Brief Course Description (from Purdue Graduate Catalog)

This course develops the theory and methods used to assess the benefits and costs of economic policies and projects. Topics include benefit-cost analysis, economic impact analysis, nonmarket valuation, and analysis of risk and uncertainty.

Course Objectives and Desired Learning Outcomes

The primary objective of this course is to prepare students to conduct rigorous applied economic policy and project analyses. Students who complete this course will be able to:

- Estimate a project’s benefits and costs, including shadow pricing project inputs and outputs and valuing non-market goods and services;
- Appropriately apportion various benefits and cost across different project stakeholders to estimate the distribution of project benefits and costs across society;
- Derive and interpret economic measures of project performance, including net present value, internal rate of return, and benefit-cost ratios; and
- Incorporate risk and uncertainty into project analysis.

Materials

The required course texts are:


An online version of Champ et al. (2017) is available for free through Purdue Libraries. Some lectures will be based on readings available from Purdue Libraries. Please see the reading list at the end of this document for specific reading assignments.

An optional course text that will be very helpful for the section on nonmarket valuation is:


Other required readings comprise peer-reviewed journal articles or book excerpts available online via Purdue Libraries. Links to these readings will be provided in Blackboard.

Most assignments will be completed using Microsoft Excel and/or Stata. Microsoft Office 365 (which contains Excel and other programs) is available for free to Purdue students.\(^1\) Stata is available through Purdue Community Hub.\(^2\) We will also make some use of the @Risk add-on for Microsoft Excel. You can install @Risk on your personal computer during the course period if you wish.\(^3\) Alternatively, @Risk is available in several campus computer labs (HIKS G959, KRAN 250, SC 179, and HAMP 3144).

You are free to use other programs (e.g., R, MATLAB) to complete assignments if you choose, but I can only offer support for Excel and Stata.

**Assignments & Evaluation**

Most class content, including problem sets and supplementary readings, can be accessed via Blackboard Learn (https://mycourses.purdue.edu).

**Problem Sets (50% of Final Grade)**

I will provide several problem sets over the course of the semester. Each problem set is worth the same portion of your final grade. Students may work together to complete the problem sets. However, each student must turn in their own, original assignment. Completed problem sets are to be uploaded to Blackboard by the due date. Late assignments will not be accepted. Detailed answer keys will be made available in Blackboard after the assignment’s due date, and each problem set will be discussed in class on the due date.

**Term Project (30% of Final Grade)**

Each student will complete a class project comprising (i) an original benefit-cost analysis related to their thesis research or (ii) a case study taken from the textbook or other materials. Additional details and requirements will be provided after the start of the course.

**Final Exam (20% of Final Grade)**

The in-class final will be offered on the assigned time and date during final exam week. (Note: the Registrar’s office sets the final exam schedule in February. Once available, the date and time will be announced in-class and via Blackboard.) No make-up exams will be offered. The exam will be similar to the problem sets and may draw on the course readings. No outside notes or materials are permitted for use during the in-class exam.

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\(^1\) See https://www.itap.purdue.edu/shopping/software/product/office365.html.

\(^2\) See https://communityhub.purdue.edu/.

\(^3\) I will provide you with instructions for downloading @Risk on your personal or work computer.
Grade Scale

I will assign grades for individual assignments and exams according to the following scale (all numbers listed are percentages): 97–100 = A+; 94–97 = A; 90–94 = A-; 87–90 = B+; 84–87 = B; 80–84 = B-; 77–80 = C+; 74–77 = C; 70–74 = C-; 67–70 = D+; 64–67 = D; 60–64 = D-; <60 = F. Final grades may be curved at my discretion, but no adjustments will be made to grades unless there is an error in their calculation.

Policy Statements

Attendance Policy

Attendance will not be formally monitored for this class. However, all students are expected to attend each class session except in cases of illness or emergencies.

Academic Honesty

Academic integrity is one of the highest values that Purdue University holds. Any student found to engage in academic dishonesty will be assigned a failing grade in the course and be referred to the Office of the Dean of Students. Individuals are encouraged to alert university officials to potential breaches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information that is submitted provides the greatest opportunity for the university to investigate the concern.

Counseling & Psychological Services Information

Purdue University is committed to advancing the mental health and wellbeing of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at (765) 494-6995 and http://www.purdue.edu/caps/ during and after hours, on weekends and holidays, or by going to the CAPS office of the second floor of the Purdue University Student Health Center (PUSH) during business hours.

Accessibility and Accommodations Statement

Purdue University strives to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, you are welcome to let me know so that we can discuss options. You are also encouraged to contact the Disability Resource Center by email at drc@purdue.edu or by phone at (765) 494-1247.
Course Schedule and Reading List

1. Introduction (Week 1)
   - Campbell and Brown (2016), Ch. 1
   - Champ et al. (2017), Ch. 1

2. Principles of Project Appraisal & Decision Rules (Week 1–2)
   - Campbell and Brown (2016), Ch. 2–3

3. Private/Financial Benefit-Cost Analysis (Weeks 3, 4)
   - Campbell and Brown (2016), Ch. 4–5

4. Economic/Social Benefit-Cost Analysis (Week 5)
   - Campbell and Brown (2016), Ch. 10

5. Risk and Uncertainty (Week 6, 7)
   - Campbell and Brown (2016), Ch. 9

6. Welfare Economics (Weeks 8–9)
   - Champ et al. (2017), Ch. 2

7. Nonmarket Valuation (Weeks 11–15)
   (a) The Hedonic Method
      - Champ et al. (2017), Ch. 7
      - Haab and McConnell (2002), Ch. 9
   (b) The Travel Cost Method
      - Champ et al. (2017), Ch. 6
      - Haab and McConnell (2002), Ch. 6–8
   (c) Contingent Valuation
      - Champ et al. (2017), Ch. 4
      - Haab and McConnell (2002), Ch. 2
   (d) Benefit Transfer
      - Champ et al. (2017), Ch. 11

8. The Social Discount Rate (Week 15)

9. Economic Impact Analysis (Week 15)
   - Campbell and Brown (2016), Ch. 12
Assignment Schedule

Due dates are listed in parentheses after each assignment title. All assignments must be uploaded to Blackboard before the first class period in the week listed. Due dates are subject to change, although plenty of notice will be given.

- Principles of Project Analysis (Week 3)
- Private Benefit-Cost Analysis (Week 5)
- Economic Benefit-Cost Analysis (Week 7)
- Risk and Uncertainty (Week 9)
- Welfare Economics (Week 10)\(^4\)
- Nonmarket Valuation I (Week 12)
- Nonmarket Valuation II (Week 14)
- Term Project (Week 16)

\(^4\)This is the week of Spring Break; please plan accordingly.