

# **AEDE 5330: BENEFIT COST ANALYSIS**

**Spring 2024**

**Instructor: Dr Nicholas Dadzie**

**Office: Rm 004 Ag Admin**

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**Office hours: Mondays and Wednesdays from 12:30pm to 1:30pm on Zoom**

**Meeting ID: 833 875 5144, Password: 411251 (or by appointment)**

**Lecture time and place: Mondays and Wednesdays: 3:55pm to 5:15pm**

**Location: Smith Lab 1048**

**Credit Hours: 3 credits:**

**Textbooks/Readings:** There is no required textbook for this course, but there are required readings and suggested readings (for your reference). Readings will come from a variety of sources. All required and suggested readings will be posted on Carmen.

**Course Description:** Benefit-cost analysis theory and methods and their application to projects pertaining to public infrastructure, agriculture, the environment, natural resources, and human health.

## **Learning Outcomes:**

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 and other types of project evaluations in your future work or academic study. By the end of this course, I expect that you will be able to:

- Recognize different project evaluation techniques and their strengths and weaknesses in various settings
- Understand the basic microeconomic theory related to project motivations and impacts
- Conduct simple quantitative benefit-cost analyses
- Critically analyze different elements of benefit-cost analyses
- Know where and how to access additional resource to use for benefit-cost analyses in your future work

**How Students Meet the Outcomes:** Students meet the learning outcomes by completing all assigned course readings; actively listening to all lectures; completing all assigned course work; and completing exams.

## Class Activities

**Reading Assignments and Class Participation:** you are expected to complete assigned readings before class so you can ask intelligent questions, provide answers to questions raised by the instructor and your colleagues, and participate actively in class discussion. We will also use TopHat for class participation.

**Problem Sets:** There will be four problem sets required throughout the semester. Each problem set will be some combination of mathematical and graphical analyses, short answer questions, and Excel exercises. These will help you better understand concepts discussed in class.

**Reading Responses:** There will be four reading responses throughout the semester. These should be submitted to Carmen. These short assignments will be quick checks to show you've done the required reading. It's also a chance to practice the critical thinking skills needed in your final case study paper.

**Midterm Exam:** There will be one in-class exam. Additional details will be given ahead of time. Note that the exam will be completed during the scheduled class time on that day.

**Case Study:** The case study assignment will focus on analyzing a real-life example of benefit-cost analysis. You may choose your own case, so begin thinking about what you might want to evaluate. More information on the case study will be posted to Carmen.

**Grading Scale:** This follows the standard grading scale.

| <u>Percentage</u> | <u>Grade</u> | <u>Percentage</u> | <u>Grade</u> |
|-------------------|--------------|-------------------|--------------|
| 93-100            | A            | 73-76.9           | C            |
| 90-92.9           | A-           | 70-72.9           | C-           |
| 87-89.9           | B+           | 67-69.9           | D+           |
| 83-86.9           | B            | 60-66.9           | D            |
| 80-82.9           | B-           | <60               | E            |
| 77-79.9           | C+           |                   |              |

## Distribution of Grades

|                                       | Percentage of Total Grade |
|---------------------------------------|---------------------------|
|                                       |                           |
| <i>Attendance &amp; participation</i> | 5%                        |
| <i>Problem Sets</i>                   | 35%                       |
| <i>Reading Responses</i>              | 15%                       |
| <i>Midterm Exam</i>                   | 25%                       |
| <i>Case Study</i>                     | 20%                       |
| Total                                 | 100%                      |

## Classroom policy:

- 1) Cell phones should not be used during class unless it is for a class-related activity. Please turn your phone off or put it on silent before class begins.
- 2) **Attendance is necessary.** Most of the concepts build upon each other and deliberately missing class would not make you get the best from the course. If you have to miss class for an acceptable reason (refer to student handbook), let the instructor know ahead of time.
- 3) **Test policies:**
  - a. Late work [for problem sets & reading responses] will have a 15% penalty for each day it is late. Submissions after 1 full week will have zero (0) points.
  - b. If there are extenuating circumstances which prevents on-time submission, exceptions can be made if supporting documentation are shown. In such cases, contact instructor as soon as possible.
- 4) **Academic Honesty:** Academic misconduct of any kind is not acceptable. The most common form of academic misconduct is plagiarism, defined as follows in the university's Code of Student Conduct: "Plagiarism is the representation of another's work or ideas as one's own; it includes the unacknowledged word-for-word use and/or paraphrasing of another person's work, and/or the inappropriate unacknowledged use of another person's ideas." For a detailed definition of academic misconduct, see [http://studentaffairs.osu.edu/resource\\_csc.asp](http://studentaffairs.osu.edu/resource_csc.asp). Also, read "Ten Suggestions for Preserving Academic Integrity" at <http://oaa.osu.edu/coamtensuggestions.html>. To resolve any doubt about what activities constitute academic misconduct and what procedures are followed, consult the instructor. All written assignments will be submitted over Carmen and will be subjected to an originality check that analyzes documents for plagiarism. Papers marked for plagiarism will be investigated.

- 5) **Disability Services:** Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; <http://www.ods.ohio-state.edu/>.

## Course Schedule:

| WEEK | DATE           | TOPICS   | READING       |
|------|----------------|--|---------------|
| 1    | 01/08<br>01/11 | Syllabus - Introduction<br>Introduction to Benefit-Cost Analysis (con't)                             |               |
| 2    | 01/17          | <b>MARTIN LUTHER KING DAY 01/15</b><br>Individual Consumer and Firm Behavior                         |               |
| 3    | 01/22<br>01/24 | Market Supply, Demand, Equilibrium, and Surplus<br>Measuring Benefits and Costs in Efficient Markets | RR 1          |
| 4    | 01/29<br>01/31 | Measuring Benefits and Costs: Market Failures<br>Measuring Benefits and Costs in Inefficient Markets | PROBLEM SET 1 |
| 5    | 02/05<br>02/07 | Measuring Benefits and Costs: Secondary Markets<br>Monetizing Impacts: Types of Value                |               |
| 6    | 02/12<br>02/14 | Monetizing Impacts: Regression Analysis<br>Revealed Preference: Experiments and Quasi-Experiments    | RR 2          |
| 7    | 02/19<br>02/21 | Revealed Preference: Travel Cost Method<br>Stated Preference: Contingent Value                       | PROBLEM SET 2 |
| 8    | 02/26<br>02/28 | Stated Preference: Choice Experiments<br>Benefit Transfer  |               |
| 9    | 03/04<br>03/06 | Review Session<br><b>MIDTERM – EXAM</b>  | RR 3          |
| 10   |                | <b>SPRING BREAK – 03/11 to 03/15</b>   |               |
| 11   | 03/18<br>03/20 | Discount rates<br>Discounting for Time   | PROBLEM SET 3 |
| 12   | 03/25<br>03/27 | Net Present Value  |               |
| 13   | 04/01<br>04/03 | Internal Rate of Return & Benefit cost ratio   | RR 3          |
| 14   | 04/08<br>04/10 | Value of statistical life  | PROBLEM SET 4 |
| 15   | 04/15<br>04/17 | Cost effectiveness<br>Sensitivity analysis   |               |
| 16   | 04/22          | <b>Case Study Due (No Final Exam)</b>  |               |

## **COURSE POLICIES**

### **Feedback and response time**

- **E-mail:** I will reply to e-mails within **36 hours on school days**.
- **Problem sets** will be graded, and grades shared within one week after submission.

### **Discussion and communication guidelines**

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

#### **Tone and civility:**

Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across well.

#### **Citing your sources:**

When we have academic discussions, problem sets or case studies, please cite your sources to back up what you say. (For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.)

### **Course Technology:**

OSU IT Service desk is responsible for password, email, Carmen or any other technology issue, questions or requests. Standard support hours and urgent issues support is available 24 x7.

- **Self-Service and Chat support:** (<http://ocio.osu.edu/selfservice>)
- **Phone:** 614-688-HELP (4357)
- **Email:** [8help@osu.edu](mailto:8help@osu.edu)
- **TDD:** 614-688-8743

**UNIVERSITY POLICIES** see: <https://ugeducation.osu.edu/faculty-and-staff-resources> for current versions

**Academic Misconduct:** It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct at [Student Life](http://studentconduct.osu.edu) <http://studentconduct.osu.edu>.

**Ohio State's academic integrity policy:** Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's *Code of Student Conduct*, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the University, or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University's *Code of Student Conduct* is never considered an "excuse" for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

**If I suspect that a student has committed academic misconduct in this course, I am obligated by University Rules to report my suspicions to the Committee on Academic Misconduct.** If COAM determines that you have violated the University's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- The Committee on Academic Misconduct web pages ([COAM Home](#))
- *Ten Suggestions for Preserving Academic Integrity* ([Ten Suggestions](#))
- *Eight Cardinal Rules of Academic Integrity* ([www.northwestern.edu/uacc/8cards.htm](http://www.northwestern.edu/uacc/8cards.htm))

### ***Copyright disclaimer***

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

**Intellectual Property** (covered by copyright) includes Course materials (Text, Audio, Video, Multimedia, Sims, Apps, etc.), and Student Generated materials

### **Disability Services:**

**The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: [slds@osu.edu](mailto:slds@osu.edu); 614-292-3307; [slds.osu.edu](http://slds.osu.edu); 098 Baker Hall, 113 W. 12<sup>th</sup> Avenue.**

### **Diversity:**

**The Ohio State University affirms the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. We are committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among each member of our community; and encourages each individual to strive to reach his or her own potential. Discrimination against any individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.**



## Requesting accommodations

If you would like to request academic accommodations based on the impact of a disability qualified under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, contact your instructor privately as soon as possible to discuss your specific needs. Discussions are confidential.

In addition to contacting the instructor, please contact the Student Life Disability Services at [614-292-3307](tel:614-292-3307) or [ods@osu.edu](mailto:ods@osu.edu) to register for services and/or to coordinate any accommodations you might need in your courses at The Ohio State University.

Go to [Office of Student Life - Disability Services](#) for more information.

## Accessibility of course technology

This online course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- [Carmen \(Canvas\) accessibility](#)
- Streaming audio and video
- Synchronous course tools
- [Definition OSU](#)
- [Overview of Accessibility at OSU](#)
- If you require specific software for the course list or provide a link to the software's accessibility privacy statements
  - [Adobe Connect \(Carmen Connect\) Accessibility](#) [Adobe Privacy Policy](#)
  - [MediaSite Accessibility Statement](#)
  - [Microsoft Office Accessibility](#) [Microsoft Office 365 Privacy](#)
  - [Proctorio Accessibility](#) [Proctorio Privacy](#)
  - [Top Hat Accessibility](#) [Top Hat Privacy](#)

## UNIVERSITY RESOURCES:

### Counseling and Consultation Services:

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting [ccs.osu.edu](https://ccs.osu.edu) or calling 614-292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available

through the 24/7 National Suicide Prevention Hotline at 1-800-273-TALK or at [suicidepreventionlifeline.org](https://suicidepreventionlifeline.org).

### **Title IX:**

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at [titleix.osu.edu](https://titleix.osu.edu) or by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at [titleix@osu.edu](mailto:titleix@osu.edu).