Overview

Cost-benefit analysis provides a framework for conducting economic analysis of public policy, as well as examining tradeoffs in decision making within organizations—firms, NGO, government agencies. The application of cost-benefit analysis to environmental and other public policy is both common and controversial.

Decisions within organizations and government regarding environmental issues always involve tradeoffs. To accurately assess these tradeoffs, costs and benefits have to be measured; relevant parties determined; timelines decided; and discount rates selected. To understand these decisions, the course will cover the underlying theory of social decision-making based on a comparison of economic costs and benefits. We will consider numerous applications in the context of environmental and natural resource management, as well as devoting some attention to the current global coronavirus pandemic (more on that below). We also will read the peer reviewed literature on key issues in cost-benefit analysis. Some of the material in this class will overlap with what you have already covered in other MESM courses, but given the challenging nature of these concepts and their importance in environmental decision-making, this should be useful.

Students in ESM 245 will:

- learn the conceptual foundations of cost-benefit analysis,
- acquire the skills necessary to conduct original cost-benefit analyses,
- understand how to interpret the results and validity of cost-benefit analyses conducted by others, and
- gain an appreciation for the potential advantages and disadvantages of cost-benefit analysis.

A special note for 2020: We are currently living through a historic moment. The coronavirus pandemic has upended life around the globe, with dramatic direct impacts on health, particularly of the elderly and vulnerable, and indirect impacts on employment, education, well-being and nearly all sectors of the economy. The importance and immense challenges of the policy response to this pandemic make it a ripe topic for cost-benefit analysis. While this course remains, at its core, a course on environmental cost-benefit analysis, we will engage with current events when we can. In some cases, this will mean topics and discussions that are uncomfortable for students, and material that raises sensitive and personal experiences. As much as possible, particular recordings or readings that may be upsetting or trigger personal experiences will be tagged as such and students will be justified in skipping them if necessary. If you are concerned that this content will regularly and systematically interfere with your ability to participate in the class, please contact Professor Jack ASAP.

Content

The course is radically redesigned from previous years in an effort to respond to the challenges of remote learning and take advantage of the opportunities it presents. The course includes several elements designed to accommodate different learning styles and help students achieve the course objectives in spite of the challenges of remote learning. That said, the process will probably not be seamless for any of us, and so patience on all sides is greatly appreciated.

The course will rely on a combination of asynchronous videos and activities for you to complete on your own time and synchronous Zoom-based activities and discussions. You can expect each week to proceed as follows:

- Monday: Zoom-based in-class exercise –active engagement, help, progress checks, collaboration
- Tuesday: Discussion post due on Gauchospace by 5pm
• Wednesday: Zoom-based in-class discussion –breakout room engagement, polls and other interaction
  o Recordings and discussion prompts posted on Gauchospace for the following week
• Friday: In-class exercise due by 5pm

1) Recordings: Every week’s topic will be discussed in a series of video recordings. The total viewing time will not exceed 2 hours, and the material will be divided into digestible chunks. To get the most out of the synchronous sessions, you should plan to watch the videos before Monday’s session. Recordings will be made available on Gauchospace by Wednesday evening of the previous week.

2) Readings: There is no textbook for the course. Instead, each week’s topic is supported by 1-3 readings, available on Gauchospace and drawn from a combination of sources, including the peer reviewed literature, textbooks, the media and the internet. If you wish to supplement the assigned readings with a more traditional text, a few of the texts that the course draws upon include:


3) Discussion forums: Each week, you will be expected to respond to a discussion prompt using the online forum on Gauchospace. The discussions will draw heavily on content from both the recordings and the readings. Most weeks, they will inform the Wednesday synchronous sessions. To that end, they will be due Tuesday 5pm Pacific each week. They will be made available on Gauchospace by Wednesday evening of the previous week.

4) Zoom-based meetings: Each week, we will meet on Zoom as a class during the regularly scheduled class time. If this presents a challenge for you, because of time zones, your home environment or your access to equipment, please let Professor Jack know as soon as possible and we will make accommodations. The class sessions will be organized as follows each week:

Mondays: An in-class exercise that you will do in small groups. The exercises will be done collaboratively, will be largely quantitative, and will be based around the recordings and readings. They will be designed so that a group that works diligently during the class session should be able to complete most of the exercise in class. Assignments can be submitted by the group or individually, and will be due Friday 5pm pacific each week. The first week will not have an assignment.

Wednesdays: Small-group discussions and class polls. Wednesdays will give students an opportunity for more qualitative engagement with the course content, including small group discussions following specific prompts (drawn in part from the online discussion forum), interactions as a larger group using tools such as polls, and opportunities for Q&A.

**Professional conduct and communication**

You are all adults and have opportunities and demands on your time other than ESM 245. That said, you will get more out of this class if you are a regular and active attendee of our synchronous sessions. Please keep a few things in mind to make the experience as smooth as possible for everyone:

• You are set to mute when you join the Zoom meeting. Try to remember to unmute when you want to talk again, and to re-mute yourself when you are done.
• Interactions on Zoom are better approximations of real interaction if we can see each other. Unless you have real internet bandwidth issues, please try to join with your video on. If you cannot do so on a regular basis, please let the instructor or TA know.
• Pay attention and try not to multi-task. Just because you are alone in your kitchen while “in class,” that doesn’t mean that the rest of us won’t notice that you are making soufflé instead of paying attention to the discussion. For example, we will regularly move in and out of break out rooms. You will miss your breakout room assignment if
you are in the middle of whipping egg whites. Alternatively (and equally bad!), you will burn your soufflé if you are engaging with your classmates.

Office hours: Professor Jack will have drop in office hours on Wednesdays from 3:30-5:30 Pacific. These will be at the same Zoom link used for synchronous class meetings. Drop in with your questions or to chat. Sam Collie will have office hours on Mondays from 11:00-1:00 Pacific. Should you wish to discuss something in private or you absolutely cannot attend during the scheduled office hours, send an email to schedule at another time.

Questions and feedback: As much as possible, please direct both your non-office hours course questions and your feedback through Gauchospace. On the front page, we have created places for each: Q&A forums for course logistics and course content and an anonymous feedback form. The latter is intended as a way for you to share information designed to improve the course as we go. Please keep the feedback constructive so that we can be responsive.

Expectations

Your course grade will be based on your weekly discussion posts, your weekly in-class exercises and your participation. The course does not have very much homework associated with it this term so that you will have time to engage with the recordings and lectures outside of our class meetings, as well as attend and actively participate in our class meetings. Specific details on grading and expectations are provided below.

- Discussion posts (35%): Each week, by Tuesday at 5pm Pacific, you are expected to submit a short posting in response to a discussion prompt. These will be based on the recordings and readings. You will be given a fair amount of guidance on length and content. Practice preparing clear and succinct responses is an important life skill. Most posts will receive a two. Occasionally, a really outstanding post will receive a three. And occasionally, a really unsatisfactory post will receive a one. You will not get feedback on these posts if you have been given a two. The TA will send you a message if you receive a three or a one. If you do not post by the deadline each week, you will receive a zero. We will drop your lowest post score when calculating your grade. (In other words, you can miss one week without it affecting your grade.)
- In-class exercises (40%): Each week, by Friday at 5pm Pacific, you are expected to submit the exercise that you started (and maybe finished) in-class on Wednesday. You will work on these in class with a group of 4-5 other students. You are welcome to submit a single exercise for the whole group, one for a subset of the group or one for yourself as an individual. These will be submitted to a google drive folder that we provide – most of the exercises will be set up to run in google software. Exercises submitted by Monday at 9:30am the following week will receive 50% credit. Exercises submitted later than that will receive zero points.
- Participation (25%): You will receive points for regular attendance of weekly Zoom sessions, active contributions to discussions, and demonstrated engagement with asynchronous activities.

Schedule

- Week 1: The foundations of cost-benefit analysis and introduction to the 9 steps
- Week 2: Standing, decision rules and scenarios
- Week 3: Impacts and counterfactuals
- Week 4: Measurement – Stated preferences
- Week 5: Measurement – Revealed preferences
- Week 6: Measurement – Misc topics
- Week 7: Discounting
- Week 8: Risk and uncertainty
- Week 9: Aggregation, incidence and welfare
- Week 10: Threats to CBA