple dams and plantations in Ethiopia on the Omo River, which furnishes 90% of Lake Turkana’s water; the discovery of oil and a nearby large aquifer; and various other development initiatives. This course
uses TBIs unique geographic and strategic position to examine some of the contemporary and conceptual issues relating to disputes over trans-boundary water resources, such as hydropolitics, processes of securitization and de-securitization, hydro-hegemony and patterns of conflict and cooperation. Formerly offered as EHM 392; not for credit in addition to EHM 392.

Prerequisite: Permission of the instructor/Study Abroad office
SBC: SBS+
3 credits

SUS 401: Integrative, Collaborative Systems Studies
Problem-based capstone course. Formerly offered as SBC 401; not for credit in addition to SBC 401.
Prerequisite: U3 or U4 status; major in COS, EHI, EHM, or SUS, or permission of the department
SBC: ESI
3 credits

SUS 405: Environmental Sustainability in Tanzania
Focus on environmental issues in Tanzania as a sample of the developing world, with emphasis on present condition and future prospects. We examine how climate, technology development, and agriculture affect the environment. Also, impacts of environmental degradation and national policies (including the United Nations Sustainable Development Goals) on poverty reduction, natural resources, health and economic growth are discussed.
Prerequisite: one of the following: SUS 111 (formerly SBC 111), ENS 101, GEO 101
SBC: EXP+, GLO
3 credits

SUS 444: Experiential Learning
This course is designed for students who engage in a substantial, structured experiential learning activity in conjunction with another class. Experiential learning occurs when knowledge acquired through formal learning and past experience are applied to a “real-world” setting or problem to create new knowledge through a process of reflection, critical analysis, feedback and synthesis. Beyond-the-classroom experiences that support experiential learning may include: service learning, mentored research, field work, or an internship.
Prerequisite: WRT 102 or equivalent; permission of the instructor and approval of the EXP+ contract (http://sb.cc.stonybrook.edu/bulletin/current/policiesandregulations/degree_requirements/EXPplus.php)
SBC: EXP+
0 credit, S/U grading

SUS 459: Write Effectively in Sustainability
A zero-credit course that is taken in association with a 300- or 400-level course approved by the major. SUS 459 provides opportunity to practice the skills and techniques of effective academic writing and satisfies the learning outcomes of the Stony Brook Curriculum’s WRTD learning objective.
Prerequisite: WRT 102; permission of the instructor
SBC: WRTD
0 credit, S/U grading

SUS 475: Undergraduate Teaching Practicum
Work with a faculty member as assistant in a regularly scheduled course. The student must attend all classes and carry out all assignments; in addition the student will be assigned a specific role to assist in teaching the course. The student will meet with the instructor on a regular basis to discuss intellectual and pedagogical matters relating to the course.
Prerequisites: Permission of instructor and undergraduate director
SBC: ESI, EXP+
3 credits, S/U grading

SUS 476: Undergraduate Teaching Practicum II
Work with a faculty member as assistant in one of the faculty member's regularly scheduled courses. Students assume greater responsibility in such areas as leading discussions and analyzing results of tests that have already been graded. Students may not serve as teaching assistants in the same course twice.
Prerequisites: Permission of instructor and undergraduate director
SBC: EXP+
3 credits, S/U grading

SUS 487: Research in Sustainability Studies
Qualified advanced undergraduates may carry out individual research projects under the direct supervision of a faculty member. May be repeated.
Prerequisite: Permission of instructor
SBC: EXP+
1-6 credits, S/U grading

SUS 487: Research in Environmental Humanities
Qualified advanced undergraduates may carry out individual research projects under the direct supervision of a faculty member. May be repeated.
Prerequisite: Permission of instructor
SBC: EXP+
1-6 credits, S/U grading

SUS 488: Internship in Sustainability
Participation in local, state, and national public and private agencies and organizations. May be repeated to a limit of 12 credits.
Prerequisites: U3/U4 status and permission of the SoMAS Undergraduate Program Director
SBC: EXP+
0-12 credits, S/U grading

SBC