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1. **What are some of the topics that you cover in your course?**
This course covers various aspects of the energy system, focusing on the fundamental science and engineering underlying the extraction, conversion, and end use of various forms of energy. Take fossil fuels as an example, their formation, chemical composition and energy density, and various turbines and engines for electricity and motive power conversion, are introduced systematically.

2. **Why were you interested in teaching this course?**
The importance of energy to the survival and prosperity of human civilization can not be further emphasized. However, energy consumption is also the cause of many critical environmental issues, such as air pollution and climate change. It is difficult to find another course that is close to our daily life, and yet integrates a broad range of subjects in a quantitative manner. Since this course was taught for the first time at UAlbany, I had the opportunity to completely and independently develop the course curriculum, which is a time-consuming while rewarding experience.

3. **Which of the UN Global Goals does your course embody?**
The following goals were addressed most in this course: #9 Industry, innovation, and infrastructure; #13 Climate actions; and #7 Affordable and clean energy.

4. **How do you measure if students have increased their knowledge with regards to sustainability literacy?**
According to the Bloom’s taxonomy regarding six-level of cognitive learning, I adopted several strategies to measure students’ understanding of concepts and methodologies, capability to apply related skills to analyze and evaluate certain scenarios, including exams, research projects, and class presentation.

5. **Is there anything else you want students to know about this course?**
This course is suitable for students of any science and engineering majors, who are interested in understanding the energy system and its broader impacts.
Waste generated on campus now accounts for 10% of our carbon footprint. To assist in improving our waste diversion practices, two students from the Office of Sustainability worked with Res Life to test out new recycling and waste bins given out in the dorms.

**Summary of the pilot project:**
Before the academic year started, the group selected five dorm halls on both Indian and State Quad at random and switched the bins they received upon move-in. During the year, data was gathered to test the effectiveness of each type of bin given. Throughout both the Fall and Spring semester, audits of the trash rooms were conducted periodically in each dorm hall that identified how many recyclables were found in the trash bins. At the beginning of each semester, surveys were conducted in each of the affected dorm halls that focused on the students’ perceptions and behaviors of recycling. After collecting all of the audits and analyzing the data, it was determined that the multi-recycler bin (pictured below) was the most effective for promoting recycling habits and diminishing waste contamination. As a result, these bins were purchased for distribution in Indian and State Quad beginning this academic year. If the reception to the bins is positive, the distribution will expand to all the quads.

**Student Perception Survey Data**
- 65 Respondents from sample population
- 16 Respondents lived in a hall with a multi-recycler
- 12/16 Respondents stated their bin made recycling more convenient
- 15/16 Respondents agreed or strongly agreed with the statement, “I believe recycling is important.”
- 38/65 Respondents agree the “What is Recyclable” signage content on the back of the dorm rooms is clear and helpful
The Climate Action and Sustainability Plan has been further refined over the summer and is ready for the campus to take a look at its contents. Using the UN Global Goals (www.globalgoals.org) as our determinants of sustainability, we engaged over 100 campus members in the process of aggregating and analyzing the actions we can take to reduce our carbon footprint as well as teach, research and adopt sustainable practices. Six common themes were derived from the working group meetings and planning summit. They are: Ecological Literacy, Impactful Research, Equal Access, Community Leadership, Carbon Neutrality & Climate Resiliency and Culture of Sustainability. Each theme has a vision for 2030, achievable goals over the next three years and measurable outcomes. Some highlighted actions we will seek to undertake include: sourcing 30% of our electricity from renewable energy, providing opportunities to get involved in global efforts such as the UN Global Compact, Al Gore’s Climate Reality Project and the Clinton Climate Initiative, addressing environmental justice issues and strengthening our research and curriculum efforts.

If your office, department or organization would like a representative from the Office of Sustainability to present on the plan at a future group meeting, just email us at gogreen@albany.edu and let us know when and where.
Professor Romeiko explains the different reasons why she was interested in researching this topic including:

- Food systems urgently require transformative solutions and offer unique and exciting opportunities for sustainable innovations.
- Agricultural supply chains, essential for meeting societies’ daily food and energy needs, result in significant environmental pollution and economic loss. Specifically, agriculture contributes to ~8% of national GHGs and ranks as a leading contributor to nutrient pollution.
- The estimated economic loss of environmental damage caused by nitrogen release alone already exceeds $210 billion/year in the United States.
- Identifying the optimal agricultural supply chains capable of simultaneously minimizing life cycle cost, GHGs and nutrient releases is critical for long term sustainability.

One way to make agriculture more sustainable is to use reclaimed water. Professor Romeiko conducted a life cycle assessment of corn, soybean and wheat systems irrigated with groundwater and reclaimed water in Northern China. A life cycle assessment examines the energy, material, and waste flows of a product from formation to disposal, and their impact on the environment. The analyses indicated that the life cycle global warming impacts of the crop systems ranged from 0.37 to 0.64 kg CO2-eq/kg grain, with reclaimed water irrigated soybean and ground water irrigated wheat exhibiting, respectively, the lowest and highest global warming impacts. Irrigation, farming equipment operation, on-field emissions and fertilizer production ranked as top contributors to the life cycle impacts for corn, soybean, and wheat. This suggests that replacing groundwater with reclaimed water as the irrigation source can significantly
decrease life cycle global warming, acidification, ozone depletion, smog formation, and respiratory impacts of corn, soybean and wheat systems. However, replacing groundwater with reclaimed water increased the life cycle noncancer impacts of those systems. Therefore, coordinating policies within the water–food–health nexus is required, in order to minimize the environmental tradeoffs, while maximizing the benefits of irrigation with reclaimed water.

Professor Romeiko’s work has been published in a number of journals including the Journal of Environmental Research and Public Health, Environmental Research Letters and the International Journals of Life Cycle Assessment. Her findings were even sent to the US Congress in support of environmental policies.

This research complements the courses taught by Professor Romeiko including Sustainability, Green Design and Public Health (EHS 560) and Risk Assessment (EHS 665). EHS 560 discusses environmental issues associated with food, water and energy systems, and potential strategies for meeting food, water and energy requirements while minimizing negative environmental consequences. EHS 665 focuses on quantitatively evaluating health risks of chemical and microbial agents. Both courses directly address multiple UN Sustainable Development Goals, such as #3 Good Health and Well-Being, #6 Clean Water and Sanitation and #13 Climate Action.

Professor Romeiko’s research team is actively looking for research assistants in the area of environmental sustainability. More information about her projects are available at: https://www.albany.edu/news/experts/83448.php.
It’s time for the 13th Annual Energy Campaign! Our goal is a 10% reduction of electricity from our baseline across campus this year. In Fall 2018, we saved 779,474 kilowatt hours or 291 metric tons of carbon dioxide emissions. This is equal to the annual electricity use of 43.6 homes for an entire year or taking 62 cars off the road for one year or the carbon sequestered by 7,542 trees. The Energy Campaign kicked off on Wednesday, September 4th and will run until November 10th. This 10 week competition is split up into 5 bi-weekly themes, where we will focus on specific actions that reduce energy usage.

Bi-Weekly Themes:

**9/4-9/18 Pledge to conserve**
- Actions: Sign energy pledge; exchange old incandescent lightbulbs with energy efficient ones

**9/19-10/2 Think outside the bulb**
- Actions: Use daylight instead of overhead lights to illuminate your office/room; turn off classroom, office or dorm room lights at the end of the day

**10/3-10/16 Watts on? Turn it off!**
- Actions: Turn off printers/copiers at the end of the day; turn off coffee pot/Keurig and other electronics when not in use

**10/17-10/30 Slay Energy Vampires**
- Actions: Unplug phone/laptop charger when it is not in use; plug devices into a surge protector and switch it off at the end of the day for one easy shut down

**10/31-11/11 Give it a Rest**
- Actions: Adjust sleep/hibernation mode for printer and computer; turn off screensaver on computer
Climate Strike for Our Future

**Friday, September 20th from 11:00AM – 4:00PM from Page Hall to West Capitol Park**

Our planet is in peril and is in dire need of our help to call for change. Please join the UAlbany Youth Group in marching and rallying for environmental action that can help save our planet! Poster Making: 11:30-12:15, Opening Statement: 12:15-12:25, Marching from Page Hall to West Capital Hill: 12:30pm, Rallying: 1-4pm

iNaturalist: Sharing Observations of Biodiversity

**Saturday, September 28th at 11:00 AM at Albany Pine Bush Discovery Center**

iNaturalist is a citizen science project and online social network of nature enthusiasts, where users can share observations, get help with identification and more. Start inside for an introduction, then hike 0.9 miles to record some observations and become part of the Albany Pine Bush’s online project. Plan to bring your own charged device with iNaturalist already downloaded. Reservation required: [https://albanypinebush.org/index.php?section=visit-calendar&evtid=763](https://albanypinebush.org/index.php?section=visit-calendar&evtid=763).

Brilliant and Bristly Buckmoths

**Sunday, September 29th from 1-3pm at the Albany Pine Bush Discovery Center**

Join us for a 0.9-mile hike to discover the amazing world of buckmoths. The inland barrens buckmoth is a large beautiful moth with bold black and white wings that flies for only a brief window of time during daylight in the early fall. A species of special concern in New York State, our local buckmoths depend on scrub oaks that thrive in this sandy, fire-dependent ecosystem. This is a Hudson River Valley Ramble event. Reservation Required: [https://albanypinebush.org/index.php?section=visit-calendar&evtid=737](https://albanypinebush.org/index.php?section=visit-calendar&evtid=737)
“In September 2012, I stuck out my thumb in Denver, Colorado, and hitchhiked 1,500 miles north to the Alberta tar sands. After being duly appalled, I commenced my 1,700-mile hike south following the route of the proposed Keystone XL pipeline, from Alberta to the Texas Gulf Coast. It would become a 4.5 month journey across the Great Plains. To follow the pipe, I couldn't take roads. I'd have to walk across fields, grasslands, and private property. I'd have to trespass across America.”- Ken Ilgunas

Ken Ilgunas is an award-winning author, journalist, and backcountry ranger in Alaska. He has hitchhiked ten thousand miles across North America, paddled one thousand miles across Ontario in a birchbark canoe, and walked 1,700 miles across the Great Plains, following the proposed route of the Keystone XL pipeline.

His book is about his journey--fleeing from cows, taking cover from gunfire, and keeping warm on a very wintry and questionably-timed hike. But it's also about coming to terms with climate change and figuring out what our role as individuals should be in confronting something so big and so out of our hands.

What to hear more? Ken will be here on October 4th in LC 20 from 12:30-2 pm, so please come out and listen to Ken’s presentation and learn more about his journey. You can even meet and talk with him at the end of the event!
TRESPASSING ACROSS AMERICA

WITH WRITER ED ILGWRAS

Friday, October 4th
12:30 to 2 pm, LC 20

Free Pizza!

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Printed on 100% recycled paper
1. What year did you graduate?
2015

2. What was your major/minor?
   Major: Political Science
   Minor: Sustainability

3. What was your co-curricular and student organization involvement on campus?
   - Member of the Environmental Consortium of Colleges & Universities and a member of the UAlbany Sustainability Council
   - Teaching Assistant and Peer Mentor for the courses “Current Controversies in Politics” and “NY Power Dialogue”
   - Founding Vice-President of the UAlbany Green Party Society, and led a divestment from fossil fuels movement on campus

4. What are you doing now? Where do you live?
   I now work as a Director for the Alliance for Clean Energy New York (ACE NY). Our mission is to promote the use of clean, renewable electricity technologies and energy efficiency in New York State, in order to increase energy diversity and security, boost economic development, improve public health, and reduce air pollution. I am a registered lobbyist responsible for reviewing and responding to energy policy proposals from State agencies, as well as developing weekly policy updates and other communications to the member companies of ACE NY. I live in downtown Albany and volunteer as a member of the Albany Community Choice Aggregation (CCA) Steering Committee.

5. How have you applied your experience with the sustainability movement on campus and involvement with the Office of Sustainability into your post-college life and career?
   The experience I gained through the sustainability movement on campus has helped shape my career into what it is today. Having the opportunity to interact with the great many cohorts involved in SUNY’s sustainability efforts really helped me gain an appreciation for the like-minded people out there also driving for similar change. Despite the sometimes overwhelming urgency of the climate crisis at hand, pooling our efforts and having fun at the same time makes us all part of something bigger than any one person can accomplish. The Office of Sustainability helped instill these cooperative values in me, which I try to carry into my current career working towards a more sustainable future.

The Office of Sustainability is proud of the successes of our sustainability alumni! They were essential in the early stages of the sustainability movement at UAlbany and have shaped where it is now. Take a moment to read about them in our “Sustainability Alumni Spotlight” section of the Sustainability Bulletin each month.