6.

EDUCATION

TEACHING THE POWER OF CLIMATE ACTION

Because sustainability is a major worldwide issue, many campus entities and Illinois faculty are driven to implement a sustainability component into their departments and courses. When iSEE was formed, part of its mission was to enhance sustainability in academic courses and ensure that every student leaves our campus with a cohesive understanding of what it means to be sustainable and how to incorporate this into their personal and professional lives.

The multidisciplinary principles of sustainability should permeate higher education curricula. All fields — from engineering to behavioral sciences, economics to the fine arts — can be brought into the 21st century through synthesis with environmental topics. Here at the University of Illinois, such efforts will enhance student iCAP engagement.

In 2020, it is particularly crucial that the dialogue surrounding environmental sustainability becomes as interdisciplinary as possible. Government, industry, and advocacy organizations are looking to a rising generation of environmental leaders from diverse backgrounds. Graduates with a worldview that combines a technical knowledge base with social understanding of local and global sustainability concepts are in high demand.

With 250 undergraduate and graduate programs distributed throughout 16 major academic units, the university has the opportunity to instill a culture of sustainability into students of all disciplines. No matter their academic paths, we hope to empower our students to address today's most critical development and environmental challenges.

Following graduation, Illinois students inspire change across the globe — in-state and out-of-state, from Fortune 500 firms to small nonprofits. According to the 2018-19 Illini Success Report, 93% of Illinois 2019 graduates secured a "first destination" (i.e., a volunteering position, internship, or job).[129] An Illinois education should empower students of all professional trajectories to be recognized as environmental leaders by colleagues, peers, and friends.

Newly formed in 2019, the Education SWA-Team is tasked with suggesting opportunities for students to engage with sustainability, energy, and environmental education offerings and co-curricular opportunities during their time on campus. This team was preceded by the Sustainability Education Task Force. In 2010, this Illinois faculty coalition developed Sustainability Outcomes for Illinois graduates in the three themes of "Sustainability in Day-to-Day Life," "Sustainability Knowledge and Skills," and "Sustainability as a Personal Vision." These Outcomes are defined as follows:

SUSTAINABILITY IN DAY-TO-DAY LIFE

1. Students will learn ways in which natural resources are used to produce what they consume, such as the food they eat, the water they drink, and the energy they use.

2. Students will understand ways in which their lifestyle and well-being are interconnected with those of diverse producers and consumers around the world, including impoverished communities.

SUSTAINABILITY KNOWLEDGE AND SKILLS

1. Students will learn core concepts of ecology and develop skills relevant to their chosen field to provide a basis for environmental sustainability.

2. Students will learn to think holistically about sustainability using perspectives across multiple disciplines.

SUSTAINABILITY AS A PERSONAL VISION

1. Students will understand relationships between global environmental and economic trends and their impact on diverse cultures and communities.

2. Students will develop an integrated vision for sustainability that embraces their personal lives, professions, local communities, and the world-at-large.

Ten years later, our goal is for curricular and co-curricular sustainability learning to permeate day-to-day student life as well as the overall education experience. Our broad iCAP aim is that graduates integrate these sustainability principles into every aspect of their professional and personal lives.

The university has a significant array of sustainability-related educational course offerings and programs hosted by a range of colleges. Three sets of highlights are noted below.

129 https://news.illinois.edu/view/6367/806931

iSEE's curricular education programming has grown from 2015 to 2019:

» The Sustainability, Energy, and Environment Fellows Program[130] (SEE FP) enrolled 56 students as of spring 2020. This curricular minor originated in response to a "Curricular Education" objective in the 2015 iCAP, which called for transitioning an existing Environmental Fellows program to be housed under iSEE. Students can apply to become a Fellow, and the program requires completion of 16-18 pre-approved course credits. In fall 2019, iSEE hired a full-time Academic Instructor/Advisor to develop the SEE FP and cultivate interdisciplinary student cohorts.

» Each semester, iSEE refreshes a database of courses related to sustainability. The database identifies courses meeting SEE FP program requirements as well as hundreds of others that incorporate sustainability.[131]

» The Certificate in Environmental Writing (CEW)[132] launched in fall 2017 marks a collaboration between iSEE, the School of Earth, Society, and Environment (SESE), and the English Department. The CEW builds students' skills in written and multimedia environmental communication with the value-added goal of publishing their best work in a dedicated journal, *Q Magazine*,[133] which debuted online in fall 2018 and in print in summer 2019. Funding from donor Janelle Joseph allows students to regularly travel to research on-location articles. As of spring 2020, we are pleased to announce that this funding will continue for two more years, and that funds have also been allocated to an annual student writing contest.

The 2020-21 school year also marks the second cycle of the Levenick iSEE Teaching Sustainability Fellows Cohort.[134] This curriculum development fellowship allows Illinois faculty and instructors to apply for funding to either augment an existing course with sustainability content or fashion a new course with a sustainability focus. The result is increased offerings of creative, practical courses that integrate sustainability into a variety of disciplines and encourage students and faculty to explore environmental topics from new angles.

Additionally, iSEE's Campus as a Living Lab (CALL)[135] program encourages interdisciplinary, faculty-led sustainability research and links campus goals to broad environmental challenges. Examples of CALL research include studying traffic to reduce idling time, integrating groundwater resources and geothermal energy for water and energy security, and generating electricity through wind turbine integration.

The College of Fine and Applied Arts (FAA) recently launched a B.S. in Sustainable Design.[136] The program incorporates innovative design thinking strategies "with a focus on building sustainable communities through the intentional design of environmentally sensitive products, buildings, neighborhoods, landscapes and cities." The College of LAS also houses a major in Earth, Society, and Environmental Sustainability (ESES), in which students study the relationship between the environment and economic and social systems with an emphasis on sustainability solutions.

Many campus entities are driven to implement a sustainability component into their departments and courses; that being said, iSEE has taken a leadership role to enhance sustainability in academic courses and ensure that every student leaves our campus with a cohesive understanding of how to incorporate sustainability into their personal and professional lives.

Of particular importance to our educational programming objectives is integrating sustainability into science, technology, engineering, and mathematics (STEM) curricula. Students in traditional STEM programs often lose sight of the relationship between technical knowledge systems and the societal, political, and economic aspects of sustainable decision-making. Creating paths for cross-pollinating between STEM and sustainability will not only benefit students, but will also encourage faculty members to continue their own intellectual and professional development in interdisciplinary sustainability. We also aim to provide instructors and students with living examples for sustainability case studies. In the past, iCAP objectives have been incorporated into courses as term project topics; additionally, Facilities and Services, iSEE, and other colleges (e.g., the Grainger College of Engineering and the College of ACES) consistently support undergraduate and graduate design projects and research opportunities. Given these strong \precedents, incorporating campus sustainability projects into more courses is a feasible target.

One opportunity for students of all majors to participate in sustainability is through the Sustainability Living-Learning Community (SLLC). University Housing offers 11 Living-Learning Communities around specific themes by providing in-hall courses and hands-on programs.

130 https://bit.ly/2PbdCsd

131 https://bit.ly/39FTmsa

132 https://sustainability.illinois.edu/education/cew/

133 https://q.sustainability.illinois.edu/

134 https://bit.ly/2X9eWjB

135 http://go.illinois.edu/campuslivinglab

136 https://bit.ly/2DiuJ8Q

Students in the SLLC learn about the diverse topics that stem from sustainability and practice environmentally-conscious living.

At Illinois, we are educating tomorrow's critical thinkers. We hope to extend and diversify our efforts to integrate sustainability into all aspects of students' educational journeys — not simply those taking place in a classroom. Each milestone along the way to commencement, from first-year orientation to a senior-year capstone course, is instrumental in shaping a student's identity, be it as a learner, pre-professional, or well-informed citizen. At each of these stages, we hope to meet students where they are and equip them with the skills to act as informed and active environmental stewards.

Whatever our students' paths, our goal is to make their sustainable decision-making instinctive, well-informed, and practical.

In December 2019, students enrolled in ENVS 492, the Sustainability, Energy, and Environment Fellows Program (SEE FP) capstone course, as well as CEE 398: Project Based Learning, presented their final projects to a faculty panel.

6.1 Broaden Sustainability Education
6.2 Sustainability Course Catalog
6.3 Environmental Leadership Program
6.4 Sustainability Internship Program
6.5 Sustainability at Career Fairs
6.6 Graduate Certificate in Sustainability

Education Objectives

The following Education objectives were developed by the SWATeams, iCAP Working Group, campus community, and Sustainability Council to guide the university's actions in compiling a portfolio of pragmatic sustainability education programs.

iSEE offered NRES 285 in spring 2020 as a Student iCAP course co-instructed by Sustainability Programs Coordinator Meredith Moore and Academic Program Instructor/Advisor Eric Green.

6.1 [iSEE] Broaden the availability of sustainability education across the entire curriculum, beginning with first-year student orientation and continuing through commencement, with at least one of four proposed methods implemented by FY24.

When first-year and transfer students arrive at the university, they are introduced to a range of concepts that guide their approach to college life. These knowledge areas, which are both practical (e.g., MTD bus stop locations) and constructive (e.g., resume-writing best practices), should be augmented with a sustainability toolkit.

To broaden sustainability education for all students, at least one of the following proposed mechanisms is to be implemented by FY24:

1. First-year student sustainability seminar

We aim to develop a required educational program for all incoming students to introduce sustainability as early as possible. This seminar will introduce campus sustainability programs and iCAP projects and can be implemented in collaboration with individual colleges as part of first-year orientation seminars. We will report the total number of student participants each semester.

First-year student engagement is also a strategy outlined in the Zero Waste chapter (see Objective #5.3.1) to effectively communicate campus recycling best practices.

2. Sustainability general education (GenEd) credit

In order to implement a sustainability GenEd requirement, we must identify the appropriate department with whom to collaborate (i.e., General Education Board within the Office of the Provost). The Committee for Environmental Sustainability within Illinois Student Government (ISG) is investigating the prospect of including a sustainability GenEd credit for all students.

3. 100-level courses

Several colleges offer 100-level courses designed to onboard students and ease the transition into college life. By FY24, we aim to integrate a sustainability unit into each of these courses. We will pilot this program through, as an example, sections of the Grainger College of Engineering and the College of LAS. Each course will include a lesson designed to expose students to the iCAP goals and introduce practical applications of sustainability learning. For example, how can students, as members of campus and of society, apply sustainable practices to their education and daily lives?

Because a student studying civil and environmental engineering might encounter sustainability differently than an individual pursuing music performance, units will be allowed flexibility to tailor course content to their respective disciplines. Junior and senior students tasked with teaching these courses will receive appropriate training.

4. Sustainability workshop

Creating a sustainability workshop with a catchy acronym (similar to FYCARE and ACE IT) would be beneficial because the instructors for such a workshop would likely be campus staff and faculty members who are passionate about sustainability efforts.

This workshop, potentially named EARTH (Environmental Action Right This Hour), would be a one- or two-hour-long course focusing on campus sustainability and opportunities for student involvement.

6.2 [iSEE] Establish a comprehensive online repository for courses and academic programs with sustainability content.

A comprehensive listing of sustainability courses and academic programs must be made easily accessible to students. This includes majors, minors, certificates, and opportunities in various departments (e.g., the iSEE Sustainability, Energy, and Environment Fellows Program and undergraduate Certificate in Environmental Writing, IB ecology minor, courses in NRES, ACES, LAS, ESE, etc.). An improved search filter for sustainability-related courses in the university course catalog will centralize resources for students interested in sustainability offerings for academic credit and increase these programs' visibility during registration periods.

This repository, which may be developed as part of the iSEE website, will assist in data and project updates and thus expand the connectivity of digital sustainability resources.

"It excites me to see a focus on educating students about sustainability efforts on campus. The educational goals will encourage more students to be interested in sustainability, which is exactly what the world needs."

— Leah Courtney '23

6.3 [iSEE] Launch an undergraduate Environmental Leadership Program (ELP) that includes two week-long residential intensives, pre-professional workshops, visiting speakers, and field trips to Springfield and Washington, D.C.

While we strive to integrate sustainability into curricular courses, we also hope to create opportunities for student engagement with energy and the environment outside the classroom. One example is the proposed Environmental Leadership Program (ELP). The ELP is focused on advanced undergraduate students, and will take the form of two week-long immersive training workshops held on campus (fall) and in Washington, D.C. (spring), in addition to pre-professional seminars and environmental leadership training.

6.4 [iSEE] Develop a sustainability internship program by partnering with businesses, nonprofits, local governments, and cultural institutions in Central Illinois. The total number of internships awarded will be reported each year.

In conjunction with the short-term ELP, we will offer a long-term internship opportunity for students to gain experience incorporating sustainability into the professional sphere.

According to the 2018-19 Illini Success Report,[137] 90% of graduates reported participating in experiential learning opportunities like internships. With this in mind, providing opportunities for sustainability-focused experiential learning is an excellent way to integrate sustainability into students' educational pathways while maintaining the university's mission. It is therefore imperative to increase co-curricular sustainability program offerings for students seeking professional development, leadership training, and sustainability education outside of their disciplines.

We plan to collaborate with local governments, businesses, nonprofits, and cultural institutions to achieve this objective. This allows for students to network and cultivate relationships with sustainably-minded organizations in the area.

6.5 [Career Center w/iSEE] Partner with The Career Center and potentially other career offices in FY22 to help students explore and discover career opportunities that are connected to professional interests and goals related to sustainability. Incorporate a sustainability component at a minimum of two events beginning in FY22.

As students search for internship and employment opportunities beyond the university, we aim to encourage them to let organizations' sustainability commitments guide their decision-making.

Career fairs are essential to student exploration of internships, jobs, and professional development both on campus and off. We propose to pilot a sustainability component in existing campus career fairs. Participating organizations may opt to display an "Eco-Friendly" tag to serve as a sustainability designation; alternatively, this objective may include a networking component or career panel to engage students with sustainability-focused opportunities.

137 https://go.illinois.edu/IlliniSuccess_1819AllCampusAnnualReport

The inaugural 2019-2020 Levenick Teaching Sustainability Fellows Cohort discusses best practices for interdisciplinary sustainability education, November 2019.

Following the initial rollout of this method, a survey will be distributed to student attendees to solicit feedback on questions such as "Did the 'Eco-Friendly' tags influence your decision-making?" and "Are you more likely to pursue opportunities with companies who self-identify as sustainably-oriented?"

6.6 [iSEE] Offer a new graduate certificate in sustainability by FY24.

The University of Illinois Urbana-Champaign educates more than 16,000 graduate students.[138] While many do not work in fields directly related to sustainability, it is increasingly true that many care deeply about environmental issues and wish to incorporate sustainability awareness into their research, classrooms, and workplaces.

To integrate sustainability themes into diverse graduate programs, iSEE plans to coordinate a graduate certificate in sustainability. Students will commit to a core course requirement, after which they can pursue one of multiple tracks (e.g., infrastructure and planning, business applications of sustainability, human dimensions, policy, etc.).

Implementation of a new graduate certificate in sustainability can be leveraged with external funding support, such as the graduate NSF Research Traineeship (NRT) program.

138 https://grad.illinois.edu

Conclusion

The educational component to our strategic plan was foundational to the American College and University Presidents' Climate Commitment first signed in 2008. This commitment reads:

> *Campuses that address the climate challenge by reducing global warming emissions and by integrating sustainability into their curriculum will better serve their students and meet their social mandate to help create a thriving, ethical and civil society. These colleges and universities will be providing students with the knowledge and skills needed to address the critical, systemic challenges faced by the world in this new century and enable them to benefit from the economic opportunities that will arise as a result of solutions they develop.*[139]

139 https://bit.ly/2X8B4L6

As we pursue climate-consciousness, carbon neutrality, and resilience over the next 30 years, this sentiment remains integral to our success. We are fortunate to have a passionate student body who consistently and increasingly prove their commitment to environmental stewardship. It is our responsibility to educate these students in principles of sustainability, and to impress upon tomorrow's cohort of leaders that their aspirations are not only supported, but achievable.

Our students have diverse identities and therefore diverse paths. They will be researchers, professionals, mentors, artists, athletes, educators, scientists, and storytellers. The multidisciplinary curricular and co-curricular programming envisioned in this chapter is designed to empower current and future students to make a difference wherever they find themselves post-graduation.

With the sustainability imperative as relevant to incoming freshmen as to final-semester seniors, we believe that a sustainable future for our Illinois graduates begins in classrooms all across our campus, and should likewise permeate every aspect of the Illinois student experience.

Ultimately, the Education objectives will be implemented in conjunction with other iCAP objectives; we will particularly work to promote students' leadership in campus sustainability efforts.