This form is to be used when proposing a new CAS or GRS course.

This form should be submitted to Senior Academic Administrator Peter Law (617-353-7243) as a PDF file to pgl@bu.edu. For further information or assistance, contact Associate Dean Susan Jackson (617-353-2410; sjackson@bu.edu) about CAS courses or Associate Dean Jeffrey Hughes (617-353-2690; hughes@bu.edu) about GRS courses.

DEPARTMENT OR PROGRAM: Earth & Environment DATE SUBMITTED: September 12, 2016

COURSE NUMBER: GRS GE 710 (cross listed: GRS IR 710)

COURSE TITLE: Scientific Assessments of Environmental Issues: Process and Evaluation

INSTRUCTOR(S): A.C. Janetos

TO BE FIRST OFFERED: Sem./Year: Spring/2017

SHORT TITLE: The “short title” appears in the course inventory, on the Link University Class Schedule, and on student transcripts and must be 15 characters maximum including spaces. It should be as clear as possible.

| S | C | ! | A | S | S | E | S | S | M | E | N | T |

COURSE DESCRIPTION: This is the description that appears in the CAS and/or GRS Bulletin and The Link. It is the first guide that students have as to what the course is about. The description can contain no more than 40 words.

A seminar on the history, practice, and evaluation of scientific assessments of environmental issues. Examples include stratospheric ozone, climate change, and biodiversity. Assessments will be examined as scientific communications challenges and criteria for their success or failure will be discussed.

PREREQUISITES: Indicate “None” or list all elements of the prerequisites, clearly indicating “AND” or “OR” where appropriate. Here are three examples: “Junior standing or CAS ZN300 or consent of instructor”; “CAS ZN108 and CAS ZN203 and CAS PQ206; or consent of instructor”; “For SED students only.”

1. State the prerequisites: Graduate students only

2. Explain the need for these prerequisites: This course assumes that students already have a graduate-level grasp of the scientific issues, and will build on that in order to examine whether or not the assessment process results in adding significant value to the policy process.
CREDITS: (check one)

☑ Half course: 2 credits
☐ Variable: Please describe.
☐ Full course: 4 credits
☐ Other: Please describe.

Provide a rationale for this number of credits, bearing in mind that for a CAS or GRS course to carry 4 credits, 1) it must normally be scheduled to meet at least 150 minutes/week, AND 2) combined instruction and assignments, as detailed in the attached course syllabus, must anticipate at least 12 total hours/week of student effort to achieve course objectives.

The course will meet once a week for 150-minutes. It requires multiple in-depth reading assignments per week, three short papers throughout the semester, and one final group project. Class readings are anticipated to require 4 hours per week. Short papers are anticipated to require 10-12 hours each. The Final project, including conceptualization, research, and write up, are anticipated to require 28 hours over the entire course (or 2 hours per week). By requiring 3 hours of in-class meeting time and 6-8 hours of external effort per week this course meets, and indeed exceeds the CAS standards for a 4-credit course.

DIVISIONAL STUDIES CREDIT: Is this course intended to fulfill Divisional Studies requirements?

☑ No.
☐ Yes. If yes, please indicate which division __________________________ and explain why the course should qualify for Divisional Studies credit. Refer to criteria listed here and specify whether this course is intended for “short” or “expanded” divisional list.

HOW FREQUENTLY WILL THE COURSE BE OFFERED?

☐ Every semester ☐ Once a year, fall ☐ Once a year, spring ☐ Every other year
☐ Other: Explain:

NEED FOR THE COURSE: Explain the need for the course and its intended impact. How will it strengthen your overall curriculum? Will it be required or fulfill a requirement for degrees/majors/minors offered by your department/program or for degrees in other departments/school/colleges? Which students are most likely to be served by this course? How will it contribute to program learning outcomes for those students? If you see the course as being of “possible” or “likely” interest to students in another departments/program, please consult directly with colleagues in that unit. (You must attach appropriate cognate comments using cognate comment form if this course is intended to serve students in specific other programs. See FURTHER INFORMATION below about cognate comment.)

The process of scientific assessments of important and challenging environmental issues has emerged over the past 30 years as a primary mechanism of communication between scientific and technical experts with policy communities and constituents. Such examples as the Intergovernmental Panel on Climate Change and the World Meteorological
Organization’s Stratospheric Ozone Assessments, however, build on much longer traditions of ways in which scientists communicate with policy makers on issues of concern. This course will examine the history of these interactions, place the new scientific assessment processes in an appropriate context, and examine the challenge of how such efforts should be evaluated. Students will be expected to become familiar with the broad outlines of both the underlying scientific issues and possible policy responses, analyze the assessments as both representative of scientific consensus and as communications exercises, and develop judgments about different ways in which such assessments could be conducted, as well as which issues lend themselves well to such approaches.

This course is needed as part of the merger of the former Earth Science and Geography Departments. The course represents the integration of the natural and social sciences, and represents a true blend of the former departments. It provides students with state-of-the-art, interdisciplinary coursework in the rapidly evolving field of scientific assessments. We envision this course will be a popular elective for PhD and MA students in our Department, including biogeoscience students, as well as students in the Pardee School.

Last year, the Department focused on developing a new undergraduate program that blended the two departments. This year, our emphasis is on our graduate curriculum. This course, and others in development, represents our first efforts to strengthen and broaden our graduate program by bridging natural and social sciences centered on the theme of global change. We envision this elective will be popular among our current and prospective students.

Classes will be a combination of lectures and discussion of readings. Evaluation will be a function of participation in discussion (25%), short papers (25%), and a final group project (50%). Preference will be given to graduate students and upper-level undergraduates.

ENROLLMENT: How many undergraduate and/or graduate students do you expect to enroll in the initial offering of this course?

10-15 students

CROSS-LISTING: Is this course to be cross-listed or taught with another course? If so, specify. Chairs/directors of all cross-listing units must co-sign this proposal on the signature line below.

See attached cognate approval form.
OVERLAP:

1. Are there courses in the UIS Course Inventory (CC00) with the same number and/or title as this course?
   - No.
   - Yes. If yes, any active course(s) with the same number or title as the proposed course will be phased out upon approval of this proposal.
   
   NOTE: A course number cannot be reused if a different course by that number has been offered in the past five years.

2. Relationship to other courses in your program or others: Is there any significant overlap between this course and others offered by your department/program or by others? (You must attach appropriate cognate comments using cognate comment form if this course might be perceived as overlapping with courses in another department/program. See FURTHER INFORMATION below.)

   There are no overlaps of this course with other offerings in either Earth and Environment or the Pardee School.

FACILITIES AND EQUIPMENT: What, if any, are the new or special facilities or equipment needs of the course (e.g., laboratory, library, instructional technology, consumables)? Are currently available facilities, equipment, and other resources adequate for the proposed course? (NOTE: Approval of proposed course does not imply commitment to new resources to support the course on the part of CAS.)

Current facilities are adequate. A Teaching Fellow is not required at this time unless enrollments vastly exceed expectations.

STAFFING: How will the staffing of this course, in terms of faculty and, where relevant, teaching fellows, affect staffing support for other courses? For example, are there other courses that will not be taught as often as now? Is the staffing of this course the result of recent or expected expansion of faculty? (NOTE: Approval of proposed course does not imply commitment to new resources to support the course on the part of CAS.)

This course will be taught by Prof. Anthony Janetos. The staffing of this course will in no way affect the staffing of other courses.

BUDGET AND COST: What, if any, are the other new budgetary needs or implications related to the start-up or continued offering of this course? If start-up or continuation of the course will entail costs not already discussed, identify them and how you expect to cover them. (NOTE: Approval of proposed course does not imply commitment to new resources to support the course on the part of CAS.)

None.
EXTERNAL PROGRAMS: If this course is being offered at an external program/campus, please provide a brief description of that program and attach a CV for the proposed instructor.

n/a

FURTHER INFORMATION THAT MUST BE ATTACHED IN ORDER FOR THIS PROPOSAL TO BE CONSIDERED:

- A complete week-by-week SYLLABUS with student learning objectives, readings, and assignments that reflects the specifications of the course described in this proposal; that is, appropriate level, credits, etc. (See guidelines on “Writing a Syllabus” on the Center for Excellence & Innovation in Teaching website.) Be sure that syllabus includes your expectations for academic honesty, with URL for pertinent undergraduate or GRS academic conduct code(s).

- Cognate comment from chairs or directors of relevant departments and/or programs. Use the form here under “Curriculum Review & Modification.” You can consult with Susan Jackson (CAS) or Jeffrey Hughes (GRS) to determine which departments or programs inside and outside of CAS would be appropriate.

DEPARTMENT CONTACT NAME AND POSITION: David Marchant, Chair.

DEPARTMENT CONTACT EMAIL AND PHONE: MARCHANT@BU.EDU 353-3236

DEPARTMENT APPROVAL: ____________________________________________  ________

Department Chair

Date

________________________________________  ________

Other Department Chair(s) (for cross-listed courses)

Date
DEAN’S OFFICE CURRICULUM ADMINISTRATOR USE ONLY

CAS/GRS CURRICULUM COMMITTEE APPROVAL:

☐ Approved  Date: ____________________
☐ Tabled    Date: ____________________
☐ Not Approved  Date: ____________________

Divisional Studies Credit:
☐ Endorsed
  ☐ HU
  ☐ MCS
  ☐ NS
  ☐ SS
☐ Not endorsed

______________________________________________________________
Curriculum Committee Chair Signature and Date

Comments:

PROVISIONAL APPROVAL REQUESTED for Semester/Year ____________________

______________________________________________________________
Dean of Arts & Sciences Signature and Date

Comments:

CAS FACULTY:  Faculty Meeting Date: ____________________  ☐ Approved  ☐ Not Approved

______________________________________________________________
Curriculum Administrator Signature and Date

Comments:
Scientific Assessments of Environmental Issues:  
Process and Evaluation

Mondays 2:30-5:15  
Instructor: A.C. Janetos  
ajanetos@bu.edu   (617) 358-4000  
Office: Pardee Center, 67 Bay State Rd, hours TBD

Course Description and Objectives
The process of scientific assessments of important and challenging environmental issues has emerged over the past 30 years as a primary mechanism of communication between scientific and technical experts with policy communities and constituents. Such examples as the Intergovernmental Panel on Climate Change and the World Meteorological Organization’s Stratospheric Ozone Assessments, however, build on much longer traditions of ways in which scientists communicate with policy makers on issues of concern.

This course will examine the history of these interactions, place the new scientific assessment processes in an appropriate context, and examine the challenge of how such efforts should be evaluated. Students will:

• be expected to become familiar with the broad outlines of both the underlying scientific issues and policy responses,
• analyze the assessments as both representative of scientific consensus and as communications exercises,
• develop judgments about different ways in which such assessments could be conducted, as well as which issues lend themselves to various approaches.

Classes will be a combination of lectures, discussion, and readings.

Evaluation will be a function of

• participation in discussion (25%),
• three short papers (25%), and
• a final group project (50%).

Details provided in class.
## Course Calendar

<table>
<thead>
<tr>
<th>Day</th>
<th>Topic</th>
<th>Reading</th>
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</thead>
<tbody>
<tr>
<td>Jan 22</td>
<td>What is a scientific assessment?</td>
<td>none</td>
</tr>
<tr>
<td>Jan 29</td>
<td>Salience, legitimacy, credibility</td>
<td>Cash et al, Cash and Clark</td>
</tr>
<tr>
<td>Feb 5</td>
<td>Case 1: Stratospheric Ozone</td>
<td>Assessment for Decision-Makers 2014</td>
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<tr>
<td>Feb 12</td>
<td>Case 2: Climate Change Science – IPCC</td>
<td>Working Group 1 SPM</td>
</tr>
<tr>
<td>Feb 12</td>
<td><strong>Short Paper #1 Due:</strong></td>
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<tr>
<td></td>
<td>1) Compare the international assessment processes for science in stratospheric ozone and climate change – Where has the IPCC relied on the ozone assessment as a model, and was that appropriate?</td>
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<td></td>
<td>2) What features make an environmental issue appropriate for a scientific assessment approach?</td>
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<tr>
<td>Feb 19</td>
<td>Case 2: Climate Change Impacts – IPCC</td>
<td>Working Group 2 SPM</td>
</tr>
<tr>
<td>Feb 26</td>
<td>Case 2: Climate Change Mitigation – IPCC</td>
<td>Working Group 3 SPM</td>
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<tr>
<td>March 4</td>
<td>Case 2: Evolution of the IPCC Synthesis</td>
<td>Working Group 1 SPM’s of all 5 IPCC Assessments</td>
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<tr>
<td>Mar 18</td>
<td>Case 3a: US National Climate Assessment 1</td>
<td>Overview of First US Climate Assessment</td>
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<tr>
<td>Mar 25</td>
<td>Case 3b: US National Climate Assessment - Synthesis and Assessments and Second National Climate Assessment</td>
<td>Second National Climate Assessment</td>
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<tr>
<td>Apr 1</td>
<td>Case 3c: US National Climate Assessment 3</td>
<td>Highlights of Third National Climate Assessment</td>
</tr>
</tbody>
</table>
Apr 8  Case 3d: Future US Climate Assessment  
Process  
none

Apr 15  Case 4: Global Biodiversity Assessment  
and the Millennium Ecosystem Assessment  
MEA Summary

Apr 15  Short Paper #3 Due
1) What are the most important differences between the international 
assessment process and the US national process?
2) Compare the processes and outcomes of the Global Biodiversity Assessment 
and the Millennium Ecosystem Assessment.

Apr 22  Consultation on Group Projects

Apr 29  Presentation of Group Projects

Academic integrity:
- Students are required to adhere to the Boston University Academic Conduct 
  Code: http://www.bu.edu/academics/policies/academic-conduct-code/
- Many projects will include collaborating in groups; however, unless explicitly 
  stated otherwise, each group member must submit their own unique work.
- For written assignments, any information presented from an outside source 
  (journals, books, newspapers, online sources) must be cited appropriately. 
  Paraphrasing without citation will be considered plagiarism.
- Infractions will be handled in accordance with university policy, and can result 
  in a zero for the assignment, or reduction in course grade. Details provided in 
  class.

Disability Accommodations: Accommodations for students with disabilities will be 
provided in accordance with the policies of Boston University.
Cognate Comment Request

TO: Name: William Grimes, Associate Dean for Academic Affairs
Department: Pardee School

FROM: Name: David Marchant, Chair
Department: Earth & Environment
Telephone: 353-3236
E-mail: marchant@bu.edu

Course Number: GE 710/IR 728

Course or Program Title: Scientific Assessments of Environmental Issues: Process and Evaluation

Our Department would like to request cognate comments on this course (or program). A complete proposal is attached for your review. If you need further information, please do not hesitate to contact me.

Kindly return the signed original to me by 9/23/16 so that I may include your comments when submitting our proposal for review and approval. Please do not send any cognate letters directly to the dean’s office. Thank you.

COMMENTS: The Pardee School supports this course proposal (and in fact will be cross-listing it. It will be of interest to our students interested in environmental policy and political economy. It does not overlap or conflict with any courses currently offered by the Pardee School.

Please explain fully any objections.

Signature: Date: 10/6/16
Title: Associate Dean for Academic Affairs