Environmental Design, Policy, and Planning (EDP)

Major and Minor in Environmental Design, Policy, and Planning

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Environmental Design, Policy, and Planning (EDP)

The Environmental Design, Policy, and Planning major, leading to a Bachelor of Arts degree, provides the skills, knowledge, and preparation for students to understand and address complex issues related to development, land-use, urbanization, and suburban sprawl. The curriculum integrates principles and methodologies from social sciences, natural sciences, and humanities. The goal is to address the complex scientific, legal, ethical, political, environmental, and socio-economic issues that surround the development, management, and use of the built environment.

The B.A. degree prepares students for entry-level employment in the public, private, or non-profit sectors in a variety of fields including urban and regional planning, community planning, environmental consulting, land and real estate development, and public administration. The major prepares students for graduate study in environmental design, planning, architecture, 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. A design project is an essential part of the curriculum to provide real-world experience. Internships and independent research courses provide additional real-world experiences. Seniors are required to present their Design Project at an Annual Gathering of Researchers and Scholars.

Requirements for the Major and Minor in Environmental Design, Policy, and Planning (EDP)

Requirements for the Major in Environmental Design, Policy, and Planning (EDP)

A. Required Foundation Courses for Major (35 credits)

- MAT 131 or MAT 125 Calculus or AMS 151. If students do not place into MAT 125 or 131 or AMS 151 on the basis of the math placement examination, MAT 123 is a required course for the major.
- ECO 108 Introduction to Economics
- SUS 111 Introduction to Sustainability (formerly offered as SBC 111) or ENS 101 Prospects for Planet Earth
- SUS 115 Introduction to Human Demography (formerly offered as SBC 115)
- CHE/ENV 115 Chemistry, Life, Environment (Note: CHE 115, 129, 131, or 152 may be substituted for CHE/ENV 115)
- SUS 113 and SUS 114 Physical Geography and Physical Geography Lab (formerly offered as SBC 113 and SBC 114) or GEO 102 The Earth
- GSS 105 Introduction to Maps and Mapping
- AMS 102 Elements of Statistics
- SUS 201 Systems and Models (formerly offered as SBC 201)
- POL 102 Introduction to American Government
- SUS 206 Economics and Sustainability (formerly offered as SBC 206)

B. Core Courses (30-31 credits)

- SUS 301 Technical Writing and Communication (formerly offered as CSK 302)
- GSS 313 GIS Applications and Design (or GSS 317 Geospatial Narratives)
- GSS 314 GIS Laboratory (only if taking GSS 313)
- GSS 325 GIS Design and Applications II
- EDP 301 Urban Systems
- EDP 302 Sustainable Planning and Development
- EDP 303 Spatial Economics
- EDP 307 Site Planning and Design
- EDP 404 Environmental Design Project (see notes)
- ENS 333 Environmental Law
- SUS 200 Human Settlements: History and Future (formerly offered as SBC 200)

C. Elective (3 credits)

Choose one of the following courses:

- AFS 374/SBC 374 Environment and Development in African History
- EDP 305 Risk Assessment and Sustainable Development
- EDP 487 Research in Environmental Design, Planning, and Policy (with permission)
- EDP 488 Internship in Environmental Design, Planning, and Policy (with permission)
- ENV 316 Coastal Zone Management
- SUS 309 Global Environmental Politics (formerly offered as SBC 309)
- SUS 310 Migration, Development and Population Redistribution (formerly offered as SBC 310)
ENVIRONMENTAL DESIGN, POLICY, AND PLANNING (EDP)

- 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 American Environmental History (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 Lit (formerly offered as SBC 321)
- SUS 322 Human Ecology (formerly offered as EHI 322)
- SUS 328 Ecofeminism, Literature & Film (formerly offered as EHM 322)
- SUS 329 Environmental Film, Media, Arts (formerly offered as EHM 325)
- SUS 330 Demographic Change and Sustainability
- SUS 325 Environmental Writing and the Media (formerly offered as SBC 325)
- SUS 350 Topics in Sustainability
- SUS 366 Philosophy of the Environment

D. Communications and Writing requirement

Proficiency in writing, oral communication, and computer literacy will be encouraged in all students. In addition to SUS 301, these skills will be developed within the context of other formal coursework and no additional credits are required. To meet the upper-division writing requirement, students must submit two papers with letter grades of no lower than a B from any 300-level or 400-level course in the major to the director of the EDP Undergraduate Program. 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.

Notes:
1. Internship with significant practical experience in planning and/or environmental design may be substituted for EDP 404 with permission of Undergraduate EDP Program Director.
2. 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 SUS 301 Technical Writing and Communication, no more than 6 credits of 300-400 level course credits can be applied to two majors within Sustainability Studies or the School of Marine and Atmospheric Sciences.

Minor in Environmental Design, Policy, and Planning (EDP)

The Environmental Design, Policy, and Planning minor is intended for students who seek to complement their chosen major with a foundation in complex scientific, legal, ethical, political, environmental, and socio-economic issues that surround the development, management, and use of the built environment.

Declaration of the Minor

Students should declare the Environmental Design, Policy, and Planning 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 Environmental Design, Policy, and Planning (EDP)

At least 12 credits applied to the minor may not be applied to any major or other minor within the Sustainability Studies Program or 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 21-22 credits.

A. Required courses (18 credits):

- EDP 301 Urban Systems
- EDP 302 Sustainable Planning and Development
- GSS 105 Introduction to Maps and Mapping
- SUS 111 Introduction to Sustainability Studies (formerly offered as SBC 111) or ENS 101 Prospects for Planet Earth
- SUS 200 Human Settlements: History and Future (formerly offered as SBC 200)
- SUS 206 Economics and Sustainability (formerly offered as SBC 206)
B. Electives (3-4 credits):

Choose one of the following courses:

- EDP 303 Spatial Economics
- EDP 307 Theories and Design of Urban Settlements
- SUS 317 American Environmental History (formerly offered as SBC 307)
- SUS 318 American Environmental Politics (formerly offered as SBC 308)
- SUS 309 Global Environmental Politics (formerly offered as SBC 309)

Sample Course Sequence for the Major in Environmental Design, Policy, and Planning

A course planning guide for this major may be found here. The major course planning guides are not part of
the official Undergraduate Bulletin, and are only updated periodically for use as an advising tool. The Undergraduate
Bulletin supersedes any errors or omissions in the major course planning guides.

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EDP

Environmental Design, Policy, and Planning

EDP 301: The Built Environment I
The functional determinants of an urban region's physical infrastructure, encompassing cities, suburbs, exurbs and satellite communities are presented. The course will cover metropolitan infrastructure components including systems of transportation, water supply, waste disposal and energy distribution and how they are shaped by the interaction of economics, politics and planning practice.
Prerequisite: SUS 200 (formerly SBC 200)
SBC: SBS+
3 credits

EDP 302: The Built Environment II
The functional dynamics underlying the development and planning for structures and facilities in urban regions are presented including their cities, suburbs, exurbs and recreational satellite communities. The course will cover the interaction of real estate economics, politics and good planning practices as they affect residential, commercial, educational, cultural and industrial sites.
Prerequisite: SUS 111 (formerly SBC 111) and SUS 200 (formerly SBC 200)
SBC: SBS+
3 credits

EDP 303: Spatial Economics
Economic theories and empirical data that explain the distribution of man-made activities in geographic regions are presented. The course covers the spatial and demographic factors governing the distribution, within natural regional conurbations, of residences, industries and all other activities whose location is economically determined.
Prerequisite: SUS 206 (formerly SBC 206)
3 credits

EDP 305: Risk Assessment and Sustainable Development
Course presents a comprehensive overview of risk analysis and its application to a broad range of human activities. The methodology of risk analysis enables those involved in environmental sustainability to evaluate the probability of an adverse effect of an agent, chemical, industrial process, or natural process.
Prerequisite: ENV 115
3 credits

EDP 307: Theories and Design of Urban Settlements
The course introduces students to the underlying economic, social and physical forces that shape the development of human settlements, with an emphasis on urban conurbations, and the typical United States metropolitan region.
Prerequisite: SUS 111 (formerly SBC 111) and SUS 200 (formerly SBC 200)
SBC: SBS+
3 credits

EDP 309: Planning: Policies and Regulations
An introduction to the process of planning and development of regulations necessary for the implementation of planning objectives.
Prerequisite: SUS 200 (formerly SBC 200)
SBC: SBS+
3 credits

EDP 404: Environmental Design Project
The Environmental Design Project is the culmination of the EDP Major. Each student should produce an individual work, that is a thoughtful analysis of a real-world problem addressing one of four central themes of the major's core: 1) historic and theoretical perspectives; 2) the physical and built environment; 3) policy, politics and regulation; or 4) societal and cultural change. Allowing that there may be some overlap among these four themes, each project must focus on a specific place, process or object. Students are expected to produce a final project portfolio--which may include audio-visual materials, drawings, models, posters, artifacts, etc.--and a written report. Each student is expected to make a presentation to faculty and students before the close of the semester.
Prerequisites: EDP 301 and EDP 302 and EDP 307 and CSK 102
SBC: EXP+
3 credits

EDP 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

EDP 487: Research in Environmental Design, Policy, & Planning
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

EDP 488: Internship in Environmental Design, Policy, & Planning
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 Undergraduate Program Director
SBC: EXP+
0-12 credits, S/U grading

SBC

Sustainability Block Curriculum

SBC 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: U3/U4 status and permission of the Undergraduate Program Director
SBC: EXP+
0-12 credits, S/U grading
GSS

Geospatial Science

GSS 105: Introduction to Maps and Mapping
An introduction to the study and design of map formats, symbology, coordinate systems, and how maps record the historical patterns of human behavior. The course will also examine maps as a tool to analyze human activity and societal development, and include important aspects of map data collection, processing, the Global Positioning System (GPS), quantitative mapping, and GIS-based mapmaking techniques.

DEC: F
SBC: SBS
3 credits

GSS 309: GIS and Cartography
Cartography is the knowledge associated with the art, science, and technology of maps. Digital computer cartography still follows the same fundamental principles and still requires a broad understanding of graphacy as a language (as well as numeracy and literacy). This course will provide an introduction to cartographic principles, concepts, software and hardware necessary to produce good maps, especially in the context (and limitations) of geographic information systems (GIS).

Prerequisite: GEO 102 or GSS 105 or MAR 104 or SBC 113 or instructor consent
3 credits

GSS 313: GIS Design and Application I
Provides the basic concepts underlying modern geographic information science and technology. Emphasis is placed on the principles of GIS for characterizing environmental systems and computer-based techniques for processing and analyzing spatial data. The course is three credit hours of lecture. This lecture course must be taken in the same semester as the associated laboratory, GSS 314. Not for credit in addition to GSS 317.

Prerequisite: MAT 125 or MAT 131 or AMS 151 or instructor consent
Corequisite: GSS 314
SBC: TECH
3 credits

GSS 314: GIS Laboratory
Practice using the GIS techniques and tools learned in the lecture (GSS 313), work on exercises, and process and analyze the spatial data for the course project. This laboratory course must be taken in the same semester as GSS 313.

Corequisite: GSS 313
1 credit

GSS 317: Geospatial Narratives: Deep Mapping for Humanities and Social Sciences
Building on formal methods in qualitative reasoning, spatial and temporal representation and geospatial science, this course will explore state-of-the-art methods for humanities and social sciences students to visualize and drill down data. Hands-on exercises of deep mapping will cover how to collect, analyze and visualize quantitative and qualitative data, spatial data, images, video, audio, and other representations of places and artifacts in humanities and social sciences. This course will also discuss models of reasoning about events, actions and changes that are spatially contextualized. Not for credit in addition to GSS 313.

Prerequisite: WRT 102
Advisory Prerequisite: some working knowledge of spreadsheets
SBC: TECH
3 credits

GSS 323: GIS Database and Design
Concepts of geodatabase design and management in geographic information systems (GIS), SQL statements, geographic data types and functions, data entry, techniques of geographic information structure applications. This is a Windows based computer class with the majority of students work involving GIS computer software.

Prerequisite: GSS 313 or GSS 317 or equivalent
3 credits

GSS 325: GIS Design & Applications II
The course builds upon the topics covered in GIS Design and Application I. It emphasizes the applications of GIS in solving real-world problems. Students are expected to gain an understanding of GIS theory, methodology and most importantly application. Students are also expected to demonstrate abilities of spatial thinking, spatial analysis, and be able to solve practical spatial problems utilizing a GIS. Because GIS is both a tool for analysis and the visual communication of these data, students will be required to develop a GIS presentation, much as would be expected in a professional setting. This independent project will constitute a substantial portion of the final grade. This is a Windows based computer class with the majority of students work involving GIS computer software.

Prerequisite: GSS 313 or GSS 317 or equivalent
3 credits

GSS 326: GIS Project Management
The course addresses issues unique to a GIS operation such as implementation issues, decision making procedures, strategies for success, legal issues, involvement of management, marking within an organization, strategic planning, and industry outlook.

Prerequisite: GSS 313 or GSS 317 or equivalent
3 credits

GSS 350: Applied Spatial Data Analysis
An introduction to geospatial statistical analysis that aims to provide students with the background necessary to investigate geographically represented data. The specific focus is on spatial data analysis, such as the analysis of autocorrelation, principles of geostatistics and analysis methods that are relevant in the fields of public health, environmental/earth science and social science. An important aspect of the course is to gain hands-on experience in applying these techniques with GIS and spatial analytical software, and essential methodological and practical issues that are involved in sophisticated spatial analyses.

Prerequisite: AMS 102 or equivalent and GSS 313 or GSS 317 or equivalent
SBC: STEM+
3 credits

GSS 354: Geospatial Science for the Coastal Zone
The use of spatial data is becoming increasingly critical in the decision management process and planning of the coastal zone. This course will use GIS and Remote sensing tools to collect and analyze data for integrating into the management, planning, and monitoring of the coastal geomorphology and ecosystems.

Prerequisite: GSS 313 or GSS 317 or equivalent
3 credits

GSS 355: Remote Sensing GIS Data
Provides a basic overview of the technology by which aircraft and satellite images of the Earth are produced as well as hands on experience manipulating and interpreting. Students gain practical experience in environmental analysis using satellite imagery and commonly used sensors and analytical methods for the Earth sciences.

Prerequisite: GSS 105 or MAR 104 or GEO 102

SBC: STEM+

3 credits

GSS 390: Topics in Geospatial Science
Course will present special interest topics or recent software enhancements in the rapidly developing field of Geospatial Science. The course will include a mixture of core geospatial techniques and recently released methodology. Course content will include a diversity of Geospatial topics and include discipline specific topics relevant to majors in physical sciences, social sciences, business and engineering. Repeatable as the topic changes to a maximum of 6 credits.

Prerequisite: U3 or U4 status or permission of the instructor

3 credits

GSS 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: EXP+

3 credits, S/U grading

GSS 487: Geospatial Science Research
Qualified advanced undergraduates may carry out individual research projects under the direct supervision of a faculty member. Repeatable to a maximum of 3 credits.

Prerequisite: Permission of instructor

0-3 credits, S/U grading

GSS 488: Geospatial Science Internship
The GSS Internship is designed to provide students experience in the real workplace. Interns are expected to function as a GIS/Remote Sensing professional and work within the existing host facility structure or on a free standing project. Interns will complete assigned tasks by hosting facility such as GIS data entry, data retrieval, remote sensing analysis, GPS field work, documentation, or general GIS facility duties. These activities will be monitored by both a representative of the host facility and the instructor. May be repeated to a limit of 12 credits.

Prerequisites: GSS 325; GSS 313 or GSS 317, or instructor consent

SBC: EXP+

0-12 credits, S/U grading