

ECON 410: Benefit-Cost Analysis

Spring 2025

Instructor: Dr. Zoë Plakias ([link to my website](#))

Schedule: T/Th 10-11:50 AM

Location: Environmental Studies 072

Modality: Face-to-face

Drop-in office hours in 313 Parks Hall: F 10-11:30 AM (no RSVP needed!)

One-on-one meetings: By appointment (schedule at: www.calendly.com/plakiaz)

Official Course Description

Benefit-cost analysis is an important tool for evaluating the economic impacts of public or private actions. Course provides students with a thorough understanding of the logical underpinnings of benefit-cost analysis and experience in applying benefit-cost analysis to 'real-world' problems.

Prerequisites: ECON 306 or ECON 309

Credits: 4

Grade Mode: Letter

Designation: Writing Proficiency (WP) 1

Learning Goals

This course is intended to provide you with an introduction to the theory and practice of benefit-cost analysis and to help you develop the tools to understand and help carry out benefit-cost analysis in your future work or study. Upon completion of this course, I expect that you will be able to:

- *Recognize* different project evaluation techniques and their limitations
- *Understand* the basic microeconomic theory related to project goals and impacts
- *Describe and perform* the various elements of benefit-cost analysis
- *Critically analyze and evaluate* existing benefit-cost analyses and their elements
- *Locate and interpret* additional resources to use for conducting benefit-cost analyses in your work
- *Communicate* clearly about benefit-cost analyses and their component parts

Grading

Reading assignments (x9) - 18% total

Problem sets (x4) - 28% total

Participation - 15% total

Benefit-cost analysis critique - 39% total

Grading Scale

A	93-100%	C	73-76.99%
A-	90-92.99%	C-	70-72.99%
B+	87-89.99%	D+	67-69.99%
B	83-86.99%	D	63-66.99%
B-	80-82.99%	D-	60-62.99%
C+	77-79.99%	F	0-59.99%

Course materials

All required course materials will be posted on Canvas or linked to from Canvas or Perusall. We will not use a textbook in this course because they are expensive, and I don't want you to have to pay for one. That said, I have requested a benefit-cost analysis textbook to be put on reserve in the library for you if you find this kind of reading and studying helpful. Information about this book can be found at the Library Resources link on our course page on Canvas once the book is available.

Note-taking

For most class periods, I will not use lecture slides. I find class is more fun and lively if I don't use slides, and there's lots of evidence that you'll learn better if you take notes. If that's not something you're used to, here's a [nice overview](#) of some different ways to take notes and key things to think about. I'll also take volunteers in each class period to serve as class note taker—their notes for that class will be posted on Canvas for anyone who misses class that day. Volunteer note takers will receive extra credit points and anyone who wants to will have the opportunity to serve as a note taker and earn these points.

Assignments

Reading assignments

This course will involve a lot of reading discussion! To have quality discussions, you will need to do the reading. In the first few days of class, we'll discuss how to read an economic paper and hopefully make reading them a little less scary. I will assign no more than one paper to read per class period. To ensure enough folks have done the reading so we can have a vibrant in-class discussion, I will be using Perusall. Perusall is a social annotation tool, which means you and your peers all read the paper on a single platform and then can then highlight parts you are confused about or interested in before class and converse with each other about the reading. Reading participation will be graded Satisfactory/Unsatisfactory. To get Satisfactory credit for completing a

reading, you must contribute 3 substantive questions or comments on Perusall, at least one of which must be an original comment (as opposed to a response to someone else). I will review these comments before class meets, so I can use them to inform our reading discussion. A substantive comment is one that demonstrates you're doing the reading and you're spending some time thinking about the article. After the first reading assignment, I will give you some feedback about the quantity and quality of your comments. We'll read 11 papers in the class, and you'll have to get a Satisfactory grade on at least 9 of the readings for full credit. That means you can skip 2 of the 11. Why? Because we're all human and have rough weeks. There's no need to tell me when you'll skip a reading—we'll just hope not everyone chooses the same day to skip the reading and I'll drop your lowest two grades at the end of the quarter. I do encourage you not to use up all these "free days" in the beginning of the term, though, as you might regret it later. You'll receive extra credit for any readings you do over the required number. The final reading assignment is required and will be a bit different (although it will count towards your 9). See instructions on Canvas for the final reading assignment.

Problem sets

I will assign four short problem sets during the term. These problem sets will consist of math problems, graphing, short answer questions, and data analysis exercises relevant to class topics. Details of each problem set will be provided on Canvas.

Benefit-cost analysis critique (contributes to WP1 designation)

In this assignment, you'll be asked to critique an existing benefit-cost analysis of your choosing. Your final product will be a 10-minute presentation (PowerPoint, Google Slides, Prezi, etc.) that summarizes the BCA you chose and your critiques. You will have opportunities to (and will be expected to!) work on this critique throughout the quarter. Details of the assignment and intermediate assignments will be shared on the second day of class.

Participation

Class participation is critical for our class learning environment, as I use the Socratic method (back and forth conversation) and active learning (games and activities) frequently in the classroom. In the past I've given credit for in-class exercises, but I haven't been totally satisfied with this system, so I have a flexible attendance policy. You'll get full participation credit if you attend ~71% of classes (15 of 21 classes, including the final presentation period). Attending means being there for the majority of the class (i.e., late arrivals or early departures won't count against you). I will track this attendance through communications on the inside of your name card which I will give you the first day of class. For absences beyond 6 classes, I will subtract 5 points (1% of

your final grade) per class. If you're absent, you don't need to tell me why you'll be out—we're all humans with other stuff going on in our lives besides this class and adults who can make our own decisions. That said, given that the class is small, I would appreciate a heads up if you'll be absent so that I can adjust my plans if I have an activity scheduled that requires a minimum level of participation to work well. The idea with this policy is not to police you but rather to encourage you to come to class because your voice and participation contribute to everyone's learning and classroom experience.

Use of ChatGPT and other generative AI tools

Per our class discussion on the first day, use of generative AI tools, including but not limited to ChatGPT, is *allowed in this course as a study tool without reporting in some situations*. For example, inputting your original text to check for grammar or spelling issues, defining terms and concepts, and outlining are all acceptable uses of generative AI tools in this course.

Use of generative AI tools, including but not limited to ChatGPT, is also *allowed in this course as a study tool with reporting* in several specific cases. These are: citation formatting, summarizing up to one paragraph of text, getting steps to solve a problem, or generating graphs for the BCA critique presentation. In all four of these cases, the use of generative AI must be reported; if it is used but not reported, this is unacceptable. Each writing assignment/problem must include an AI statement at the beginning of the homework with a brief description of how generative AI was used (if applicable). If using generative AI to summarize text in Perusall readings, please highlight the text you summarized in Perusall, make a note that you summarized it, and briefly explain what you understand the section's meaning to be after having used the tool. This will not count towards your three substantive comments.

Use of generative AI tools, including but not limited to ChatGPT, is *not allowed in this course to solve or prepare homework answers or generate original text that you then submit*. For example, using a generative AI tool to answer a question on a problem set or write parts of your BCA critique assignment is not acceptable. In addition, by default, anything not explicitly described as acceptable in this section will be considered unacceptable. However, if you have suggestions for changes to this policy as we all figure out how generative AI tools can be used in our work (or think it's missing something we discussed in class), please let me know. Finally, if you are ever in doubt about whether or not use of a generative AI tool is acceptable, please ask! I also reserve the right to adjust the policy (with prior communication to the class) if I feel the current policy is not conducive to student learning.

Course policies

I will follow all of the standard WWU policies listed at Syllabi@WWU. This website covers policies on COVID-19 safety; academic honesty; accommodations; ethical conduct with WWU resources; equity, equal opportunity, and civil rights; finals week; medical excuse policies; and the student code of conduct. In addition, I have adopted [Lauren's Promise](#). I promise to: (1) Listen and believe you if someone is threatening you, (2) Represent a safe haven for sharing incidents of sexual assault, domestic violence, or stalking, and (3) Change campus culture that responds poorly to dating violence and stalking.

Your well-being

Your well-being is very important to me. I have been in therapy and take medication for depression and anxiety, and this is something I struggled with in college. I am constantly working (it's not easy!) to get enough sleep and exercise and to eat well, and to manage my time well. The current political and economic changes and uncertainties are also affecting us all. I encourage you to reach out to me if you are struggling with coursework or other things in your life that are affecting your ability to engage in class so that we can discuss strategies that might help and I can direct you to relevant resources at Western. The sooner you talk to me about issues that are affecting your class participation and performance, the better!

E-mail

I will do my best to respond to e-mail in a timely manner. You can message me through Canvas or e-mail me at plakiaz@wwu.edu. I try to answer within 24 hours on weekdays, and 48 hours on weekends (if the request is urgent—e.g., for an assignment due on Sunday, I will try to respond sooner). Please do not expect an immediate response to e-mails, although I will provide these occasionally if I'm online when I receive your message. If you haven't heard from me about something within the timeframe stated above, feel free to nudge me by sending a follow-up e-mail. I get a lot of e-mail and sometimes messages get buried before I get to them.

Drop-in Office Hours and One-on-One Meetings

Drop-in office hours are times I promise to be in my office (Parks Hall 313) and available for you to drop-in and chat. You do not need to RSVP or tell me you're coming. We can talk about a question related to class (takes priority), further discuss a topic from class, or chat about whatever. For those wishing to chat one-on-one (not assured for drop-in hours, since multiple people might drop-in), I am available for one-on-one chats in person or via Zoom. You can schedule with me at: www.calendly.com/plakiaz.

Plan for the Term (subject to change)

Section 0 - Introduction

Class 1: Tuesday, April 1

Topics: Introductions, syllabus and Canvas site, AI discussion, road map for the course, elements of BCA

Reading: None

Class 2: Thursday, April 3

Topic: Elements of BCA cont'd, BCA critique assignment introduction, finding + reading economic papers, reading assignments using Perusall

Reading: None

Getting to know you survey - due Sunday, April 6 @ 11:59 PM

Class 3: Tuesday, April 8

Topics: Introduction to project evaluation, project goals (gov't vs business), theoretical basis for BCA

Reading: [Liscow and Sunstein \(2024\): Efficiency vs. Welfare in Benefit–Cost Analysis: The Case of Government Funding](#)

Class 4: Thursday, April 10

Topics: Project alternatives, standing, and impacts

Reading: [Sepulveda \(2023\): Cost–Benefit Analysis of an “Average” Professional Sports Team or Stadium in the United States](#)

BCA Critique Assignment Part 1 - due Sunday, April 13 @ 11:59 PM

Class 5: Tuesday, April 15

Topics: Impacts in primary + secondary markets, regression review

Reading: None

Class 6: Thursday, April 17

Topics: Market-based valuation, non-market valuation methods introduced

Reading: [Lee, Suter, and Bayham \(2023\): Reductions in National Forest Campground Reservation Demand from Wildfire](#)

Problem Set 1 - due Sunday, April 20 @ 11:59 PM

Class 7: Tuesday, April 22

Topics: Non-market valuation methods cont'd, stated preference methods

Reading: [Sarfo et al. \(2021\): Farmers' willingness to pay for digital and conventional credit: Insight from a discrete choice experiment in Madagascar](#)

Class 8: Thursday, April 24

Topics: Revealed preference methods, hedonic price model

Reading: None

Class 9: Tuesday, April 29

Topics: Recreation site choice models

Reading: [Fezzi, Ford, and Oleson \(2023\): The economic value of coral reefs: Climate change impacts and spatial targeting of restoration measures](#)

Class 10: Thursday, May 1

Topics: Benefit transfer methods, social cost of carbon

Reading: [Moore et al. \(2024\): Synthesis of evidence yields high social cost of carbon due to structural model variation and uncertainties](#)

Problem Set 2 - due Sunday, May 4 @ 11:59 PM

Class 11: Tuesday, May 6

Topics: Value of a statistical life, QALYs

Reading: [Robinson, Emer, and Hammitt \(2022\): Valuing COVID-19 Morbidity Risk Reductions](#)

BCA Critique Assignment Part 2 - due Wednesday May 7 @ 11:59 PM

Class 12: Thursday, May 8

Topic: Discounting

Reading: None

Class 13: Tuesday, May 13

Topic: Discounting

Reading: [Garfinkel et al. \(2022\): The Benefits and Costs of a Child Allowance](#)

Class 14: Thursday, May 15

Topic: Equity weighting + distributional analysis

Reading: [Lockwood et al. \(2024\): Socioeconomic distributional impacts of evaluating flood mitigation activities using equity-weighted benefit-cost analysis](#)

Problem Set 3 - due Sunday, May 18 @ 11:59 PM

Class 15: Tuesday, May 20

Topics: Decision rules + sensitivity analysis

Reading: [Radin et al. \(2020\): Benefit–Cost Analysis of Community-Led Total Sanitation: Incorporating Results from Recent Evaluations](#)

BCA Critique Assignment Part 3 - due Wednesday, May 21 @ 11:59 PM

Class 16: Thursday, May 22

Topic: Limitations of BCA and how to address them

Reading: [Keeler \(2020\): Mainstream and Heterodox Approaches to Water Quality Valuation: A Case for Pluralistic Water Policy Analysis](#)

Class 17: Tuesday, May 27

Topic: Recommendations + putting it all together, course evaluations

Reading: None

BCA Critique Assignment Part 4 - due Thursday, May 29 @ 10 AM

Class 18: Thursday, May 29

Topic: Final presentations (x9)

Reading: None

Class 19: Tuesday, June 3

Topic: Final presentations (x9)

Reading: None

Class 20: Thursday, June 5

Topic: Final presentations (x6), class wrap-up activities

Reading: None

Problem Set 4 - due Sunday, June 8 @ 11:59 PM

No exam or other activities in final exam week