



Middlebury Institute of International Studies at Monterey

Graduate School of International Policy & Management

COURSE SYLLABUS – Fall 2020

IEPG 8503A: Research Strategies for Environmental Policy (2 credits)

Oct. 19 to Dec. 11 M & W 2:00PM-3:50PM (Zoom)

Dr. Juliano Calil, Adjunct Professor, IEP

Email jcalil@middlebury.edu /Office Location (Zoom)

Office Hours: Mondays and Wednesdays, 12:30PM to 1:30PM and by appointment

COURSE DESCRIPTION

Environmental issues result from complex interactions between natural processes and community characteristics. Risks related to natural hazards and exposure to pollutants (air, water, land) are determined by a combination of bio-physical characteristics, social structure, and regulation. Consequently, environmental policy questions are frequently answered via the integration of data from multiple disciplines, usually spread across various sources, and stored in different (sometimes incompatible) formats.

During this class, students will learn practical skills to formulate a research hypothesis, and develop the methods required to test it. Students will learn skills to collect, manage, and present multidisciplinary information to support policy making, community decision making, and action planning. Students will be exposed to various tools and techniques used to analyze environmental and socioeconomic data, at multiple temporal and spatial scales. Students will learn to identify reliable data sources, analyze and synthesize data, and to effectively communicate complex concepts to policy makers and non-specialists.

This class will cover multidisciplinary data including earth sciences (sea levels and temperature changes), exposure to pollutants, as well as socioeconomic measures, such as social vulnerability and environmental justice. Students will learn a set of tools and techniques and apply them to produce a specific deliverable (e.g. a slide, chart, or map) addressing a relevant policy question, within a domestic or international context.

COURSE OBJECTIVES

After taking this course, students will be able to successfully:

- Formulate an applied research hypothesis.
- Conduct a literature review.
- Identify relevant data requirements and appropriate data sources.
- Identify tools and techniques to extract, store, and analyze relevant data, and
- Effectively present complex concepts to non-specialists.

SAMPLE TOOLS AND TECHNIQUES COVERED

- Advanced Excel Features: Pivot tables and charts; Maps in Excel; and other advanced functions (e.g. VLOOKUP, Data Analysis and Solver).
- Create and analyze socioeconomic vulnerability indicators and indices.
- Database Design: introduction to relational tables and query design concepts.
- Literature review methods.

READING MATERIALS & COURSE SUPPORTING DOCUMENTS

Required and recommended course reading materials and supporting documents will be available throughout the course. Please bring your computers to each class each day to enable active use of these and other online resources and to participate effectively in in-class activities.

METHODOLOGY AND POLICIES

Methodology for the course will consist of lectures by the instructor, guest speakers, individual and group work, and student presentations. Activities include in-class discussion of key concepts and collaborative learning; online research; and a collaborative team project involving a topic of student's choice with a final in-class presentation. Students are expected to read and be prepared to discuss or draw on assigned tasks and reading materials each day. More than one unexcused absence will result in a grade of "Incomplete." Students with excused absences will be required to make-up missed classes with additional assignments.

1. Classes will start with a group discussion of a policy-relevant question related to a key environmental issue (e.g. how many structures suffered repetitive flood losses in Florida? What is the air quality in a specific location? Has it changed over time? Will a carbon tax disproportionately harm low-income communities?).
2. Instructor will provide a description of relevant concepts (e.g. what drives sea levels, how do we track social vulnerability?).
3. Review Data Requirements and potential data sources. Review available tools: how to choose the best tool for the job at hand?
4. Demonstration of Tools/Techniques.
5. Hands on work (students start to work on weekly assignments during class).

ACADEMIC CONDUCT

All students will be held to all policies and procedures listed in the most current Policies and Standards Manual (PSM). This includes but is not limited to our Student Honor Code and regulations on plagiarism. A complete copy of the Policies and Standards Manual (PSM) can be found here: <http://www.miis.edu/offices/records/policies>

Self-Plagiarism: Re-use of a student's work, in part or in its entirety, for another course without the express permission of the course instructor may be considered a form of plagiarism.

REQUIREMENTS AND GRADING

Your grade for the Part One of the course will be based on the following performance criteria:

• Weekly Assignments	50%
• Final Presentations (Group) (10% Content, 10% Visuals, 10% Presentation)	30%
• Active engagement in class discussions & activities	20%
TOTAL:	100%

All written assignments should be prepared in 12-pitch font, single-spaced with 1-inch margins, and conform to the space limitations identified in the assignment description provided by the instructor. Unless otherwise indicated in class, all assignments should be delivered to the **submitted via Canvas** by the due date and time. **Note: a 10% daily penalty will be applied to late assignments.**

Detailed guidance will be provided about the requirements for each of these deliverables. For information on standard MIIS Grading Policies, please refer to the [Policy and Standards Manual](#).

SUMMARY OF ASSIGNMENTS

Assignment 1:	Write two short paragraphs: Paragraph 1) What skills do you want to learn or further develop during this class? Paragraph 2) A suggestion for a weekly research assignment.
Assignment 2:	Topic: Repetitive Loss Problem. Answers various policy questions based on FEMA's dataset of Repetitive Loss. Prepare 2 to 3 slides with your answers.
Assignment 3:	Tentative Topic: Environmental Justice (Socioeconomics, Jobs Connection, etc.).
Assignment 4:	Tentative Topic: Cost Benefit Analysis of coastal adaptation options.
Assignment 5:	Student Proposed Exercise
Assignment 6:	Student Proposed Exercise

Final Presentations

POLICY FOR STUDENT DISABILITY ACCOMMODATIONS

Students with documented disabilities who believe that they may need accommodations in class are encouraged to contact Assistant Dean of Student Services, Ashley Arrocha, as early in the semester as possible to ensure that such accommodations are implemented in a timely manner.

Assistance is available to eligible students through the Office of Student Services. Please contact aarrocha@miis.edu or 831-647-4654 for more information. All discussions will remain confidential.

WEEKLY SCHEDULE

Monday, October 19, 2020	Course Overview; Introductions. Introduction to Multidisciplinary Research; Applied Research.
Wednesday, October 21, 2020	No class – Attend Juliano’s Talk at the Future of Everything event organized by the Wall Street Journal (and at least one more talk)
Monday, October 26, 2020	Formulating an applied research question. Literature Review. Dashboards; Finding Reliable data sources. Basic Excel Review. In Class Air Quality Exercise.
Wednesday, October 28, 2020	Repetitive Loss Problem. Intro to Calil & Newkirk Study; Overview of the Florida RLPs Tool (data sources and techniques used to prepare it, including Pivot Tables and VLOOKUP functions) RLPs in Class exercise – Open Refine
Monday, November 2, 2020	Strategies to incorporate social sciences into environmental research. Investigate Socioeconomic Characteristics, Census data - Defining Social Vulnerability (overview of SoVI© and CalEnvironScreen 3.0).
Wednesday, November 4, 2020	Socioeconomic continued – Census and in Class Activity.
Monday, November 9, 2020	Introduction to Cost Benefit Analysis (Basic concepts and case studies: Gulf Cost of U.S., Southern Monterey Bay, and Imperial Beach). Start Cost benefit Analysis Exercise.
Wednesday, November 11, 2020	Work on cost benefit analysis exercise.
Monday, November 16, 2020	Review Vulnerability Scores and Cost Benefit Analysis. OnTheMap and CRLA
Wednesday, November 18, 2020	Final Project Practicum
Monday, November 23, 2020	Thanksgiving break
Wednesday, November 25, 2020	Thanksgiving break
Monday, November 30, 2020	Topic Chosen by students
Wednesday, December 2, 2020	Group Presentations
Monday, December 7, 2020	Group Presentations
Wednesday, December 9, 2020	Recap, Unanswered Questions, Student-Chosen topics

*Syllabi are subject to change by the instructor with advance notice to students