2016 Report on Efforts by State Universities to Promote the Green Technology Industry

“The Board of Higher Education and the Illinois Community College Board shall annually publicize on their Internet websites information concerning efforts made by State universities and community colleges to promote the green technology industry, including the development of new academic degree and certificate programs, courses of instruction, and initiatives made by these State universities and community colleges to align green jobs programs with employer needs.” (Source: P.A. 97-241, eff. 8-4-11.)

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<td>Western Illinois University</td>
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# Degrees Offered and Centers Established by Illinois Public Universities that May Be Used to Promote the Green Technology Industry

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<tr>
<th>Institution Name</th>
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*Note: All Centers and degree programs are in active status as of June 2016 unless indicated otherwise.*
Chicago State University

Chicago State University Sustainability Initiatives

Global Institute of Sustainable Development

The Global Institute of Sustainable Development, Gisd, is an innovative approach to furthering the global citizenship mission of Chicago State University with particular interest in utilizing sustainability principles to stimulate university/community partnership for cross-cultural education, faculty-student interaction in research, service, and community development. More information can be found at: http://www.csu.edu/internationalstudies/globalinstitute/

Calumet Environmental Resource Center

The Calumet Environmental Resource Center (CERC) is a unique resource library, meeting place and referral network where local community residents, government officials, nonprofit environmental organizations, and others can learn about and respond to pressing environmental issues in the Calumet Region. More information can be found at: http://www.csu.edu/cerc/

Aquaponics Facility

In the summer of 2010, Chicago State University opened the Aquaponics Facility. The project consists of raising tilapia fish in a controlled, continuously circulating water system. The effluent of the fish holding tanks are circulated through growbeds, providing nourishment where plants will be grown hydroponically. This integrative process between aquaculture and hydroponics is known as aquaponics. More information can be found at: http://www.csu.edu/bioprehealth/facilities/aquaponics.htm

CSU Prairie Garden

Started in 2003 with a grant from the Illinois Department of Natural Resources (IDNR), the Prairie Garden is populated with species native to Illinois grasslands. The garden allows students to conduct research and also serves as a platform for instruction in how to teach biology. More information can be found at: http://www.csu.edu/bioprehealth/facilities/prairiegarden.htm

CSU Go Green Recycling Program

Chicago State University has a campus-wide recycling program that collects paper, cardboard, bottles, and cans for recycling. Recycling bins are available in all campus buildings. There is also a central location for collecting used batteries. More information about “green” facilities initiatives can be found at: http://www.csu.edu/PFPM/ehs.htm
Eastern Illinois University

Graduate programs that would qualify as green: http://www.eiu.edu/sustainable/

MS in Sustainable Energy (Approved by IBHE Board: 12/4/12)
Duel MS in Sustainable Energy and Technology
Duel MS in Sustainable Energy and MBA
Duel MS in Sustainable Energy and MS in Geographic Information Sciences

We also have an Undergraduate Minor in Environmental Sustainability and a Concentration in Alternative Energy and Sustainability. http://castle.eiu.edu/energy/undergraduate.php

We have created the Center for Clean Energy Research and Education (CENCERE), which is committed to the development of clean, sustainable energy sources. CENCERE partners with a cross-disciplinary team engaged in catalyzing new initiatives in energy research and education. More information about the center can be found here http://castle.eiu.edu/energy/. (4/12/11)

Campus green initiatives include having a Renewable Energy Center that can produce energy using biomass, water conservation and recycling programs.

We have received the following awards for our campus efforts

Outstanding College and University Recycling Program award from the Illinois Recycling Association (2009)

U.S. Environmental Protection Agency's College/University Partner of the Year award (one of 10) for comprehensive waste reduction program (2006)

ASHRAE Regional Technology Award, First Place for Institutional Buildings - Existing, Region VI, (2002-2003)


Information about campus initiatives: http://www.eiu.edu/sustainability/index.php

Governors State University “Green” Jobs Report

Governors State University has a deep commitment toward preparing our students, traditionally underserved and marginalized in public higher education, for the jobs of tomorrow in a global economy while contributing to the ongoing stewardship of the environment at an affordable tuition rate. That commitment is not just in our degree programs and course offerings, but modeled in the efforts of the students, faculty, and staff of Governors State University to look for sustainable and environmental solutions and programming that creates and promotes “Green” Jobs and in the long-term saves money for the university and the state of Illinois.

Degree Offerings
In the fall of 2014, Governors State University admitted its first class of first-year students to take lower-division coursework. These new students elect to join one of three thematic groups which will form a learning community and cohort throughout their lower-division studies. Students within the cohort will take up to 13 credit hours together each term (in addition to three independent hours in areas of their choice). The three cohorts are: Civic Engagement, Global Citizenship, and Sustainability, and the program is designed to offer dedicated programming, coursework, and collaboration on these critical issues, preparing students for dedicated study in their upper-division degree program starting at the end of their second year of collegiate study.

At the undergraduate level in upper-division study, the bachelor’s degree program in Biology prepares students with the latest technology and teaching methods for careers in the life sciences as well as the field of environmental science and sustainability. Students earning bachelor’s degrees and non-degree-seeking students can earn a certificate in Biotechnology and Bio-Analysis. These degree programs are available to direct-entry and transfer-entry students, including those through our nationally-recognized Dual Degree Program which provides a pipeline for students from study at the community college to “Green” and sustainable jobs after completion of a bachelor’s degree.

At the master’s degree level a Master of Science degree in Environmental Biology preparing students for work as professional biologists with a strong environmental emphasis. Governors State University is uniquely located where urban and rural areas meet, allowing students to explore a diverse range of complex environments. Internships are available with the U.S. Fish and Wildlife Services, U.S. Environmental Protection Agency, Illinois Department of Natural Resources, Forest Preserve District of Will County, Indiana Dunes National Lakeshore, Brookfield Zoo, and the Argonne National Laboratory, among many other locations.
Coursework available to degree-seeking students and those who are not seeking a degree plan but with to augment their existing knowledge and skills to be better prepared for employment in “Green” industries is listed below. More information on courses and programs can be found in the university catalog.

ANTH-1100 (Cultural Anthropology)
ANTH-4100 (Urban Anthropology)
ANTH-4610 (Ethnographic Research Methods)
ANSO-3099 (Junior Seminar in Anthropology and Sociology)
ANSO-3300 (Ecology, Environment, and Culture)
ANSO-4300 (Food, Culture, and Society)
BIOL-1200/1201 (Environmental Biology, Lecture/Laboratory)
BIOL-2104/2109 (Biological Science Foundations II, Lecture/Laboratory)
BIOL-3118 (Environmental Studies: A Case Studies Approach)
BIOL-3322/3323 (Ecology, Lecture/Laboratory)
BIOL-4140/4141/4142/4143/4144/4145/4146/4147/4148/4149/4150 (Natural History Topics in Biology)
BIOL-6101/6102/6103/6104/6105/6106/6107 (Environmental Science Topics)
BIOL-6516 (Topics in Ecology)
CHEM-5145/5146 (Environmental Chemistry, Lecture/Laboratory)
ENGL-4483 (Literature of the Environment)
PADM-8400 (Seminar in Public and Strategic Planning)
SOC-1100 (Introduction to Sociology)
SOC-3200 (Social Inequalities)
SOC-3500 (Population Studies)
SOC-4400 (Social Movements)

Modeling Sustainability and Environmental Advocacy as a University
In addition to our degree offerings, Governors State University offers programming based around environmental issues, takes efforts to protect the local and global environment through good stewardship of our planet, and looks for efficiencies through sustainable practice. More information on university sustainability measures can be found below and at our university sustainability website.

Large-scale programming on campus
- Annual participation campus-wide in the “Recyclemania” competition
- Annual participation as a campus in Earth Week celebrations
• Campus Clean-up of the Thorn Creek watershed

Campus sustainability practices
• Use of bio-solids on university-owned farm land
• Use of beet juice instead of road salt in the winter to combat ice on all paved surfaces and sidewalks
• Governors State University harvest the sun through a 64 panel solar-thermal system, offsetting the cost of hot water heating for its shower rooms and 168,000 gallon swimming pool, and displacing approximately 40 therms of natural gas daily
• Campus 50kW wind turbine
• 63 ft diameter rotor on a 120 foot tall tower
• Produces over 140,000 kWh annually and offsets commercial power consumption by approximately 30%.
• Provides educational opportunities for students in renewal technology and raises public awareness in the region
• Annual savings of over $400,000

Campus environmental stewardship practices
• Recycling in every department and classroom
• Use of bio-friendly cleaning products throughout the university by the Housekeeping Department
• Large-scale organic farming on university-owned farm land and the use of a Conservation Agriculture plan
• Installation of permeable pavers in the parking lot to promote effective drainage
• Installation of bio-swales
• Roller-brushing snow off surfaces to limit use of melting products

Energy Performance Contract highlights
• Campus energy audit
• Implementing Energy Conservation Measures (ECMs)
• Heating, Cooling, Air Handling controls
• Lighting and motion sensors to limit unnecessary lighting
• Reducing greenhouse gas emissions by 3,000 metric tons annually
• Guaranteed energy savings

• For a website that will be updated throughout the year on Governors State’s Green Technology initiatives, please visit: http://www.govst.edu/About/Offices_and_Departments/Institutional_Research_and_Effectiveness/Public_Act_97-241/
Illinois State University
Green Technology Efforts

**eRefurbishment & eRecycling:** [http://at.illinoisstate.edu/eRecycling](http://at.illinoisstate.edu/eRecycling)

The goal of the eRecycling program is to repurpose and reuse equipment rather than sending it to a landfill. eRecycling ensures all data has been erased from computers and all other electronic devices that may have data on them, then refurbishes the systems and offers them back to the campus at no cost.

Each piece of equipment is cleaned, the drives are wiped, and a series of diagnostic tests occur in order to deliver a dependable machine. This process is designed to guarantee the system is functional and that University data is protected.

This service is open to any State of Illinois agency. Department of Corrections, Illinois State Police and other state institutions of higher educations have utilize this service.

**Energy Conservation**

Mitigation of energy consumption has been accomplished through virtual server environments, upgrading data centers, establishing disaster recovery sites, consolidating enterprise services and creating collaborative work spaces.

Building and energy systems are highly automated to ensure the most efficient operation of mechanical systems. Additionally devices such as photovoltaic and occupancy sensors provide an effective method of mitigating energy loss in classrooms, parking decks, and other built areas of campus.

Office of Sustainability: [http://sustainability.illinoisstate.edu/](http://sustainability.illinoisstate.edu/)

Northeastern Illinois University: Efforts to Promote the Green Technologies Industry 2015-2016

CURRENT PROGRAMS AND CURRICULUM

Undergraduate Programs:
- B.S. Environmental Science
- B.S. Earth Science
- B.A. Environmental Studies
- B.A. Geography
- Minor in Environmental Studies
- Minor in Geographic Information Science (GIS)
- Minor in Geography
- Minor in Earth Science
- Undergraduate Certificate in GIS

Graduate Programs:
- M.A. in Geography and Environmental Studies
- Graduate Certificate in GIS

Environmental Science
The interdisciplinary Environmental Science program includes coursework in biology, chemistry, earth science, physics, math, environmental studies, and geography.

Selected Courses in Environmental Science:
- ENVI-101. Introduction to Environmental Science
- ENVI-301. Field Methods in Environmental Science
- ENVI-390. Environmental Science Research and Practice
- ESCI-207. Global Climate and Weather

Earth Science Program
The Earth Science Program includes course offerings at the General Education and undergraduate level that emphasize the study of geologic processes that affect decision-making about human activity.

Selected Courses in Earth Science:
- ESCI-109W: First Year Experience: Chicago's Muddy Waters- Environmental Geology
- ESCI 123: Environmental Geology
ESCI 207: Global Climate and Weather
ESCI-327: Aqueous Environmental Geochemistry
ESCI-341: Environmental Hydrology

**Geography and Environmental Studies Program:**
The very structure and focus of the Geography and Environmental Studies program has been addressing green issues since 1965.

**Selected Courses in Geography and Environmental Studies:**
GES-109B. First Year Experience: Chicago Geographies: Environmental Chicago
GES-150. Introduction to Environmental Studies
GES-199. Topics in Environmental Studies for Middle School Teaching
GES-218. Conservation of Natural Resources
GES-220. Pollution Control and Prevention
GES-240. Water Resources and Development
GES-305. Geography and Map Skills for Teachers
GES-307. Environmental Education Seminar
GES-308. Conservation Psychology
GES-319. Environmental and Natural Resources Policy
GES-321. Environmental Impact Assessment
GES-323. Green Infrastructure Planning and Management
GES-327. Forest Resource Management
GES-328. Wildlife Resource Management
GES-329. Sustainable Energy Policy
GES-336. Solid Waste Issues
GES-338. Sustainable Development
GES-339. Geography of Energy
GES-341. Field Methods in Water Resources
GES-342. Water Quality, Treatment, and Standards
GES-344. Chicago River Issues
GES-349. Environment and Urbanization
GES-359. Environmental Planning
GES-360. Environmental Justice and Activism
GES-368. Changing Global Climates
GES-416. GIS for Natural Systems Management
GES-437. Seminar: Global Wildlife Issues
GES-449. Seminar in Land Use Controls
GES-453. Seminar in Sustainable Development  
GES-454. Seminar: Population and Environment  
GES-455. Seminar in Environmental Planning  
GES-456. Seminar in U.S. Environmental Policy  
GES-457. Seminar: International Environmental Policy

Biology Program  
The Biology Program also includes course offerings at the undergraduate and graduate level that deal with conservation and ecology.

Selected Courses in Biology:  
BIO-305. WIP: General Ecology  
BIO-453. Conservation Biology  
BIO-455. Restoration Ecology

UNIVERSITY INITIATIVES AND HIGHLIGHTS

Tree Campus USA  
In February 2016, the Arbor Day Foundation designated the University as a “Tree Campus USA” in recognition of excellence in campus tree management and student and community involvement. Being awarded this designation was a team effort, with collaboration between the Departments of Geography and Environmental Studies, Biology and Facilities Management, and the Division of Student Affairs. The Geography and Environmental Studies program maintains a Geographic Information Systems map of all the trees and shrubs on campus since 1997.

Arbor Day 2016 Celebration  
On April 28, the University celebrated Arbor Day, as well as its recent designation as a Tree Campus USA, a recognition awarded by the Arbor Day Foundation. Attendees learned about the care trees need, and their environmental, social and economic benefits. Attendees also participated in the “Hug-a-Tree” campaign.

Maintenance of On-Campus Prairies and Savanna  
The Departments of Biology and Geography and Environmental Studies jointly maintain small grassland prairies and Swamp White Oak savanna on NEIU's campus with periodic controlled burns, planting, and invasive species control for educational, historic, and aesthetic purposes.

DIVVY Partnership and Ridesharing
Chicago’s Divvy bike-sharing service installed a docking station adjacent to the University’s Main Campus. The docking station location was determined, in part, by an initiative where students could recommend their preferred locations. Northeastern students can receive a discounted Student Annual Membership to Divvy, giving them access to thousands of bikes at hundreds of stations across Chicago. The University is also exploring the possibility of implementing a rideshare initiative. A Metropolitan Transportation Class compared about 50 rideshare software solutions for possible implementation at the University, with funding from the Green Fee.

**Green Conservation Group (GCG)**
This student organization promotes environmental responsibility on campus at NEIU through education and community involvement. All are welcome to participate in their activities to promote sustainability and common-sense environmental practices. Their activities include workshops, film festivals, Earth Day events and social activities off-campus, such as visiting special museum exhibits, gardens, etc.

**Green Business Conference 2016**
The CGC’s inaugural Green Business Conference, held March 31, provided an opportunity to network and increase students’ and the Northeastern community’s knowledge and understanding of today’s progress towards a sustainable world. The GCG partnered with student organizers of the annual International Business Conference.

**Green Fee Committee**
In 2007, the Green Cycle Group (a student environmental club on campus) initiated the idea of a student "green fee" that would be used to promote campus sustainability initiatives. Green initiatives were becoming more popular across campuses all over the country, and a few universities had similar student approved fees to help pay for such expensive projects. The proposal was presented to the Student Government Association who endorsed it leading to a referendum for the entire student body. The green fee was approved in a referendum soon after and with the subsequent approval of the Board of Trustees, the $3/semester "green fee" started appearing on students' bills from Fall 2007.

Accomplishments of the Green Fee Committee include:

**Solar Water Heating System**
Solar panels were installed in 2013 atop the Physical Education Building to heat its swimming pool, allowing Northeastern to reduce its dependence on fossil fuels and reduce its natural gas bills.
**Electric Vehicle Charging Stations**
Helping El Centro in its bid to obtain LEED certification, three electric vehicle-charging stations at that location promote the adoption of pollution-free electric cars.

**Water Bottle Filling Stations**
New water fountains with bottle-filling stations that dispense filtered water have been installed around the University since 2013 to reduce plastic bottle waste as well as energy and resource consumption.

**Solar PV Panels**
Introduced by President Sharon Hahs on Earth Day 2012, these photovoltaic panels on Building B convert the sun’s energy into electricity and reduce Northeastern’s reliance on polluting energy sources. A TV monitor in a highly trafficked part of the building shows visitors its real-time and cumulative power savings.

**Planting of Trees and Greenery**
Native trees and plants benefit local wildlife as well as cut down on air pollution, recharge ground water and reduce runoff that contributes to water pollution and flooding. These aesthetic improvements also contribute to biodiversity.

**Energy-Saving Led Lights and Motion Sensors**
Efficient bulbs and sensors that switch off lighting when not in use save electricity and the need for maintenance with longer-lasting bulbs.

**Electric Maintenance Vehicle**
Replacing a pickup truck, this battery-powered vehicle, which is primarily used by Facilities Management, cuts down on greenhouse emissions and noise pollution.

**Bike Racks**
By adding more bike racks on the main campus, the University increases the potential for bicycle commuting to ease driving and traffic congestion.

**Recycling Bins**
These receptacles, located throughout the University, are some of the most visible displays of sustainability. They encourage the community to think about waste disposal and how it contributes to growing landfills.
**Bird-Safe Windows**

Bird-shaped stickers adorn select windows to prevent bird mortality. Specialized window films to prevent strikes are currently being tested.

**Northern Illinois University**

Sustainability at NIU: [http://www.niu.edu/sustainability/about/index.shtml](http://www.niu.edu/sustainability/about/index.shtml)

Institute for the Study of Environment, Sustainability, and Energy: [http://www.niu.edu/ese/](http://www.niu.edu/ese/)


Environmental Sustainability: [http://www.niu.edu/sustainability/index.shtml](http://www.niu.edu/sustainability/index.shtml)

Sustainability in Housing and Dining: [http://www.niu.edu/housing/dining/sustainability/index.shtml](http://www.niu.edu/housing/dining/sustainability/index.shtml)

The Green Team was formed to help the university evolve into a more sustainable campus by instituting environmentally sustainable policies and practices that promote responsible stewardship of existing resources and the environment: [http://www.niu.edu/gogreen/](http://www.niu.edu/gogreen/)

**Southern Illinois University Carbondale**

Sustainability at SIUC: [http://sustainability.siu.edu/](http://sustainability.siu.edu/)

“Green Programs” and Sustainability Initiatives

**Majors**
Agribusiness Economics
Agricultural Systems and Education
Crop, Soil and Environmental Managements
Environmental Studies
Geography and Environmental Resources
Urban Forest Management – Forestry

**Minors or specializations**
Sustainability – minor
Environmental Sustainability Specialization
Environmental Chemistry Specialization
Civil and Environmental Engineering – minor
Environmental Engineering Specialization
Energy and Environmental Policy

Courses
UCOL 101G 1-3: Foundations of Inquiry Campus Sustainability: SIU Environmental Activities
GEOG 100-3 Environmental Conservation
GEOG 303I – 3 Physical Geography
GEOG 320-3 Introduction to Environmental Sustainability
GEOG 421-3 Urban Sustainability
GEOG 424-3 Sustainable Development
GEOG 470-3 Continuing Issues in Environmental Studies
ANTH 207-3 Sustainability
ARC 481-3 Environmental Design II: Energy and Systems
CSEM 347-3 Urban Soils
CSEM 370-3 Agroecology Sustainable Agricultural Systems
FOR 201-3 Ecology of North American Forests
FOR 285-3 Social Influences on Forestry
FOR 331-3 Forest Ecosystems
AUT 430-1 Automotive Investigations
AUT 480-3 Alternative Fueled Vehicles
HORT 462-3 Sustainable Landscape Practice
HORT 463-3 Plants in Ecological Landscape
HORT 480-3 Designing Outdoor Spaces
TRM 440-3 Technology and Management of Sustainable Enterprises
PLB 301I-3 Environmental Issues
ZOOL 312I-3 Conservation of Natural Resources
ENGR 301I-3 Humans and Their Environment
ENGR 303I-3 The Role of Energy in Society
ABE 405-3 Management of Ethanol Production Facilities
ABE 440-3 Natural and Environmental Resources Economics and Policy 5

Initiatives

In 1999, Southern Illinois University broke ground in sustainability, becoming the first institution of higher education in Illinois to sign the Talloires Declaration. SIU committed to mobilize its resources in order to address the problems and reverse the trends of environmental degradation.

In May 2009, the SIU Board of Trustees unanimously passed the $10 per semester student Green Fee “to provide a regularized source of funding for on-campus renewable energy, energy efficiency, and sustainability projects and research.” This fee was passed after overwhelming approval by 73% of the students who voted in a campus wide referendum in the first student-led fee increase in SIU history.
The Sustainability Council, along with the Green Fund Committee, was formed to make campus-wide recommendations concerning sustainability and allocate Green Fund revenue (generated by the Green Fee). Since then, the Committee has awarded over $1.6 million for on-campus research and projects involving renewable energy, energy efficiency, and sustainability.

SIUC's Vermicomposting Facility - creates compost from campus dining food waste and a recent expansion involved building an aerated static pile (ASP) facility that will greatly increase the university’s composting capacity.

The Agriculture Building boasts a green roof, a living wall and a rain garden that also offer excellent hands-on learning opportunities for students.

SIUC also hosts a Center for Sustainable Farming.

SIU Carbondale also has a diverse assortment of initiatives that include: bike repair stations, recycling and hydration stations, sustainable vegetable gardens, composting commodes, energy-efficient lighting, and a hydroponic workshop.

**Southern Illinois University Edwardsville**

Sustainability at SUIE:  [https://www.siue.edu/sustainability/](https://www.siue.edu/sustainability/)

Sustainability in housing: [https://www.siue.edu/housing/sustainability/](https://www.siue.edu/housing/sustainability/)

**University of Illinois at Chicago**

Sustainability at UIC:  [https://sustainability.uic.edu/](https://sustainability.uic.edu/)

Summer Institute on Sustainability and Energy:  [https://sise.uic.edu/](https://sise.uic.edu/) (August 4-16, 2016)

Sustainability Jobs, Internships & Funding:  [https://sustainability.uic.edu/jobs/](https://sustainability.uic.edu/jobs/)

**University of Illinois at Springfield**

Sustainability at UIS:  [https://www.uis.edu/sustainability/](https://www.uis.edu/sustainability/)
University of Illinois at Urbana/Champaign

Institute for Sustainability, Energy, and Environment: http://sustainability.illinois.edu/

Student Sustainability Committee: http://ssc.sustainability.illinois.edu/

Illinois Sustainable Technology Center: http://www.istc.illinois.edu/info/govs_awards.cfm

Western Illinois University

Sustainability at WIU: http://www.wiu.edu/vpas/sustainability/education.php

Sustainable WIU Pledge: http://www.wiu.edu/student_services/university_union/sustainability/