



## Integrating Sustainability Across the Curriculum Summer 2021

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### Summary:

Integrating Sustainability Across the Curriculum is open to both graduate and undergraduate students. This eight-week summer program teams students with participating faculty to revise or develop a new course that incorporates sustainability as a theme in the course. Each student works with two faculty members, 20 hours each per week each, and their work may involve researching new material for courses, compiling course reading lists, or developing new assignments or exam questions. Throughout the summer each student research intern will be expected to:

- Work closely with the assigned faculty on the development of their courses;
- Participate in workshops and sustainability-themed field trips with other students;
- Present their course development in a poster session during the following fall semester.

The Integrating Sustainability across the Curriculum program is a key component of the Penn Climate and Sustainability Action Plan 3.0, and is designed to support the development of new coursework that addresses critical issues in 21st century sustainability.

The research internships are considered equivalent to a full-time job (40 hours a week); interns will be paid for eight-weeks, starting June 1, 2021.

**Students must have work-study award capable of meeting the required hours for the position.**

### Details:

6 positions available for Summer 2021

\$14.00-17.00 per hour depending on education and experience / 40 hours per week

Applications due Wednesday, April 7 and will be reviewed on a rolling basis

### Contact Information:

Interested students should send a resume/CV and 1-2 page statement of interest in the internship position with first and second choice of course sets to Natalie Walker at [Sustainability@upenn.edu](mailto:Sustainability@upenn.edu)

### Course Set 1

**CPLN 505 – Planning by Numbers** - Megan Ryerson, Associate Dean for Research, Department of City and Regional Planning

Through ISAC, *Planning by Numbers* will integrate sustainability into a quantitative methods course. The course will focus on analyses of carbon emissions from transportation modes and travel choices and environmental justice analyses of transport accessibility. The ISAC research assistant will use SEPTA Key

data to better understand the geography of a user's full transit journey in order to better measure the level of emissions they generate on their trip and how users are exposed to environmental hazards in the urban environment. The ISAC research assistant's primary responsibilities will be to develop a series of workable datasets from the SEPTA Key data, and to help develop assignments that conduct analyses of carbon emissions and environmental justice exposure.

**LARP 760 – Topics in Ecology** - William Young, Lecturer, Weitzman School of Design

*Topics in Ecology* looks at how the health of human individuals and their communities depends crucially upon the health of the ecosystems, societies and communities in which they participate. The course is grounded in applications in ecology to achieve the triple bottom line: economy, ecology, and culture. Projects are looked at through how they benefit people, how they can be made affordable and scalable, and how they protect and heal the earth. These metrics can be measured, and a carbon footprint can be tabulated for every project. The ISAC research assistant will build a carbon sequestration calculator which can be used to evaluate different methods of carbon sequestration. The student will research and evaluate Carbon Farming, Afforestation and Reforestation, Bioenergy and Bury, Biochar, and Fertilizing the Ocean. The student will use the carbon calculator to evaluate the carbon capture of proposed alternatives.

## Course Set 2

**ARCH 111 – Architecture in the Anthropocene** - Daniel Barber, Associate Professor, Weitzman School of Design

*Architecture in the Anthropocene* explores the importance of environmental ideas to the development of architecture over the 20<sup>th</sup>-century. Issues of importance include theories of risk, the role of nature in political conflicts, design and environmental communication, and the relationship between speculative design and other narratives of the future. As part of the course students will pursue a collaboration with various companies and colleges to bring more roof top solar and other forms of renewable energy to Philadelphia. The ISAC research assistant will review the material of and establish relationships with various solar energy groups, review the syllabus and readings in order to update the course according to this adjusted focus, and conduct preliminary work for the PPEH symposium.

**Sustainable Development and Culture in Latin America** – Teresa Gimenez, School of Arts and Sciences

This course studies the importance of culture within the sustainable development discourse in the Latin American context. The course deals with issues of social and environmental inequality through the lens of culture and through problems caused by unsustainable methods of agricultural production, and the cultural and resource constraints that perpetuate these problems. This course includes a one-week immersive experience in Costa Rica where coffee, a key product for its economy and identity, is now at risk due to unsustainable farming practices and global warming. In addition, the course is also offered in Spanish, so that major/minors in the department can get deeper intercultural understanding through the language while building on their linguistic proficiency. The ISAC student research assistant will work on translation of reading materials, developing reading discussion questions, assembling and translating

power points, and uploading all the materials to Canvas. **Work on this course requires Spanish language skills.**

### Course Set 3

#### **Changing Environment** – Shelley Spector, Weitzman School of Design

This seminar explores both historical and contemporary issues in a spirit of curiosity and critique, and investigates how these ideas can clarify and complicate our practice as artists and our understanding of the contemporary world. Issues covered range from traditional investigations of aesthetics, to more recent studies of identity, to changes in form and technology. With new content informed by research at the intersection of environmental sustainability and artistic practices, students will understand how they can participate in change making, awareness and boundary pushing with their work. The summer work plan for the ISAC research assistant will have three major components: intensive engagement and review of the material studies from an environmental, creative and historical perspective; exploration of recent material practices, theories, and speculative projects focused on the effect of environmental issues on contemporary artistic output; and preliminary research aimed to address environmental sustainability in a new studio course that will enable students to better understand the global, political and social impact of artist output.

#### **LARP/CPLN 701 - ‘Designing a Green New Deal’ Studio** - Billy Fleming, Weitzman School of Design

This studio will build on work completed during the Fall 2020 iteration—a studio that began at the national-scale, gradually focusing in on three key regions (Appalachia, the Midwest, and the Mississippi Delta). It will take those three regions as its starting point, and move through a similar progression of close reading and discussion of the New Deal’s built environment legacy, a sector-based analysis of the physical assets and workforce considerations in each region (in energy, agriculture, transportation, housing, and land/water), and then a community-scale exercise in speculative design work. This iteration would be connected to real people and organizations on the ground in each region already engaged in the push for a Green New Deal. The ISAC research assistant will have three principal goals over the summer: (1) to help build and finalize the network of collaborators in each region, many of whom would be invited to Philadelphia during the course; (2) to help revise and revamp the readings and invited guests for the seminar portion of the studio; and (3) to help design the final assignments, a pop-up exhibition of work and a technical report for each region, both of which would be expected to travel or be presented in each region.

### Course Set 4

#### **ESA 242 - ‘Energy Education in Public Schools’** - Andrew Huemmler, School of Engineering and Applied Science

This Academically-Based Community Service (ABCS) course works in concert with the Netter Center for Community Partnerships and the Energy Coordinating Agency of Philadelphia to develop Lesson Plans on methods to save energy at home, indoor air quality hazards, and career pathways in the energy industry.

The ISAC research assistant will work with the School District of Philadelphia to help refine and revise lesson plans and expand the course to reach additional high schools in Philadelphia.

**ENVS 411 - ‘Air Pollution Sources and Effects in Urban Environments’** - Maria Antonia Andrews, Department of Earth and Environmental Science

This course focuses on Philadelphia’s air quality and the adverse effects of air pollutants on health of residents. How the community is exposed to air pollutants with consideration of vulnerable populations will also be considered. Students taking this course will perform environmental monitoring and teach at partner schools facilitated by the Netter Center for Community Partnerships. Student’s findings and lessons learned will be incorporated into lesson plans and delivered to students at those schools. The ISAC research assistant will assist with refining the lesson plans and help develop community-based outreach tools to effectively inform the community of West Philadelphia about air pollution to help increase in environmental health literacy of the community.

### Course Set 5

**MGMT 101 - ‘Introduction to Management’** - Aline Gatignon, the Wharton School

This core undergraduate Management course is required for all Wharton students and is a prerequisite for taking Management electives, reaching over 400 students per year. Aspects of socioenvironmental sustainability have been incorporated into sections of this course, and the ISAC research assistant will support in expanding this context to form a full module on Business and Society. Tasks will include finding most up-to-date scholarship on issues addressed in the class, supporting with the development of mini-cases and examples, and assisting in planning writing assignments.

**ACCT 102 - ‘Accounting 102: Strategic Cost Analysis’** - Mirko Heinle, the Wharton School

Accounting 102 evolves around information-based decision making; introducing students to the basics of decision making, how financial-accounting information is created along with common mistakes manager make when using this information, and the long-term financial impacts of decisions. The ISAC research assistant will support with finding the most up-to date research on sustainability decision making, find case studies to center on sustainability and the trade-off between financial and non-financial goals, and help integrate these pieces into the class.

### Course Set 6

**‘Climate Leadership’** - Sarah Light, the Wharton School

This course explores what makes a firm a leader and the role of individuals as leaders. Students taking the course will be required to complete a group oral project or paper and a key highlight of the course will be an outdoor experimental component modeled on Wharton’s Leadership Ventures. An ISAC research assistant will support with integrating an understanding of leadership theory with case studies and discussions that are of interest to students seeking to become climate and environmental leaders in the policy, business, or non-profit sector.

**'Climate Change 101'** - Sarah Light, the Wharton School

Climate Change 101 introduces undergraduate MBA students to a holistic business understanding of issues at the intersection of business, climate, and the environment from different perspectives. An ISAC research assistant will help identify case studies to be examined from multiple disciplinary lenses, assist in designing modules for teaching and assignments for course credit, and complete comparative research projects to understand what peer schools are teaching in this space. Example case study topics might include sustainable transportation, modernizing the electricity grid, financial and climate change risk, or other related topics.