New York City College of Technology, CUNY

CURRICULUM MODIFICATION PROPOSAL FORM

This form is used for all curriculum modification proposals. See the Proposal Classification Chart for information about what types of modifications are major or minor. Completed proposals should be emailed to the Curriculum Committee chair.

Title of Proposal	Academic Minor in Environmental Studies
Date	November 23, 2020
Major or Minor	Major
Proposer's Name	Sean P MacDonald
Department	Social Science
Date of Departmental Meeting in which proposal was approved	2/4/21
Department Chair Name	Peter Parides
Department Chair Signature and Date	Peter Parides
Academic Dean Name	Justin Vazquez-Poritz
Academic Dean Signature and Date	Justin Vazquez-Poritz 8/20/21
Brief Description of Proposal (Describe the modifications contained within this proposal in a succinct summary. More detailed content will be provided in the proposal body.	Proposing the creation of an academic minor in Environmental Studies based on existing courses

Brief Rationale for Proposal (Provide a concise summary of why this proposed change is important to the department. More detailed content will be provided in the proposal body).	Environmental Studies as an academic minor course of study offers students the opportunity to explore environmental topics and issues from across a broad number of disciplines. Offering Environmental Studies as an academic minor would also allow students' work to be recognized on their official transcripts while providing an opportunity for them to explore a range of questions connected to environmental practice and policy, to deepen their knowledge, and strengthen their inquiry beyond their major fields of study.
Proposal History (Please provide history of this proposal: is this a resubmission? An updated version? This may most easily be expressed as a list).	This is a new submission. The proposal is revised on 9/3/2021.

Please include all appropriate documentation as indicated in the Curriculum Modification Checklist. For each new course, please also complete the New Course Proposal and submit in this document. Please submit this document as a single .doc or .rtf format. If some documents are unable to be converted to .doc, then please provide all documents archived into a single .zip file.

ALL PROPOSAL CHECK LIST

Completed CURRICULUM MODIFICATION FORM including:	
• Brief description of proposal	x
• Rationale for proposal	x
• Date of department meeting approving the modification	x
• Chair's Signature	x
• Dean's Signature	x
Evidence of consultation with affected departments List of the programs that use this course as required or elective, and courses that use this as a prerequisite.	x
Documentation of Advisory Commission views (if applicable).	
Completed Chancellor's Report Form.	

EXISTING PROGRAM MODIFICATION PROPOSALS

Documentation indicating core curriculum requirements have been met for new programs/options or program changes.	
Detailed rationale for each modification (this includes minor modifications)	

Proposal for an Academic Minor in Environmental Studies Sponsored by the Social Science Department

Rationale

Each of the eleven Senior Colleges within CUNY grants a wide range of academic minors. A working group of the General Education Committee recently recommended that City Tech students would be best served by the creation of new academic minors offering students from various academic majors and departments the possibility of supplementing their academic major curriculum with an additional area of focus. City Tech now currently grants academic minors in Black Visual Cultures, Art History and Visual Culture, Theater Studies, Gender and Sexuality Studies, Physics, Psychology, and Business. The proposed new minor in Environmental Studies would complement a number of major fields of study by offering a timely focus on environmental and sustainability issues and practices.

Description of the Proposed Academic Minor

The proposed Environmental Studies minor will be housed in the Social Science Department and will include courses from Economics, Sociology, Physics, Architecture, Hospitality Management, and Interdisciplinary Studies. Environmental Studies as a minor course of study offers students the opportunity to explore environmental topics and issues from a cross-disciplinary perspective. At the same time, it can inform the development of a critical lens on students ’own major fields of study in majors such as Hospitality Management, Electrical and Telecommunications Engineering Technology, and Architectural Technology.

Topics include an examination of the relationship of individuals, communities and societies to the natural environment, the nature of technological change and its ecological impacts, the development of environmental policy, and the effects of mass production and the consumer-driven economy on the environment. Also explored are the evolution of current environmental problems such as industrial agriculture, resource use and scarcity, habitat/ecosystem loss, and the economic and environmental impacts of fossil-fuel-based energy use and the connection of these issues to the understanding of climate change. The minor also offers students the opportunity to study and evaluate sustainable alternative paths and policies for resource allocation, economic and social development, energy sources, food systems, and building design and construction practices.

Currently, five of CUNY’s senior colleges offer a minor in environmental studies. Given the number and variety of courses offered across departments within City Tech that offer a focus on sustainability across a range of disciplinary perspectives, a minor in Environmental Studies could be informative and beneficial for students preparing for a variety of careers, including those in hospitality, engineering and architecture.

An academic minor in Environmental Studies will be available to all students in four-year degree programs. It will require the completion of a minimum of 12 credits from the General Education Flexible Core and College Option requirements. Students enrolled in the Academic Minor must have a grade of 2.0 or higher for all courses used to earn the academic Minor.

Professor Sean MacDonald will serve as the Academic Minor coordinator for the proposed minor.

Culminating Project

One course in the academic minor should constitute a culminating research project. Students electing the minor can designate this course, or it may be recommended during the advisement process. Students in this course will conduct a mentored research project during the semester with the faculty member teaching the course. Ideally, this would include the design and presentation of a poster project as part of the semi-annual City Tech Undergraduate Poster Presentation.

The project and/or research poster may be completed as a project within the Honors Scholars Program, Emerging Scholars Program, CUNY Research Scholars (CRSP), Louis Stokes Alliance for Minority Participation (LSAMP) Program, the annual Ecofest program held in conjunction with Earth Day, or other undergraduate research programs. The student should pursue the project with a mentor/professor who has taught any of the courses in the minor. They may choose to participate in the project while completing any of the courses in the minor, and this course would constitute the culminating experience. However, it is highly recommended that the project be undertaken after completion of at least two or three of the courses in the minor. The purpose is for students to effectively integrate knowledge, experience, and perspectives across disciplinary boundaries and disciplines.

The Environmental Studies minor will be housed in the Social Science Department. While the courses listed here meet the requirements for the minor, it is also understood that as new courses are created, they may be added to this list. However, a certain percentage of any course in the minor should clearly be dedicated to sustainability issues.

Students electing the minor will meet with the minor coordinator to plan course selections each semester. Students will also confirm, after consultation with the faculty member teaching the course in which they would like to conduct research for the culminating project, that the faculty member will be willing to mentor their research project.

REQUIRED COURSES for THE MINOR: General Education Flexible Common Core and College Option Requirements

• 12 credits chosen from:

GEOG 1101: Elements of Physical Geography (3 cr) Scientific World; (Prereq: CUNY Proficiency in English)

A survey of key elements of physical geography presented in the context of human activity and its relation to the physical world. Topics include world surface features, climate and weather, the seas, and natural resources.

ECON 2505ID: Environmental Economics (3 cr) World Cultures and Global Issues; Writing Intensive; Interdisciplinary; (Prereq: ECON 1101 or ECON 1401)

This course examines current environmental issues from a macroeconomic perspective, focusing on both the long- and short-term economic viability of various proposals to address current environmental challenges. Traditional goals of economic efficiency are examined in the context of the need to expand renewable energy sources, green design, sustainable construction and resource allocation and other efforts to combat climate change on a global scale.

ESCI 1110: Environmental Science I (3 cr) Scientific World; Pre/corequisite: (ENG 1101 or ENG 1101CO or ENG 1101ML) and (MAT 1190 or MAT1190CO or higher)

An introductory environmental science course. Topics include energy; ecosystems; solid and hazardous waste; pressure and temperature; volume, mass and flow; population growth; global warming; environmental management and economics. Maps, GIS, and the visualization of scientific information are emphasized.

ESCI 2000ID: Energy Resources (3 cr) Prerequisite: (ENG 1101 or ENG 1101CO or ENG 1101ML) and (MAT 1275 or MAT1275CO or higher)

This special topics interdisciplinary course surveys various energy resources: hydropower, solar, wind, geothermal and natural gas. Students learn about the scientific process of energy production and its applications. Students explore economic, social, political, and environmental impacts.

ESCI 1210: Environmental Science II (3 cr) Scientific World; (Prereq: ENG 1101/CO/ML and MAT 1190/CO or higher)

An introductory environmental science course. Topics include energy; ecosystems; solid and hazardous waste; pressure and temperature; volume, mass and flow; population growth; global warming; environmental management and economics. Maps, GIS, and the visualization of scientific information are emphasized.

SOC 3302ID: Environmental Sociology (3 cr) Individual and Society; (Prereq: ENG 1101/CO/ML and any SOC or ANTH course)

This course examines the complex interactions between societies and the natural environments on which they depend. Special emphasis is placed on the link between the deepening ecological crisis and the operation of the capitalist socio-economic system.

HIS 3310: Environmental History of North America (3 cr) U.S Experience in its Diversity; (Prereq: ENG 1101/CO/ML and previous HIS course)

This course looks at the role of nature in the unfolding of American history from prehistory to the present. Focusing on both human-induced environmental change and nature's impact on human development, we will examine large-scale changes in the earth's environmental systems that have accompanied historical changes in culture, society, economics, politics, and technology.

PHIL 3400: Environmental Philosophy (3 cr) Individual and Society; (Prereq: Previous PHIL course)

Study of selected global environmental issues (e.g., population, planetary warming, bio-diversity loss, world hunger, sustainable development, pollution, etc.) by means of philosophical analysis of the concepts, arguments and values involved in their discussion.

PHYS 1002ID: Introduction to the Physics of Natural Disasters (3 cr) Interdisciplinary; (Prereq: MAT 1190/CO or higher)

A course for non-science majors that focuses on natural disasters and the dynamic Earth processes that control them. It integrates the principles of geology, meteorology, climatology, oceanography, and astronomy to provide rudimentary understanding of geophysics. Students learn about the nature, causes, risks, impacts, and prediction of natural disasters including hurricanes, earthquakes, volcanoes, tsunamis, and climate change. Laboratory exercises are incorporated with class work to illustrate and supplement the lecture material.

ARCH 3551: Sustainability: History and Practice (3 cr) Elective; Prereq: ENG 1101/CO/ML and completion of 45 credits)

Sustainability describes an approach to the design, construction and stewardship of products and environments that align human need and ecological resourcefulness. This course focuses on built work of the last 200 years that grew from a new consciousness of ecological limits, living system dynamics and understanding of human well-being. The practice of sustainability has developed numerous and sometimes competing logics. This course explores how sustainable criteria are influenced by outlook (and selfinterest) and how the prioritization of health, social agendas, economics, aesthetics, environmental protection or resource efficiency have shaped selected buildings, landscapes and city plans.

Programmatic Learning Outcomes

Students will:

- Acquire knowledge of key issues and trends in sustainability, climate policy and environmental issues in their social, economic and scientific contexts
- Synthesize and evaluate information from diverse disciplinary perspectives to describe and interpret and critically examine information about environmental issues, practices and policies across disciplinary boundaries.
- Effectively communicate ideas and concepts orally, visually and in writing

- Work collaboratively with others
- Purposely connect and integrate cross-discipline knowledge and skills to solve problems.

An Academic Minor in Environmental Studies can be completed in all BS degrees and most BTech degrees within the required credits of the degree program.

Sample Curriculum Map

Below is a sample curriculum map for a student majoring in Architectural Technology with a minor in Environmental Studies:

Gen Ed Requirements for Architectural Technology	**Courses for Proposed Academic Minor**
Scientific World	GEOG 1101
Interdisciplinary Course	PHYS 1002ID
World Cultures and Global Issues	ECON 2505ID
Individual and Society	SOC 3302ID or PHIL 3400

Diversity and Inclusive Education Syllabus Statement

This course welcomes students from all backgrounds, experiences and perspectives. In accordance with the City Tech and CUNY missions, this course intends to provide an atmosphere of inclusion, respect, and the mutual appreciation of differences so that together we can create an environment in which all students can flourish. It is the instructor's goal to provide materials and activities that are welcoming and accommodating of diversity in all of its forms, including race, gender identity and presentation, ethnicity, national origin, religion, cultural identity, socioeconomic background, sexuality and sexual orientation, ability, neurodivergence, age, and etc. Your instructor is committed to equity and actively seeks ways to challenge institutional racism, sexism, ableism and other forms of prejudice. Your input is encouraged and appreciated. If a dynamic that you observe or experience in the course concerns you, you may respectfully inform your instructor without fear of how your concerns will affect your grade. Let your instructor know how to improve the effectiveness of the course for you personally, or for other students or student groups. We acknowledge that NYCCT is located on the traditional homelands of the Canarsie and Lenape peoples.

Proposed academic minor in environmental studies: Support

From: German Kolmakov
Sent: Sunday, November 29, 2020 4:29:39 PM
To: Sean Macdonald
Cc: Peter Parides
Subject: Re: Proposed academic minor in environmental studies

Dear Peter and Sean,

Thank you for sending me the proposal. I find it very interesting and I am enthusiastically supporting it. With no doubts, your minor in environmental studies will be extremely useful for our City Tech undergraduate students. And I am sure, it will be demanded by our Applied Computatational Physics students.

All best wishes,
German

From: Sanjive Vaidya
Sent: Wednesday, December 2, 2020 10:18:49 PM
To: Sean Macdonald
Cc: Peter Parides
Subject: Re: Proposed academic minor in environmental studies

Hi Sean ,
Thank you for doing this! I'm very keen to have more interdisciplinary integration between faculty and students. Minors are a good venue for doing so. Can you give me a deadline for this letter. I'm in the hotseat right now with registration and course assignments!

Thanks,
Sanjive
Sanjive S. Vaidya
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15 December 2020

Sean P. MacDonald, PhD.
Professor of Economics
Department of Social Science
New York City College of Technology
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RE: Letter of Support for the Proposal of a Minor in Environmental Studies submitted by the Department of Social Science, prepared by Dr. Sean MacDonald.

Dear Dr. MacDonald,

I write this note in strong support of the curriculum proposal submitted by your department to create a minor in Environmental Studies. It is important that students in all majors at City Tech, and particularly those in the Department of Architectural Technology, increase their awareness and fluency with the principles of environmental practice and policy. This is an inevitable step toward empowerment of students whose future careers are directly affected by the forces behind urban development and construction. An examination of the "*relationship of individuals, communities and societies to the natural environment…the development of environmental policy, and the effects of mass production and the consumer-driven economy on the environment*" are timely and relevant for our student demographic.

The New York Building Congress estimated construction spending in New York City at $56 billion in 2020. This is a historic sum which should inform those studying design and planning. It indicates opportunities and growth as students customize their academic plans within our department's revised four year B.Tech degree. The proposed minor offers students an "*opportunity to study and evaluate sustainable alternative paths and policies for resource allocation, economic and social development, energy sources, food systems, and building design and construction practices*"

It creates agency and underpins our departments efforts to fortify student leadership skills.

Sincerely,

Sanjive S. Vaidya
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