BROWN SCHOOL
WASHINGTON UNIVERSITY IN ST. LOUIS
Spring 2020
Benefit Cost Analysis
S40-5650

CREDIT HOURS: 3
GRADE: L/G
ROOM: Goldfarb 135
DAY/TIME: Thursdays, 1pm-4pm
TA: Aurora Chen

INSTRUCTOR: Joseph T. Ornstein, Ph.D.[1]
OFFICE: Hillman 344
OFFICE HOURS: Thursdays, 11am-1pm.
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I. COURSE DOMAIN AND BOUNDARIES

The objective of this course is to prepare students to design, interpret, and conduct a fundamental type of economic evaluation for a variety of policy settings. Benefit-cost analysis (BCA), also known as cost-benefit analysis (CBA), is a research and decision-making tool for public policy assessment. Under certain conditions, BCA can help analysts add structured, transparent, and scientific information to policy evaluation and resource allocation discussions.

The purpose of BCA is to identify and list the impacts of potential policies or projects, to quantify the impacts, and to convert them into monetary terms for the calculation of net benefits. This course will focus on the use and application of BCA in social, health, and public policymaking. We will cover topics including the economic basis and principles of BCA, techniques for assessing the economic impact of policies, methods for valuing health and environmental impacts, intergenerational and philosophical concerns about BCA, risk and uncertainty, and discounting.

We will also compare BCA with some other common techniques in economic evaluation, including cost-effectiveness (CEA), cost-utility analysis (CUA), and budget impact analysis (BIA).

II. MSW AND MPH COMPETENCIES ADDRESSED IN THIS COURSE

A. MSW Competencies

C5. Engage in Policy Practice	Emphasize
C9. Evaluate Practice with Individuals, Families, Groups, Organizations, and Communities	Emphasize

B. MPH Foundational Knowledge

Not directly addressed in this course.

C. MPH Foundational Competencies and Specialization Competencies

Foundational Competencies: Evidence-Based Approaches to Public Health

[1] This course was previously taught by Professor Derek Brown, and I am indebted to him for sharing his materials. I hope that by the end of the semester we can provide him valuable feedback to improve the course in future iterations!

1. Select quantitative and qualitative data collection methods appropriate for a given public health context.
2. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate.
3. Interpret results of data analysis for public health research, policy or practice.

Foundational Competencies: Public Health & Health Care Systems

4. Compare the organization, structure and function of health care, public health and regulatory systems across national and international settings.

Foundational Competencies: Planning & Management to Promote Health

5. Explain basic principles and tools of budget and resource management.
6. Select methods to evaluate public health programs.

Foundational Competencies: Policy in Public Health

7. Evaluate policies for their impact on public health and health equity.

Specialization Competencies: Global Health

1. Apply ethical approaches in global health research, program evaluation, and implementation.

Specialization Competencies: Health Policy Analysis

1. Demonstrate core understanding of the wide-ranging issues that dominate the modern health policy debate at all levels of government. Apply and interpret common statistical methods for inference found in public health studies.
2. Understand the policy process and the principles, values, and pressures that guide public health policy making. Select and perform (with computer packages) appropriate descriptive statistics and tests for differences in continuous and categorical variables.
3. Analyze the effects of political, social, and economic policies on public health systems at the local, state, national and international level using a transdisciplinary approach (i.e. apply paradigms from economics, sociology, political science and theory, and law). Demonstrate an understanding of systematic biases (selection and information biases) that affect observational, quasi-experimental, and experimental studies of health and healthcare policies.
4. Learn how to employ methods pertaining to policy analysis, analysis of health systems, and application of economics and evaluation techniques in the health/public health sector to conduct and the design original policy analysis and research.
5. Demonstrate an ability to synthesize complex information for a decision maker, addressing the issues of costs, benefits, distribution, effectiveness, efficiency, administrative ease, legality, equity, and political acceptability and make and support recommendations affecting health policy and practice.
6. Understand the effects of markets and political processes on the allocation of resources to health services and public health programs.

Specialization Competencies: Urban Design

1. Employ essential methodologies (to enumerate and address current public health challenges and inequities associated with urban design.

III. BROWN SCHOOL ACADEMIC POLICIES

Academic Integrity: If a faculty member or student suspects that academic or professional integrity has been violated, they are required to submit an Academic Integrity or Professional Integrity Violation form found on Inside Brown for review by the Assistant Dean of the program. The Assistant Dean or designated representative will aid in the investigation of the violation, which includes but is not limited to gathering relevant evidence; conversations with the instructor, student(s) involved, witnesses, and others as necessary. Depending on the seriousness of the case, the Assistant Dean may choose to refer the matter directly to the University Student Conduct Board. This referral procedure will generally be followed if it is believed that the penalty is likely to involve suspension or expulsion from the University. The Assistant Dean for the program or designated representative will offer to meet privately with the student(s) against whom the complaint has been made. It is the student's responsibility to familiarize themselves with the behaviors that constitute an academic integrity violation requiring referral.

Student Handbook 2019

Accommodations: If you have a learning, sensory, or physical disability or any other diagnosis that requires accommodations and/or assistance in lectures, reading, written assignments, and/or exam taking, please work with the Disability Resource Center, a University-wide resource that provides academic accommodations support and referrals. After requesting academic accommodations by providing appropriate documentation, students approved for accommodations will provide an Accommodation Letter to the instructor and are encouraged to work directly with the instructor to discuss specific course needs. The student's Academic Advisor and/or the Assistant Dean for Academic Affairs can support a student through this process.

Pronouns: The Brown School embraces and promotes gender expansiveness as reflective of the lived experiences of many students, staff, faculty and members of our expanded community. The correct use of an individual's pronouns is a critical part of an individual's identity and of building an inclusive community. Students, faculty and staff are encouraged to use pronouns during introductions, are expected to use expressed pronouns of all Brown School community members, and are encouraged to apologize when mistakes are made. Educational resources are available at: https://campuslife.wustl.edu/lgbtqia/lgbt-resources/gender-pronouns/

English Language Proficiency: If your English language proficiency is such that you may need special assistance in lectures, reading, written assignments, and/or exam taking, please communicate these needs to your instructor who may refer you to the Brown Communication Lab. If you would like help seeking additional English language resources, please visit the Global Programs Suite in Brown 309. You may also find the Academic Assistance resources available through the Office for International Students and Scholars to be helpful.

Professional Use of Electronic Devices in the Classroom: Computers or other electronic devices, including "smart pens" (devices with an embedded computer and digital audio recorder that records the classroom lecture/discussion and links that recording to the notes taken by the student), may be used by students at the discretion of the faculty member to support the learning activities in the classroom. These activities include taking notes and accessing course readings under discussion. If a student wishes to use a smart-pen or other electronic device to audio record lectures or class discussions, they must notify the instructor in advance of doing so. Permission to use recording devices is at the discretion of the instructor, unless this use is an accommodation approved by Disability Resources.

Nonacademic use of laptops and other devices and use of laptops or other devices for other coursework is distracting and seriously disrupts the learning process for other people in the classroom. Neither computers nor other electronic devices are to be used in the classroom during class for nonacademic reasons or for work on other coursework. Nonacademic use includes emailing, texting, social networking, playing games, instant messaging, and use of the Internet. Work on other coursework may include, but is not limited to, use of the Internet, writing papers, using statistical software, analyzing data, and working on quizzes or exams. The nonacademic use of cell phones during class time is prohibited, and they should be set on silent before class begins. In the case of an emergency, please step out of the room to take the call. The instructor has the right to hold students accountable for meeting these expectations, and failure to do so may result in a loss of participation or attendance points, a loss of the privilege of device use in the classroom, or being asked to leave the classroom.

Religious Holidays: The Brown School recognizes the individual student's choice in observing religious holidays that occur during periods when classes are scheduled. Students are encouraged to arrange with their instructors to make up work missed as a result of religious observance, and instructors are asked to make every reasonable effort to accommodate such requests.

IV. WASHINGTON UNIVERSITY ACADEMIC SUPPORT POLICIES

Accommodations based upon relationship or sexual violence, including sexual harassment and stalking: The University is committed to offering reasonable accommodations to students who are victims of relationship or sexual violence. Students are eligible for accommodations regardless of whether they seek criminal or disciplinary action. Depending on the specific nature of the allegation, such accommodations may include but are not limited to implementation of a no-contact order, emergency housing, course/classroom assignment changes, assignment extensions and other academic support services. If you need to request such accommodations, please direct your requests to rsvpcenter@wustl.edu or call directly to 314-935-3445.
There are four licensed RSVP counselors who serve as confidential resources. However, to implement requests for accommodations, limited information will be shared with the appropriate university administrator and/or faculty. The University will maintain as confidential any accommodations or protective measures provided to an individual student so long as it does not impair the ability to provide such measures.

If a student comes to me to discuss or disclose an instance of sexual assault, sex discrimination, sexual harassment, dating violence, domestic violence or stalking, or if I otherwise observe or become aware of such an allegation, I will keep the information as private as I can, but as a faculty member of Washington University, I am required to immediately report it to my Department Chair or Dean or directly to Ms. Jessica Kennedy, the University's Title IX Director. If you would like to speak with directly Ms. Kennedy directly, she can be reached at (314) 935-3118, jwkennedy@wustl.edu, or by visiting the Title IX office in Umrath Hall. Additionally, you can report incidents or complaints to the Office of Student Conduct and Community Standards or by contacting WUPD at (314) 935-5555 or your local law enforcement agency. See: Title IX

You can also speak confidentially and learn more about available resources at the Relationship and Sexual Violence Prevention Center by calling (314) 935-3445 for an appointment or visiting the 4th floor of Seigle Hall. See: RSVP Center

Bias Reporting: The University has a process through which students, faculty, staff and community members who have experienced or witnessed incidents of bias, prejudice or discrimination against a student can report their experiences to the University's Bias Report and Support System (BRSS) team. See: brss.wustl.edu.

Mental Health: Mental Health Services' professional staff members work with students to resolve personal and interpersonal difficulties, many of which can affect the academic experience. These include conflicts with or worry about friends or family, concerns about eating or drinking patterns, and feelings of anxiety and depression. See Mental Health Resources.

Center for Diversity and Inclusion (CDI): The Center of Diversity and Inclusion (CDI) supports and advocates for undergraduate, graduate, and professional school students from underrepresented and/or marginalized populations, creates collaborative partnerships with campus and community partners, and promotes dialogue and social change. One of the CDI's strategic priorities is to cultivate and foster a supportive campus climate for students of all backgrounds, cultures and identities. See: diversityinclusion.wustl.edu/

Additional Issues or Concerns: If you feel that you need additional supports in order to be successful in your time at Brown, beyond the mentioned accommodations, please contact your Academic Advisor or Miriam Joelson, Academic and Student Affairs Coordinator. They can assist you in navigating a myriad of concerns.

V READINGS

Software

You will need to use Microsoft Excel spreadsheet software throughout the course for in-class exercises, problem sets, and projects. Please bring your laptop computer with Excel to every class. In Weeks 9 and 10 we will also use the R, a free and open-source programming language for statistical analysis. You can download R here: https://www.r-project.org/. And you can download RStudio (an IDE that makes R much easier to use) here: https://rstudio.com/.

Required Textbook – on reserve at the Brown School Library
http://catalog.wustl.edu/search~S2?/pbrown%2C+derek/pbrown+derek/1%2C2%2C3%2CB/frameset&FF=pbrown+derek&2%2C%2C2

- **Boardman, A.E., Greenberg, D.H., Vining, A.R., & Weimer, D.L. (2018). *Cost-Benefit Analysis* (5th ed.). New York: Cambridge University Press. (Referred to as "BGVW" and "Boardman" later.)**

Our main text for the course, this is the authoritative textbook on CBA, widely used in universities worldwide. It is important to read all assigned sections, unless otherwise noted. The text is detailed, dense, and challenging in places. We will deal with that in a few specific ways. First, we will focus on understanding the theory and application in class lectures and discussion—bring your questions to class! Second, we will skip some of the most technical parts. Third, during the semester, I will provide a primer in lecture and with supplemental resources, as needed, when the textbook or a concept (e.g., nonmarket valuation) builds on some familiarity with fundamentals of economics.
https://doi.org/10.1017/9781108235594

Optional Textbooks – on reserve at the Brown School Library

- **Viscusi, W.K. (2018). *Pricing Lives: Guideposts for a Safer Society.* Princeton, NJ: Princeton University Press.**

This great new book focuses on the topic of value of a statistical life (VSL), which is used when mortality/fatalities are part of a BCA/CBA. The book contains an interesting history as a well as a survey of the current state-of-the-art for VSL estimation and a review of how different VSL estimates are used in different settings. Complexities, such as differences in age, by type of risk or death, and equity are discussed in detail.

- **Frakt, A., & Piper, M. (2014). *Microeconomics Made Simple: basic microeconomics principles explained in 100 pages or less.* Manitou Springs, CO: Simple Subjects, LLC.**

This $4.99 e-book is about $15 printed from Amazon. (Unfortunately, the WUSTL Textbook Store is unable to procure this text; you will need to order online or check out the reserve copy from the library.) Basics economics concepts are explained concisely and clearly in words (and a few simple graphs and tables). Free of some of the detail in Boardman, you can learn about basic concepts quickly and intuitively.

Other Helpful Resources – NOT required
Edspira
https://www.edspira.com/index/ and https://www.youtube.com/user/EducationUnlocked

These excellent videos are created by Brown School Ph.D. (2018) Michael McLaughlin, who is currently an instructor in the Olin School of Business. Primarily a resource for accounting students, Dr. McLaughlin's videos are excellent if you are stuck with a concept such as NPV (net present value) or IRR (internal rate of return) which is used in CBA, accounting, and other fields.

Sunnstein, C.R. (2018). *The Cost-Benefit Revolution*. Cambridge, MA: MIT Press.

This excellent new book contains reflections from a long career by a leading scholar in this area. The author weighs the promise of CBA against the political realities of evidence-based policy-making. Good discussion of critiques, complications, and challenges in the application CBA in the real world.

Zerbe, R.O., & Bellas, A.S. (2006). *A Primer for Benefit-Cost Analysis*. Northampton: Edward Elgar.

This is the other main textbook used in CBA/BCA courses. It is a useful reference, but unfortunately, it is not available in the Washington University library system and it is somewhat outdated.

Transportation Research Board (TRB). "Transportation Benefit-Cost Analysis." http://bca.transportationeconomics.org/

Great website that contains a detailed tutorial on BCA for a general, less technical audience. Also contains case studies, tips on communication, and more.

Ackerman, F., & Heinzerling, L. (2004). *Priceless: On Knowing the Price of Everything and the Value of Nothing*. New York: the New Press.

A well-written book about many ethical and scientific critiques of the limitations of valuation, CBA/BCA, and economic evaluation in general.

Additional Resources on Health and Cost-Effectiveness – NOT required

- CDC's 5-part webcast on economic evaluation. (Closely follows Haddix et al., 2003.) https://www.cdc.gov/dhdsp/evaluation_resources/economic_evaluation/index.htm
- Drummond, M.F., Schulpher, M.J., Torrance, G.W., O'Brien, B.J., & Stoddart, G.L. (2005). *Methods for the Economic Evaluation of Health Care Programmes*, 3rd ed. New York: Oxford University Press.
- Haddix, A.C., Teutsch, S.M., & Corso, P.S. (2003). *Prevention Effectiveness: A Guide to Decision Analysis and Economic Evaluation*, 2nd ed. New York: Oxford University Press.
- Levin, H.M., & McEwan, P.J. (2001). *Cost-Effectiveness Analysis: Methods and Applications*, 2nd ed. Thousand Oaks, CA: Sage Publications.
- Neumann, P.J., Sanders, G.D., Russell, L.B., Siegel, J.E., & Ganiats, T.G. (2016). *Cost-Effectiveness in Health and Medicine*, 2nd ed. New York: Oxford University Press.

Required Article Readings

One of the best ways to learn about BCA/CBA is to read case studies. Beyond the textbook, most classes will include additional required readings (e.g., journal articles, policy briefs, newspaper articles) which will be posted on Canvas. These articles are important. Be sure to read them before class so that we can have a good discussion of the studies and your questions about them.

For each article, I will assign one or two students to lead the in-class discussion. These students will be expected to come prepared with an article summary, questions to prompt discussion, and their own critical appraisal of the case study. You may skim more technical or specialized sections. All students should seek to understand the main points of an article—what, why, how, limitations, implications, etc. Soak up as much as you can and be ready to discuss further in class. (You are not responsible for advanced statistical or mathematical models but we may cover those parts in class during discussion.)

Expect some substitutions during the course. I will announce and post these 1-2 weeks in advance, giving you at least one week to prepare.

Prerequisites and Economics Principles

S15-5040 (Social Welfare Policies & Services) or S50-5011 (Economics of Social Welfare) are prerequisites for MSW or MSP students, respectively. While any prior experience with economics or accounting is useful for this course, I will assume that students have little or no prior exposure to economics. Chapter 3 of Boardman contains the essentials that you will need, but you may still have questions about these concepts. During the semester, I will provide more supports in lecture and with supplemental resources, as needed, when the textbook or a concept (e.g., nonmarket valuation) assumes more familiarity with fundamentals of economics. Please do not hesitate to ask questions! By completion of this course, all students can be good, critical consumers and basic producers of BCA/CBA.

There is a key difference between benefit-cost analysis and economics. As a discipline, economics traditionally prides itself on being "positive" (describing what is, without value judgments) rather than "normative" (making judgments about fairness or equity). *Benefit-cost analysis is different!* Our goal is to make optimal normative recommendations (yes/no) about policy, based on quantitative estimates and data. The typical objective of BCA/CBA is "allocative efficiency," so for students in public health, social policy, and social work, CBA/BCA may at times seem cold and incomplete, if not irresponsible. Bring those sentiments to class and help us (and me!) to dig deeper into the limitations of these methods, as well as seeing some of the strengths.

I encourage you to critically appraise the readings, case studies, and concepts and to think about what they do and do not tell us about equity, efficiency, and social welfare.

VI. ORGANIZATION OF COURSE

Structure

The first part of the course introduces the topic of BCA/CBA, explores conceptual foundations and basic concepts, and establishes the foundation for CBA based on principles of microeconomics. In the second and largest part of the course, we dive deeper into core concepts, discuss complexities in the application of CBA/BCA in the real world, and look at decisions that an analyst faces. In the final phase of the course, we will look at a few special topics and related methods (e.g., CEA/CUA, Economic impact analysis), work on your student projects, and present project work to your classmates.

Midterm and Problem Sets

Problem sets are important to learn, practice, and apply the core concepts that we will learn in lecture. Boardman spans a range of potential audiences (undergraduates through master's economics and professional analysts). You do not have to learn every concept in each chapter. I will be your guide. The problem sets will reinforce the level of expectations for the class and for the midterm.

We will have a take-home midterm exam (see schedule). The midterm will resemble problem set exercises, but may include other analytical (short answer/essay) and spreadsheet (Excel) questions.

Final Project

In the second half of the course, all students will conduct an original benefit-cost analysis of a project or policy of your choice. Briefly, each student will:

- Identify a project or policy to evaluate
- Follow Boardman's 10 steps to conducting a BCA (page 5 in the text). These include:
    a. Specify which benefits and costs count
    b. Collect, gather, and/or estimate data on costs & benefits
    c. Discount and compute net present value of alternatives
    d. Perform a sensitivity analysis
    e. Make a recommendation
- Present your work to the class
- Write up an executive summary and longer technical report, including tables and appendices.

You may work alone or in pairs. Further details will be provided after spring break. The work must be original but, subject to approval, it may complement a practicum experience, dissertation, or project from another class. Example topics could include BCA/CBA of:

- Adding work requirements to Missouri Medicaid
- New soccer stadium proposal in midtown St. Louis
- The Loop Trolley
- Establishing up to 4 new Missouri state parks (Jay Nixon, Eleven Point, Bryant Creek, & Ozark Mountain)

Classroom Format

In each class, we will spend the first 90 minutes or so with a lecture on this week's topic (the assigned content in the Boardman textbook). We will often spend 30-60 minutes reviewing the assigned problem sets, your questions, or impromptu exercises based on the lecture content but not assigned as homework. (Bringing your textbook to class is a good idea to help with this.) In the last 30-60 minutes of class, we will discuss assigned readings for the week, and current policy topics that relate to CBA/BCA.

Canvas

A Canvas site for this course has been established access to class materials: lecture notes, readings, problem sets, and solution sets. Canvas may be used for submission of the final paper or midterm.

VII. ROLE OF FACULTY AND STUDENT

Instructor
I will prepare lecture, discussion, and provide outside supports for each class session. The expectation is that every student will find the material stimulating, challenging, and interesting and that every student will thrive and succeed in the course. I am prepared to provide both individual and collective support outside of the class, using Canvas where possible to post questions, answers, and additional materials relevant to the course.

Student
Before each class, students are expected to complete all required readings on the course outline and any other assigned readings as announced by the previous week's class meeting. It will be difficult to fully participate in discussion, to understand lecture on new concepts, and prepare good questions without completing the readings. You are expected to come to class with questions and reactions to the material. Again, your responses should be focused on addressing the central issue of how to make class content useful to the student.

Classes will be interactive and designed to process and apply the material, not review or summarize the readings. BCA/CBA is complex, with its own language, criteria, and concerns. Class time is very limited for the amount of material to be learned, so out of class preparation is essential.

Please do not hesitate to let me know if a reading or class session misses the mark. You can help to maximize your experiences this semester and to improve future courses if I hear from you.

VIII. ASSIGNMENTS AND GRADING CRITERIA

There are several requirements for this course, with weights used in calculating the final grade provided in the table below. More detailed descriptions for some assignments will be provided and discussed in class. Assignment details and requirements are subject to change at the instructor's discretion.

Assignment	Description	Due Date	Percentage of Grade
Class Participation	Oral participation during all class meetings, successfully leading class discussion of articles during your assigned week.	Each class	15%
Problem Sets	4 problem sets (5 points each), combination of short answer, light graphical, algebraic, or spreadsheet analysis	As noted on schedule	20%
Midterm Exam	Take-home exam, based on the problem sets	As noted on schedule	25%
Final Project Paper	Original BCA/CBA of a project or policy of your choice. Written report includes executive summary and longer technical report, tables and appendices.	Last class	35%
Final Project Presentation	15-20 minute presentation summarizing your project to the class	As noted on schedule	5%
Evaluations (extra credit)	Complete midterm and final evaluations. If the class meets the participation levels below, all will receive a +1% bonus (midterm) and/or a +1% bonus (final). If the class does not meet these levels, there is no bonus. • Class $n<10$: 100% completion, both midterm & final • Class $n>=10$: 80+% midterm, 90+% final	Announced in class or from Brown School Registrar. evals.wustl.edu	Up to 2 extra percentage points

All assignments are due by class time on the date specified in the outline. Late problem sets are deducted by 1 point (out of 5) for each 24-hour period (0-23.9 hours) that the assignment is late. All other assignments will be reduced by minus one full letter grade (-10%) for each 24-hour period late. The overall grade will be calculated following a standard 0-100 scale: A (95-103), A- (90-94), B+ (87-89), B (83-86), B- (80-82), C+ (77-79), C (73-76), C- (70-72).

Class participation is essential for each student—as well as the entire class—to have an outstanding class experience. Full credit requires the following:

1. During lecture, ask clarifying questions. If you do not have questions, volunteer to share your responses to the exercises or activities that we do in class around lecture.
2. During discussion of readings, articles, and policy, students must contribute substantively to the discussion in every class meeting, not simply attend.

I make weekly notes after each class and award each student up to 3 points: 3= excellent contributions, 2=good contributions, 1=poor or did not contribute, and 0=missed class or clearly did not complete any of the readings.

Problem Sets. To prepare for the midterm, it is your responsibility to carefully check each problem set against the solution set that will be posted on Canvas. I will review them briefly, checking mostly for completion and any systemic errors across students. I use the following marks:

- 5 points: all items completed; most are correct
- 4 points: most items complete (some skipped/blank); OR, all complete but with several errors
- 3 points: many items skipped/blank; OR, errors throughout all items
- 0 points: assignment skipped or more than 5 days late.

I strive to return all problem sets by the next class. Solution sets will be posted, and we will have a chance to discuss common questions in class. You are encouraged to work in groups on problem sets, but each student must submit an independent write-up. All work on the midterm take-home exam must be independent, so be sure to study the solutions on your own and to ask questions about anything you are unsure about.

IX. MPH COMPETENCY ALIGNMENT TO ASSESSMENT OPPORTUNITY

MPH Competency(ies)	**Assessment Opportunity**
Foundational: Select quantitative and qualitative data collection methods appropriate for a given public health context	Project, problem sets, midterm
Foundational: Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate	Project, problem sets, midterm
Foundational: Interpret results of data analysis for public health research, policy or practice	Project, problem sets, midterm, class participation
Foundational: Compare the organization, structure and function of health care, public health and regulatory systems across national and international setting	Project, problem sets, class participation
Foundational: Explain basic principles and tools of budget and resource management	Project, problem sets, midterm
Foundational: Select methods to evaluate public health programs	Project, problem sets, midterm
Foundational: Evaluate policies for their impact on public health and health equity	Project, class participation
Global Health: Apply ethical approaches in global health research, program evaluation, and implementation	Project, class participation
Health Policy 1: Demonstrate core understanding of wide-ranging issues that dominate modern health policy debate	Project, class participation

Health Policy 2: Understand the policy process and the principles, values, and pressures that guide public health policy making	Project, class participation
Health Policy 3: Analyze the effects of political, social, and economic policies on public health systems	Project, class participation
Health Policy 4: Learn how to employ methods pertaining to policy analysis, analysis of health systems, and application of economics and evaluation techniques in health/public health	Project, problem sets, midterm
Health Policy 5: Demonstrate an ability to synthesize complex information for a decision maker, addressing issues of costs, benefits, distribution, and effectiveness …	Project, problem sets, midterm, class participation
Health Policy 6: Understand the effects of markets and political processes on the allocation of resources to health services and public health programs	Project, problem sets, midterm, class participation
Urban Design: Employ essential methodologies (to enumerate and address current public health challenges and inequities associated with urban design	Project, class participation

IX. MSW COMPETENCY ALIGNMENT TO ASSIGNMENTS AND COURSE ACTIVITIES

GRADED ASSIGNMENTS	**Competency/ies**	**Dimension/s**
Class Participation	C5, C9	Knowledge, Skills, Cognitive Processes, Values
Problem Sets	C5, C9	Knowledge, Skills, Cognitive Processes
Midterm Exam	C5, C9	Knowledge, Skills, Cognitive Processes
Final Project Presentation	C5, C9	Knowledge, Skills, Cognitive Processes, Values
Final Project Report	C5, C9	Knowledge, Skills, Cognitive Processes, Values

COURSE ACTIVITIES	**Competency/ies**	**Dimension/s**
Learn overview and basics of CBA/BCA	C5, C9	Knowledge, Skills, Cognitive Processes
Establish conceptual foundations of CBA	C5, C9	Knowledge, Skills, Cognitive Processes, Values
Establish microeconomic foundations of CBA	C5, C9	Knowledge, Skills, Cognitive Processes

Understand valuation of impacts in output markets	C5, C9	Knowledge, Skills, Cognitive Processes, Values
Understand valuation of impacts in input markets	C5, C9	Knowledge, Skills, Cognitive Processes, Values
Understand valuation of impacts in secondary markets and economic impact analysis	C5, C9	Knowledge, Skills, Cognitive Processes, Values
Learn how to predict and monetize impacts	C5, C9	Knowledge, Skills, Cognitive Processes
Learn principles of discounting and inflation	C5, C9	Knowledge, Skills, Cognitive Processes
Understand and apply social discount rates	C5, C9	Knowledge, Skills, Cognitive Processes, Values
Establish relationship between risk, option price, and option value	C5, C9	Knowledge, Skills, Cognitive Processes, Values
Understand existence value	C5, C9	Knowledge, Skills, Cognitive Processes, Values
Learn how to value impacts from observed behavior using experiments, quasi-experiments	C5, C9	Knowledge, Skills, Cognitive Processes, Values
Learn how to value impacts from indirect markets	C5, C9	Knowledge, Skills, Cognitive Processes, Values
Understand contingent value	C5, C9	Knowledge, Skills, Cognitive Processes, Values
Learn how shadow prices are estimated from secondary sources	C5, C9	Knowledge, Skills, Cognitive Processes
Establish basics of cost-effectiveness analysis (CEA) & cost-utility analysis (CUA)	C5, C9	Knowledge, Skills, Cognitive Processes
Conduct original BCA/CBA on project of student choice	C5, C9	Knowledge, Skills, Cognitive Processes, Values
Present findings	C5, C9	Knowledge, Skills, Cognitive Processes, Values

X. COURSE OUTLINE

Wk	Date	Content	Boardman Chapters	Assignment Due
PART 1: FOUNDATIONS & THEORY				
1	1/16	Introduction to the Course	Ch 1	
2	1/23	Conceptual Foundations of CBA	Ch 2	
3	1/30	Microeconomic Foundations of CBA	Ch 3 (skip Appendix 3)	PS #1
4	2/6	Valuing Impacts in Output Markets	Ch 5	
5	2/13	Valuing Impacts in Input & Secondary Markets	Ch 6, 7	PS #2
PART 2: TOOLS & TECHNIQUES				
6	2/20	Predicting Impacts	Ch 8, Case 8	
7	2/27	Shadow Prices 1: Stated Preferences	Ch 16	PS #3
8	3/5	Shadow Prices 2: Revealed Preferences	Ch 15, 17	
	3/12	SPRING BREAK		
9	3/19	Discounting and the Social Discount Rate	Ch 9, 10	PS #4
10	3/26	Sensitivity Analysis	Ch 11	
PART 3: PROJECTS				
11	4/2	Existence value, Option Value, Value of Information, catch up, open project help	Ch 12, 13 (skim)	Midterm due
12	4/9	CEA, CUA, distributionally-weighted CBA, catch up, open project help	Ch 18, 19 (skim)	
13	4/16	Student Project Presentations		Project Presentations
14	4/23	Student Project Presentations		Project Presentations
15	4/30	Wrap Up	Ch 20	Final Report

*** Lecture content and weeks are subject to change. Announcements will be made in class and by email.*

PS = problem set. Supplemental readings for most weeks will be announced in class – one week in advance and posted to Canvas. Interim deadlines for the project (over the last 6 weeks of class) will be announced after spring break. We are skipping Chapters 4, 12, 13, 14 & 19 of Boardman.