

SUSTAINABILITY ENGAGEMENT CERTIFICATE PROPOSAL

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Duke University
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By

The Nicholas School of the Environment & the Sustainability Engagement Certificate Planning Committee:

Charlotte Clark, Co-Director; Assistant Professor of the Practice of Sustainability, Nicholas School of the Environment, Faculty Director of Sustainability, Duke University

Charlie Thompson, Co-Director; Professor of the Practice, Cultural Anthropology; core faculty in Documentary Studies

Tavey Capps, Director, Sustainable Duke

Marianne Drexler, Program Coordinator of Undergraduate Programs, Nicholas School of the Environment

James Ferguson, Undergraduate, Duke University, ENV Major

Linda Franzoni, Associate Dean for Undergraduate Education, Professor of the Practice, Pratt School of Engineering

Elaine Madison, Associate Director of Programs, Strategy, and Assessment, DukeEngage; Executive Director, Duke Council on Civic Engagement

Joel Meyer, Associate Professor of Environmental Toxicology, Nicholas School of the Environment

Dirk Philipsen, Senior Research Scholar, Duke Arts & Sciences; Senior Fellow, Kenan Institute for Ethics

Lee Anne Reilly, Lecturing Fellow, Thompson Writing Program

Eileen Thorsos, Sustainability Education Program Coordinator, Nicholas School of the Environment

Rebecca Vidra, Lecturer, Environmental Sciences & Policy, Nicholas School of the Environment; Director of Undergraduate Studies.

CONTENTS

Contents	2
Executive Summary	3
I. Description & Rationale.....	5
II. Detailed Description: Requirements and Curriculum	10
III. Proposed Text to Appear in the Undergraduate Bulletin	16
IV. List of Courses Available for the Sustainability Certificate.....	17
V. Description of New Courses	23
VI. Identification of Teaching Faculty.....	23
VII. Administration	25
VIII. Available Funding	27
IX. Library Resources	28
X. Assessment Plan.....	28
XI. Letters of Support.....	32
Appendices	64
Appendix A. Text of the American College and University Presidents' Climate Commitment (ACUPCC)	64
Appendix B. Sample Student Pathways	66
Appendix C. Historical List of Projects from ENVIRON 245: Theory & Practice of Sustainability, and ENVIRON 217: Food & Energy.....	73
Appendix D. Draft form to verify the student's completion of co-curricular experiences.....	87
Appendix E. Statement of Library Resources	88

EXECUTIVE SUMMARY

Baked bread [is] savory and satisfying for a single day; but flour cannot be sown and seed-corn ought not to be ground. (Goethe, Wilhelm Meister's Apprenticeship)

A world of growth—in population, in production, in consumption—faces an existential challenge: “meeting the needs of the present without compromising the ability of future generations to meet their own needs.” For global inhabitants of a finite planet, to take responsibilities toward one another, future generations, and earth’s living systems means that sustainability becomes the ethical imperative of our time.

Sustainability as a field of study, research, and practice is rapidly growing in significance. On a most fundamental level, not destroying our seed corn is about humanity’s survival. In a modern and globally interconnected world, however, sustainability addresses a much broader set of issues—nurturing the cycle of life in general. Supporting the cycle of life requires preserving a healthy biosphere as much as promoting universal human rights, economic justice, and cultures of creativity, diversity, and peace.

Understanding the challenges of sustainability demands contributions from every field. It requires collaboration and cross-fertilization between the natural and social sciences, and it depends on the perspectives of the humanities. Protecting the vitality and diversity of the earth’s ecosystems necessarily involves input not just from science and politics but also from business and civil society.

Given the growing challenges of population growth, economic disparity, ecosystem deterioration, and climate change, experts in sustainability studies are likely to become the vital leaders of tomorrow’s societies. To put Duke on the track of becoming a cross-disciplinary educational leader in sustainability studies, we propose to establish a Type 2 (experiential) Undergraduate Sustainability Engagement Certificate Program.

Several programs and initiatives that deal with aspects of sustainability already exist at Duke. We are missing, however, a concerted effort to combine and expand such efforts in order to allow students, faculty, and the community at large to learn from practitioners in different fields, realize connections, generate innovative cross-disciplinary approaches, and raise sustainability competencies among all stakeholders.

For example, one of the most visible growing areas of focus within the field of sustainability is critical food studies, which exemplifies the cross-cutting nature of sustainability topics. Sustainability and food intersect in such diverse areas as feeding the world’s population; addressing food deserts; adapting agriculture to climate change; understanding how agricultural practices, food preparation, and diet can support or diminish human and ecosystem health; and developing economic systems for affordable food that do not exploit growers or farm laborers. Indeed, each of us, every day, engages with our food supply in direct and profound ways, and every food-related topic appears to tie to a dimension of sustainability. Thus, critical food concerns are a logical entry point for many students who will focus on sustainability broadly. An upsurge of national interest in food issues, from global health and economics to psychology and documentary studies, has given rise to the Triangle University Food Studies group, Duke’s Food Working Group, and the Duke Campus Farm, a strong showing of interdisciplinary and inter-institutional interest in food. A sustainability certificate will uniquely support undergraduates in connecting food studies in their educational experiences through these diverse fields.

Sustainability studies provide a unique opportunity for students to become competent leaders in a world that has long moved past unlimited resources, a safe climate, stable populations, and continued growth. It is

a world of grave threats and unprecedented opportunities. Effectively responding to the former, and creatively embracing the latter, requires leaders well versed in the wide-ranging nature of sustainability. The Sustainability Engagement Certificate Program will provide the foundation for this core competency.

The Certificate will require four academic courses (a gateway class, two electives, and a capstone), two documented co-curricular sustainability engagement experiences (one 300+ hours, the other 150+ hours), and a public-facing ePortfolio. When students declare their participation in the program, they must identify their electives and engagement experiences and describe a coherent sustainability-related theme of their course of study. Together, the two electives and the two experiences must grapple with the combined environmental, economic, and social dimensions of sustainability. Students must receive a grade of C-minus or greater in all classes and an "Acceptable" rating in 3 of 4 learning objectives in their ePortfolio to receive the certificate.

Thirty-seven faculty members in 20 departments or programs have identified 49 existing courses as initial electives available for the sustainability certificate over the next three years. The gateway course, *ENVIRON 245: Sustainability Theory & Practice*, has been taught three times previously. The capstone *Sustainability Engagement Seminar* will be created as a new course.

The certificate will be administered by the Nicholas School of the Environment and initially co-directed by Charlotte Clark (Assistant Professor of the Practice of Sustainability, Nicholas School of the Environment, Faculty Director of Sustainability) and Charles Thompson (Professor of the Practice, Cultural Anthropology, core faculty in Documentary Studies). The certificate will be guided by a Certificate Advisory Committee with members representing academic expertise in the environmental, social, and economic dimensions of sustainability, the Trillium "Sustainability Across the Curriculum" program, the Language Arts and Media Program (LAMP), the Pratt School, and the University Sustainability Office. Each participating student will be assigned a 3-person Student Oversight Committee. Faculty from disciplines across Duke have expressed willingness to serve on the Advisory Committee (26) and/or advise students (29). Departments represented in these commitments include Biology, Community and Family Medicine, Cultural Anthropology, Documentary Studies, Economics, Law, Nicholas School (3 Divisions), Pratt, Public Policy, Romance Languages, Sociology, Thompson Writing Program, and Women's Studies.

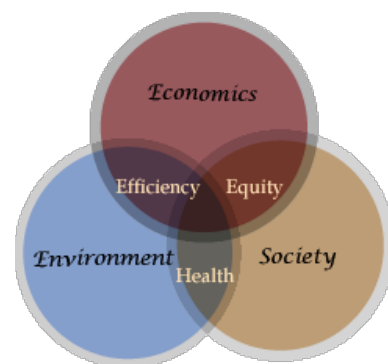
The Certificate Advisory Committee will annually assess the design and implementation of the certificate with (1) direct measures, including pre- and post-test surveys of student knowledge in the gateway course and evaluative ratings of student performance in the capstone course and on their ePortfolios; (2) indirect measures, including student course evaluations and exit surveys, faculty reflection and review, and feedback from community supervisors. This assessment will inform adjustments to the gateway, the capstone, interactions with community organizations, and other dimensions of the program to better meet the program's stated goals. After the first three years, and every five years thereafter, the committee will conduct a deeper review, including student demand over time and faculty commitment to the program; this information will inform a discussion about whether to continue or discontinue the Certificate program.

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I. DESCRIPTION & RATIONALE

Today, the original Brundtland Commission definition of sustainability as “...development that meets the needs of the present without compromising the ability of future generations to meet their own needs” is generally understood to encompass far more than just the natural environment.¹ At a minimum, scholars now consider a “triple bottom line,” which includes, in equal part, environmental, social, and economic considerations. Future prospects for humanity are inherently interrelated, and require a healthy and resourceful ecosystem, as much as a thriving civil society, political and social empowerment, and economic opportunities. Exact definitions of sustainability are thus inherently contested, will change over time, and differ by context.

The growing field of sustainability studies questions that cross and expand disciplinary boundaries. As a field that requires integrated systems analysis – revealing how actions in one of these components may support or detract from sustainable outcomes elsewhere in the system—sustainability studies draw from virtually every field of study.



Understanding and conceptualizing breakthroughs in sustainability studies derives from successfully integrating its multiple components. Exploring individual components divorced from their function in a larger system is insufficient, as it truncates critical relationships between parts of the integrated system. The Sustainability Engagement Experiential Type 2 Certificate is thus centrally designed to facilitate learning and research among students that confronts the interconnections between environmental, economic, and social aspects of sustainability. A core focus of the Certificate is to help students learn to apply interdisciplinary systems thinking in service to society professionally and in civic life after they graduate. In this context, systems thinking means that students consider not only constituent parts of various environmental and human systems but also how these systems work over time, space, and scale.

We understand that general conceptions of the word “sustainability” often privilege the environmental component to the word. Because of our strong conviction that students in the Certificate understand the importance of all three aspects, we endeavor to achieve a strong interdisciplinary nature to the Certificate, both in the operation of the Certificate and in each student’s program. We have explicitly reached out to faculty from every corner of campus to participate with the Certificate through teaching, advising, and experiential engagement. Our Certificate Advisory Committee, tasked with oversight of Certificate operation and evaluation, will always have at least one member with primary expertise and academic interest in each of the three areas of sustainability – economics, environment, and society. At least one other representative will have completed our Trillium faculty training, an annual workshop where faculty and staff mentor colleagues in infusing syllabi with concepts of sustainability. In addition, we are pleased to have integral participation from Sustainable Duke. The Director of Sustainable Duke will be on the Advisory Committee, and will take a lead in helping to identify, define, promote, and evaluate, experiences that students might engage for the Certificate. We will always look for new and emerging programs across campus that could provide fertile ground for humanities inclusion, such as the [Culture and Language Across the Curriculum program](#) (CLAC), and the new emerging initiative in the Environmental

¹ World Commission on Environment and Development (1987). *Our Common Future*. Oxford: Oxford University Press. p. 27. [ISBN 019282080X](#).

Humanities²..

Specific learning objectives of the Sustainability Engagement Certificate include the following:

1. Analyze the structure, components, and processes of natural, economic, and social systems and the interconnections between and interdependency of these systems.
2. Evaluate complex trade-offs between different dimensions of sustainability and their impact on the sustainability of the system.
3. Engage effectively with stakeholders about sustainability challenges using best practices, including collaboration, cooperation, and reciprocity.
4. Create and implement strategies to enhance the sustainability of such systems.

In the gateway and capstone courses, students will grapple with connections between all three primary dimensions of sustainability. Each student will choose a focal theme that connects these three dimensions for their electives and experiences. Sustainability involves actively living in collaboration with our surrounding communities and the natural world. Critical learning about sustainability thus must occur out of the classroom. The experiential components of the Type 2 certificate will support students as they develop skills for collaborating with stakeholders, assessing the complexities of sustainability in real-world systems, and developing and implementing effective solutions to sustainability-related challenges.

Our aim is that students will meaningfully engage with complex questions surrounding sustainability throughout their time in this certificate program. These questions include:

- What does sustainability look like in a given scenario?
- How do we understand and assess the complicated trade-offs between dimensions of sustainability to prioritize these potential impacts?
- What are challenges and pathways to true stakeholder engagement?
- How do we effectively design and implement strategies to improve the sustainability of an overarching system?

Rationale

Duke and its students will benefit from an undergraduate program that emphasizes and documents deliberate effort toward understanding and contributing to sustainability analysis and decision-making, and we do not currently have such a program. Such a certificate program will help the University achieve its stated goal of expanding sustainability education and its mission to develop students as leaders in their communities committed to high ethical standards. This certificate will also provide students a structured format within which to learn about and become leaders in sustainability and a more systematic opportunity to document their existing efforts to do so.

² The emerging initiative in the Environmental Humanities at Duke University enthusiastically supports an undergraduate certificate in Sustainability Engagement, and looks forward to participating with students whose thematic emphasis aligns with this interdisciplinary content. We look forward to listing the classes we develop for Certificate students, and to helping Certificate Directors find faculty to sit on Advisory Committees for students as appropriate. (personal communication, Priscilla Wald, 2015 03 25)

By the signature of President Brodhead on the American College and University Presidents Climate Commitment, and through our Climate Action Plan approved by the Board of Trustees, Duke University has made clear its commitment to sustainability, highlighting its decision to take actions that will make “...climate neutrality and sustainability a part of the education and other curricular experience of all students.” The Campus Sustainability Committee has an Education Subcommittee with a primary goal to make progress towards this commitment. The committee annually supports faculty training and course development to incorporate sustainability in courses throughout Duke’s campus, showcasing the multi-disciplinary nature of the field of sustainability.³ However, no undergraduate program currently integrates all dimensions of sustainability. An experiential Certificate in Sustainability at Duke University would become one key way for Duke to support students in engaging with the study and practice of sustainability.

Trinity College of Arts & Sciences and the University have missions to develop students “committed to high ethical standards and full participation as leaders in their communities” who “contribute in diverse ways to the local community, the state, the nation, and the world” and to develop in students “a deep appreciation for the range of human difference and potential [and] a sense of the obligations and rewards of citizenship.” In the certificate, applying a systems approach to complex sustainability-related challenges and better understanding the multifaceted implications of critical choices will help students make fully ethical decisions as leaders in their communities and specifically contribute to resolving some of the most important challenges our world faces.

Employers also desire and will benefit from the experiential certificate model and a sustainability engagement certificate specifically. In the American Association of Colleges & Universities 2013 annual employer survey, nearly 80% of surveyed employers believed that “complet[ing] an internship or community-based field project to connect classroom learning with real-world experiences” would help prepare students to succeed.⁴ A little more than 80% said that an ePortfolio would be very or fairly helpful in evaluating the skills and knowledge that students would bring to their organization. More than 75% of surveyed employers indicated that they would like colleges to do more to help students develop critical thinking skills and complex problem-solving skills – skills that are integral to systems thinking and addressing complex sustainability challenges. Nearly 65% of employers desired students to be better able to “connect choices and actions to ethical decisions.” A sizeable percentage (42%) believed specifically that “expecting students to explore challenges facing society, such as environmental sustainability, religious tolerance, or human rights” would help students succeed. Given the strong connection between the field of sustainability and other desired skills such as complex problem-solving and ethical decision-making, we see this data as strong support for the marketability of a Sustainability Engagement Certificate.

Student demand

Students at Duke are demonstrating their demand for opportunities to engage with issues of sustainability by participating in academic and co-curricular experiences.

Academic

- The gateway course, ENV245: “Sustainability: Theory & Practice,” has filled to capacity in the three times it has been offered over the last three academic years, with 65 students (62 Duke

³ Duke University Trillium Project: <http://sites.duke.edu/trillium/>

⁴ Hart Research Associates for the Association of American Colleges & Universities. (2013). “It takes more than a major: Employer Priorities for College Learning and Student Success”. http://www.aacu.org/leap/documents/2013_EmployerSurvey.pdf

undergraduate; 2 NSOE Masters students; 1 UNC undergraduate). Of the Duke students, 13 were in majors managed by the Nicholas School, 19 had other majors, and 30 were undeclared; non-NSOE majors have included natural and social sciences and the humanities: Biology, Computer Science, Cultural Anthropology, Economics, Engineering, English, International Comparative Studies, Mathematics, Physics, Political Science, Program II, Public Policy, and Sociology.

- Faculty who teach this and other sustainability-related courses report conversations with students who came into these courses after engagement experiences, such as DukeEngage or the Duke Campus Farm, and who seek to integrate their sustainability-related experiences and interests into a cohesive line of study not currently being met.
- The University-wide course, Critical Food Studies (CULANTH 290.03), offered for the second time this Fall, again filled rapidly to its capacity of 120 students, resulting in a long wait list.
- Between 2008 and 2014, six students developed Program II courses of study that related closely to sustainability.⁵ Because approval of a Program II course of study can be quite rigorous and difficult in Trinity, these six show a sizable commitment to these topics.

Co-curricular

- Students are actively engaged in more than 24 student and campus groups dedicated to sustainability efforts on and around Duke's campus, such as Food for Thought, Environmental Alliance, Duke Students for Sustainable Living, Campus Sustainability Fellows, and others.⁶ About 30 Dorm Eco-Reps work with Sustainable Duke each year. Annually, 350-400 students have voluntarily participated in the Green Devil Smackdown (2012 to 2014).
- The Duke Campus Farm embodies all three aspects of sustainability through a food/agriculture lens and was developed from a student class project. Between September 2013 and September 2014, over 700 undergraduate volunteers participated in community workdays; all volunteers combined—including faculty, staff, and community members—offered the farm more than 1450 volunteer hours. In the same period, the farm worked with more than 12 student class projects and two senior theses. In the 2013-2014 school year, six academic classes visited the farm, from biology to cultural anthropology to Spanish, and the farm hosted Project BUILD (56 undergraduates), an Alternative Spring Break (10 undergraduates), and a first-year Faculty Outing (23 undergraduates). Farm activities consistently receive more applicants than capacity, including around 30 applications for three student job opportunities and 18 applications for one intern position.
- In 2014, 435 Duke students participated in DukeEngage programs. Nearly all DukeEngage programs examine and address at least one dimension of sustainability; a high number engage with multiple dimensions of sustainability. To name a few, current and past programs include those in Thailand, Ecuador, Portland (OR), Peru, and coastal Louisiana.

Students also consistently seek employment opportunities after graduation in the non-profit sector and consulting sectors specifically related to sustainability. Student participation in these activities shows an

⁵ Sustainability-related Program II degrees:

- Jessica Evans-Wall, 2008, *International Conservation and Sustainable Development*.
- Skyler Stein, 2009, *Energy and Ecological Economics*.
- Megan Morikawa, 2012, *Conservation Biology and Genetics: Applied Environmental Sciences*.
- Hannah Anderson-Baranger, 2014, *Sustainable Art and Design: Ethical Creation in a Globalized World*.
- Melissa Benn, 2014, *Food Studies and Environmental Policy*.
- Rolvix Patterson, 2014, *Global Health: Disease and Medicine in Resource-Poor Settings*.

⁶ http://sustainability.duke.edu/campus_groups/