Explore Majors that Preserve our Planet
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21st Century Challenge
“Climate Change is the defining issue of our time and we are at a defining moment.”

Source: United Nations
Environmental Issues and Threats

- Pollution
- Deforestation
- Water scarcity
- Loss of biodiversity
- Soil erosion and degradation

*Source: Inhabitat, April 2018*
Solutions
Sustainability

Long-lasting health, integrity, diversity, and vitality for all living systems - including individual, community, ecosystem, and biome.

Adapted from Stony Brook University website
Sustainability is Multidisciplinary

It is a wide field that is rapidly changing as it grows.
“Our students, who are highly committed to sustainability, want and expect us to lead . . . and SUNY, as an engine of innovation, has a major responsibility to lead.”

Kristina M. Johnson, SUNY Chancellor
A new student-led campus composting effort in conjunction with the Office of Sustainability at SUNY Geneseo collects more than 1,000 pounds of compostable material from offices and residence halls every month.

Suffolk County Community College was recognized for its sustainability and environmental conservation work at the New York State Department of Environmental Conservation’s 15th Annual New York State Environmental Excellence Awards Celebration for its focus and efforts on energy conservation, sustainable transportation, curriculum in sustainability, and waste reduction initiatives.

As part of the NY state’s Clean Climate Careers imitative, Maritime College received $460,000 to promote clean energy workforce development and training programs: $230,000 to support the creation of an Off-Shore Energy Center and another $230,000 to support the establishment of a Liquefied Natural Gas Center of Excellence.

SUNY Potsdam’s Wagner Institute for Sustainability and Ecological Research installed aeroponic tower gardens in its greenhouse and across campus to grow fresh vegetables, greens, and herbs for campus dining year-round.
**University at Albany** broke ground on its Emerging Technology and Entrepreneurship Complex (ETEC), a state-of-the-art technology, entrepreneurship, business, and academic facility that is expected to achieve LEED Platinum certification for its environmental features.

**SUNY Canton**’s bachelor’s degrees in Sustainable Energy Technology and Civil Environmental Engineering Technology prepares students to help reduce fossil fuel consumption: prevent air, water, and soil contamination: and adhere to environmental regulations.

**SUNY Delhi** students designed and are building tiny homes to serve the needs of community members, providing temporary shelter next to support services facilities, while other students worked on a joint project with the Delaware County Electric Cooperative to assess methods of managing power line right-of-way for safety while avoiding the use of herbicides and supporting biodiversity.

**Westchester Community College**’s Native Plant Center, the first national affiliate of the Lady Bird Johnson Wildflower Center in Austin, Texas, celebrated its 20th anniversary with a event.
SUNY-ESF's B.S. in Sustainable Energy Management is structured to introduce students to a wide range of energy markets and resources (fossil fuels, electricity, renewable and sustainable energy resources) while maintaining substantial flexibility for student-centered learning in understanding and managing energy systems. This program develops professional skills that employers tell us are the most important traits they look for in new employees. These traits are developed through a broad base of classes in the natural sciences, social sciences and humanities, communication, and quantitative and qualitative problem-solving and critical thinking skills.
The Renewable Materials Science B.S. program at SUNY-ESF educates students in the science of materials and products made from renewable resources. The program provides an in-depth knowledge of materials such as wood, paper, modern packaging materials, natural fiber materials and advanced materials emphasizing sustainability, environmental consciousness and minimizing environmental footprint. Students can explore a variety of careers in modern packaging, natural products and renewable materials industries, focused on technical, scientific and managerial tracks.
SUNY Morrisville students are learning by doing in the Renewable Energy Technology A.A.S. program, as they experience their first real-world work setting, gaining experience on the use of farm-scale anaerobic digester, biomass gasification cogeneration systems (for electricity and heat), wind turbines, solar PV, solar thermal, micro hydroelectric, and biodiesel operations to size, design, install, and troubleshoot home-based renewable energy systems. Graduates are prepared to enter the field in installation, operations, and maintenance of renewable energy systems, or continue their studies with a seamless transfer into Morrisville’s Renewable Energy B. Tech. program.
SUNY Morrisville’s A.A.S. in Horticulture and B. Tech in Horticulture Business Management provides students the opportunity to cultivate their future and love for growing and working with plants, whether in a greenhouse, a flower shop or on a farm. Students have the option to focus on a variety of areas, including landscape development and greenhouse production, in state of the art facilities that emphasizes technologies and innovation. SUNY Morrisville is excited to be at the forefront of educating students on the cannabis industry, one of the fastest-growing sectors of the horticulture/agriculture industry in New York State and nationwide. After launching a special project learning opportunity during the Spring 2019 semester that explored the growing methods of cannabis, SUNY Morrisville will begin offering a Cannabis Industry minor in the 2019 fall semester.
The Future: Fastest Growing Green Jobs

- Urban Growers
- Water Quality Technicians
- Clean Car Engineers
- Recyclers
- Natural Scientists
- Green Builders

- Solar Cell Technicians
- Green Design Professionals
- Wave Energy Producers
- Wind Energy Workers
- Biofuel Jobs

Source: National Geographic, January 2019
SUNY Undergraduate Majors in the Field of Sustainability

- Green Building Technology
- Environmental Studies
- Forestry
- Natural Resources Conservation
- Renewable Energy
- Sustainable Farming

100+ Majors in Total!
Academic Preparation: Pathways

- Engineering 3 + 2 and 3 + 3
- Engineering Science 2 + 2 and Parallel
- Environmental Management 3 + 2
- Forest Technology 1 + 1
Academic Preparation: Transfer Paths

Discipline: Environmental Engineering

SUNY transfer paths outline the knowledge and skills that are essential for students to complete during their first two years of study for a major in a given discipline. The coursework described below will meet degree requirements at all SUNY campuses offering majors in the above discipline. If you complete this coursework successfully, you will be well-positioned to finish your degree with an additional two years of study at your SUNY transfer college.

Use this transfer path to discover both courses related to your major and general education requirements that will prepare you for transfer. Click on each course to view a course description. Then, to map your first two years of courses, visit Planning Your Coursework.

Lower-Division Major Requirements

The courses below are specifically related to your field of study and are part of the requirements for graduation in your major:

**Engineering Core Requirements:**
- Introduction to Engineering
- Calculus-based Physics I, Mechanics (with lab)
- Calculus I
- Calculus II
- Calculus III
- General Chemistry I (with lab)
- Differential Equations
- Computer Programming

**Specific Requirements for Environmental Engineering:**
- General Biology I (with lab)
- General Chemistry II (with lab)
- Statics
- Strength of Materials

**Campus Specific Requirements:**
The transfer path for engineering includes up to three campus specific courses that you should complete prior to transferring to achieve junior status. Consult with your academic advisor and transfer campus for more information on completing these courses. A list of campus specific requirements can be found here, by campus and discipline.
Discipline: Environmental Science (Biophysical Track)

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- Introduction to Environmental Science (with lab)
- General Biology I (with lab)
- General Biology II (with lab)
- General Chemistry I (with lab)
- General Chemistry II (with lab)

Recommended Courses:
- Math course(s) leading to a math placement of ‘Ready for Calculus’
- Geographic Information Systems (GIS)
- Ecology (with lab)
- Organic Chemistry I (with lab)
- Organic Chemistry II (with lab)
- Statistics
- Calculus I
- Calculus II
- Calculus-based Physics I: Mechanics (with lab)
- Calculus-based Physics II: Electromagnetism (with lab)

Discipline: Environmental Science (Social Science Track)

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- General Biology I (with lab)
- General Biology II (with lab)
- General Chemistry I (with lab)
- Introduction to Economics
- Global Environment
- Cultural Ecology

Advising Notes

Unless otherwise noted, courses that include online labs are not currently guaranteed for transfer across all campuses. These courses and their online labs may be evaluated for transfer on a case-by-case basis by the receiving campus. Check with your advisor to see what restrictions and options may apply.

There may be additional courses in your major which would transfer, or courses which could be substituted for one of the above. These may be established on a case by case basis. Please see an advisor at your transfer campus to explore those options.
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suny.edu/majors
Explore Majors that Preserve our Planet

- Business and Environmental Sustainability
- Civil & Environmental Engineering Technology
- Coastal Environmental Studies
- Construction Technology: Sustainable Building (AAS)
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Online Options

Showing 5 Online Programs

- **Business and Environmental Sustainability**
  Empire State College
  Delivery Mode: 100% Online
  Degree Type: Certificate
  Credits: 16

- **Sustainability Management (Transfers Only)**
  College of Environmental Science and Forestry
  Delivery Mode: 100% Online
  Degree Type: Bachelor Of Science
  Credits: 120

- **Entrepreneurship**
  Hudson Valley Community College
  Delivery Mode: 100% Online
  Degree Type: Associate Of Applied Science
  Credits: 63

- **Green Building Maintenance and Management**
  Sullivan County Community College
  Delivery Mode: 100% Online
  Degree Type: Associate Of Applied Science
  Credits: 61

open.suny.edu
Academic Preparation: Desired Skills

• Analytical
• Communication
• Interpersonal
• Problem-Solving
• Research

Source: www.bestcolleges.com/careers/green-jobs
New York State and National Employment Prospects

Explore Majors that Preserve our Planet

Growth Rates

- Agricultural Engineers: U.S. Growth Rate 8.2%, NYS Growth Rate 4.0%
- Civil Engineers: U.S. Growth Rate 10.6%, NYS Growth Rate 7.0%
- Conservation Scientists: U.S. Growth Rate 3.3%, NYS Growth Rate 4.0%
- Environmental Engineering Technicians: U.S. Growth Rate 12.9%, NYS Growth Rate 9.0%
- Environmental Engineers: U.S. Growth Rate 8.3%, NYS Growth Rate 7.0%
- Environmental Scientists and Specialists, Including Health: U.S. Growth Rate 8.8%, NYS Growth Rate 5.7%
- Food Scientists and Technologists: U.S. Growth Rate 7.1%, NYS Growth Rate 1.0%
- Forest and Conservation Technicians: U.S. Growth Rate 7.0%, NYS Growth Rate 1.0%
- Hydrologists: U.S. Growth Rate 9.9%, NYS Growth Rate 7.0%
- Landscape Architects: U.S. Growth Rate 9.4%, NYS Growth Rate 6.4%
- Materials Scientists: U.S. Growth Rate 7.1%, NYS Growth Rate 5.0%
- Mechanical Engineering Technicians: U.S. Growth Rate 7.1%, NYS Growth Rate 3.0%
- Soil and Plant Scientists: U.S. Growth Rate 8.8%, NYS Growth Rate 4.0%
- Solar Photovoltaic Installers: U.S. Growth Rate 104.9%, NYS Growth Rate 96.3%
- Wind Turbine Service Technicians: U.S. Growth Rate 58.0%, NYS Growth Rate 100.0%

U.S. Growth Rate vs. NYS Growth Rate
New York State and National Employment Prospects

Median Salaries

- Agricultural Engineers
- Civil Engineers
- Conservation Scientists
- Environmental Engineering Technicians
- Environmental Engineers
- Environmental Scientists and Specialists, Including Health
- Food Scientists and Technologists
- Forest and Conservation Technicians
- Hydrologists
- Landscape Architects
- Materials Scientists
- Mechanical Engineering Technicians
- Soil and Plant Scientists
- Solar Photovoltaic Installers
- Wind Turbine Service Technicians

U.S. Median Salary
NYS Median Salary
Professional Resources for Sustainability Majors

International Society of Sustainability Professionals (ISSP)
Sustainability Management Association (SMA)
Association of Christian Sustainability Professionals (ACSP)
The National Association of Environmental Professionals (NAEP)
American Academy of Environmental Engineers and Scientists (AAEES)
Society for Conservation Biology (SCP)
Society of Women Environmental Professionals (SWEP)
Young Professionals for Agricultural Development (YPARD)
Green Business Network
Greenjobs
Questions?