

**New York City College of Technology
Interdisciplinary Committee**

Application for Interdisciplinary Course Designation

Date November 8, 2013

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Department(s) Social Science

1. Identify the course type and title:

☒ An existing course ECON 2505 Environmental Economics

☐ A new course _____

☐ A course under development _____

2. Provide a course description This course examines current environmental issues from the perspective of several disciplines. While Economics serves as a central focus, the course draws extensively from the perspectives of Sociology, Architectural Technology, Environmental Control Technology, Hospitality Management (sustainable tourism), Civil Engineering Technology, Sustainable Technology, and Philosophy. Traditional goals of economic efficiency will be examined in the context of the need to expand renewable energy sources, green building design and construction, sustainable agriculture and trade, resource allocation and other efforts to combat climate change on a global scale. It focuses on both the long and short-term economic viability of various proposals to address current environmental challenges drawing upon the inherent interdisciplinary connection to these vital economic issues.

Each topic is linked to the theme of Economic policy and technology: Advancing the goals of sustainability.

3. How many credits will the course comprise? 3 How many hours? 3

4. What prerequisite(s) would students need to complete before registering for the course? Co-requisite(s)?

CUNY proficiency in reading and writing; ECON 1101 or ECON 1401

5. Explain briefly why this is an interdisciplinary course. The theme of the course will be how to promote sustainable economic growth, how technology, planning, design, and social and economic priorities can be applied to the goal of slowing global climate change and how working toward that goal strengthens and advances sustainable economic growth and development. The contributions of these disciplines will provide a comprehensive understanding of the subject and expose students to the knowledge and methodologies of other disciplines. Students will learn how to apply the concepts and

methods of these several disciplines to the understanding of the dimensions of global climate change and how and why they are essential in working toward the goal of sustainable economic growth.

Topics covered include (a) the global economic impact of emerging market economies and rapid industrialization; (b) the importance of sustainable land use and agricultural practices; (c) how and where investment in renewable energy and economic practices is generating measurable benefits in the U.S. economy; (d) how the expansion of sustainable building and design practices encourage renewable energy practices, reduce overall energy demand, and promote cleaner energy sources; (e) why environmental, economic and social justice are important to the goal of achieving globally sustainable growth; (f) how “fair trade” and sustainable tourism encourage and promote renewable resources and encourage sustainable economic growth; (g) how public policy initiatives can effectively promote and advance the goals of sustainable economic growth.

Each topic is linked to the theme: Economic policy and technology: Advancing the goals of sustainability.

6. What is the proposed theme of the course? What complex central problem or question will it address? What disciplinary methods will be evoked and applied?

Economic policy and technology: Advancing the goals of sustainability

What are the most effective ways to make economic decisions about resource use, trade practices, and technology choices to promote sustainable economic growth and development? The course will address the question of how technological and policy advances across disciplines can and are advancing the goal of sustainable economic practices, growth and development.

The methodologies of macroeconomic theory, as well as those of architecture, engineering, sociology, the geosciences and hospitality management, are applied to proposing and thinking about changing practices that impact the environment.

7. Which general learning outcomes of an interdisciplinary course does this course address? Please explain how the course will fulfill the bolded mandatory learning outcome below. In addition, select and explain at least three additional outcomes.

☑ Purposefully connect and integrate across-discipline knowledge and skills to solve problems

The course has the potential to connect the fundamentals of economics and varying economic theories about environmental problems to the study of several disciplines that form the substance of the topics covered in the course. A course session on *Environmental, economic and social justice* could draw upon the discipline of Sociology which could address this topic in the context of the broader issues of who controls access to resources and how they are used, the problems of economic and social inequality, and environmental racism. The topic of *Green building design, construction, engineering and architecture* could link economically efficient design features to the disciplines of Architecture and Engineering, wherein faculty expertise would provide clear illustrations of and the technology behind efficient and environmentally sound design practices. Thus, the topics covered in the course would require an understanding of how the knowledge and tools of these and other disciplines contribute to a broad-based perspective on the course theme—Economic policy and technology: Advancing the goals of sustainability—and encourage the development of a multidisciplinary approach to problem solving.

☒ **Synthesize and transfer knowledge across disciplinary boundaries**

Having already taken an introductory level economics class (ECON 1101 or ECON 1401), students should have a basic foundation in the discipline. The introduction of the wide range of issues and problems covered in this course that are directly linked to other disciplines, including the Geosciences, Sociology, Architecture, Engineering, and Hospitality Management, would expose students to the knowledge and methodologies of these other disciplines whose perspectives and knowledge are connected to the issues of Environmental Economics. Much of this knowledge would be critical to the development of a more comprehensive understanding of the issues and challenges that are central to Environmental Economics; potentially, students' perspectives would be significantly expanded.

☐ Comprehend factors inherent in complex problems

☐ Apply integrative thinking to problem solving in ethically and socially responsible ways

☒ **Recognize varied perspectives**

Students will develop an understanding of and ability to apply the diverse perspectives within sustainability/environmental economics; they will develop a respect for diverse viewpoints and apply the skills and concepts that are the foundation of other disciplines regarding the issues and questions that are central to Environmental Economics.

☐ Gain comfort with complexity and uncertainty

☒ **Think critically, communicate effectively, and work collaboratively**

Students will develop and identify a range of tools from both environmental economics and other related disciplines that can be applied to solving real-world environmental challenges that impact the U.S. economy. They would work creatively with others in group problem solving, discussions and assigned projects, and should be able to express ideas orally and in written assignments.

☒ **Become flexible thinkers**

Students will be able to apply the skills and methods of inquiry acquired in the course to build upon an understanding of environmental issues and sustainability that crosses disciplinary boundaries, both in the social sciences and in other specifically related disciplines. This will require and encourage creative thinking about diverse approaches to problems and their solutions.

☐ Other

General Education Learning Goals for City Tech Students

- **Knowledge:** Develop knowledge from a range of disciplinary perspectives, and hone the ability to deepen and continue learning.
- **Skills:** Acquire and use the tools needed for communication, inquiry, creativity, analysis, and productive work.
- **Integration:** Work productively within and across disciplines.
- **Values, Ethics, and Relationships:** Understand and apply values, ethics, and diverse perspectives in personal, professional, civic, and cultural/global domains.

8. How does this course address the general education learning goals for City Tech students?

- **Knowledge:** To develop an understanding of the key concepts that relate to environmental economics and to be able to synthesize and apply the tools and knowledge of other disciplines to the understanding of the central topics and theories of how to address environmental problems through economic policy.
- **Skills:** To develop and apply the tools of environmental economics from an interdisciplinary perspective; to be able to critically question, analyze, and discuss environmental economic problems and issues; to develop and strengthen the ability to discuss and analyze concepts and thoughts orally and in writing.
- **Integration:** To be able to apply the tools acquired from Economics and from the many related disciplines introduced in the course; to be able to build upon an understanding of environmental issues and sustainability across disciplines.
- **Values, Ethics, and Relationships:** To develop an understanding of and ability to apply diverse perspectives to the understanding of sustainability/environmental economics; to work creatively with others in group problem solving; to develop a respect for diverse viewpoints and apply the skills and concepts covered in the course to the analysis of related issues and concepts across other disciplines.

9. Which department would house this course¹? Social Science

Would all sections of the course be interdisciplinary? ☒ No ☐ Yes

a) Would the course be cross-listed in two or more departments? ☒ No ☐ Yes
Explain.

b) How will the course be team-taught²? ☐ Co-taught ☒ Guest lecturers ☐ Learning community

If co-taught, what is the proposed workload hour distribution? _____

☐ Shared credits ☐ Trading credits

If guest lecturers, for what approximate percentage of the course? ☒ Minimum 20%³ ☐ other: __%

Please attach the evaluation framework used to assess the interdisciplinarity of the course.⁴

¹ An interdisciplinary course for the College Option requirement may be housed in a department that is not liberal arts.

² Attach evidence of consultation with all affected departments.

³ While an interdisciplinary course must be team-taught, there is no formal percentage requirement, but this minimum is a guideline.

⁴ In the case that a course is equally taught, include proposed plans for faculty classroom observation and student evaluation of teaching.

Three written assignments (2 pages maximum) will be required during the semester. These will draw specifically on the perspectives of the guest lecturers, posing one or two questions that encapsulate the main issues covered in the class. Examples of such an assignment might include the following:

Following a guest lecturer's presentation on *Environmental, economic and social justice* from a Sociological perspective, a written assignment would draw upon the connections between the Sociological and Economic perspectives on this issue and how they inform our understanding of how to advance the goals of sustainability. In this written assignment, students will be asked to connect the sociological perspective on the challenges to environmental, economic and social justice to the course theme of Economic policy and technology: Advancing the goals of sustainability. This topic could be addressed in the context of the broader issues of who controls access to vital resources and how they are used, the roots of economic and social inequality and the obstacles these have posed to advancing the goals of sustainable economic growth.

A short written assignment or group assignment (i.e., one page) following each class session in which students are required to think about how the topics covered each week covered that week could be addressed by incorporating/employing at least some of the methodology or concepts from the perspective of the discipline presenting that week. The assignments would pose one or two questions that encapsulate the main issues covered in the class. Assignments would draw upon the perspectives of the guest lecturers.

Completion of a group semester research project and presentation which will include a final paper of approximately 3-4 pages. Students would be encouraged to think about a topic/problem employing the themes of economics and at least one of the other disciplines covered in the guest lectures. Students completing the project will be provided with questions that should be addressed and which will explicitly require students to make the connections between the

A midterm exam in which students must answer short essay questions. For example, each of the 3 to 4 questions would require students to address a particular issue/topic related to the perspectives of the guest lecturers, and would be asked to discuss the connections between a key economic concept and that of another discipline introduced in one of the guest lectures. As an example, a question might ask students to analyze a particular problem in environmental economics covered in class and to consider solutions that would draw upon both the economic perspective and that of a particular guest lecturer.

- c) What strategies/resources would be implemented to facilitate students' ability to make connections across the respective academic disciplines?
- Readings from across the range of disciplines that are tied to Environmental Economics (including those that guest lecturers may assign).
 - Guest lecturers address a topic from their perspective followed by class discussion and questions that encourage students to make connections between the disciplines. For instance, *Sustainable Land Use* policies discussed from the perspective of a guest lecturer on the topic of *Sustainable Tourism* (a course is offered in Hospitality Mgmt – HMGT 4983) could lead to a class discussion on the importance of sustainable resource use and practices on a global scale, or sustainable tourism as a tool to achieving the goal of renewable natural resources.

Another example might be the topic of *Economic and Human Costs of Global Climate Change* discussed from the perspective of a guest lecturer in Environmental Science (i.e., ESCI 1210) could lead to a class or group discussion of the costs of farmland loss, droughts, and climate change, etc. from a scientific as well as an economic perspective.

- Following guest lecturer presentations and class discussions, time will be allotted for focused discussions on how subject matter/issues/questions introduced in the lecturer's topic connect with an economic analysis of the subject. How can the tools of analysis be applied from an Economic perspective?
- Students will have a choice of three written assignments prepared by the guest lecturers in the course. In addition, students will be assigned small group presentations scheduled toward the end of the semester. They will present based upon their choice of similar topics. A choice of topics will be offered that reflect the perspectives of Economics and of each of the guest lecturers. The group presentations will be based upon students' common interest in a similar topic area.

10. Would the course be designated as:

☒ a College Option requirement⁵? ☒ an elective? ☐ a Capstone course⁶? ☐ other? Explain.

⁵ To qualify for the College Option, such a course must also meet the New York State definition of a liberal arts and sciences course.
<http://www.highered.nysed.gov/ocue/lrp/liberalarts.htm>

⁶ A course proposed as a Capstone course must be separately approved by the Capstone Experience Committee.