

# THE AMERICAN UNIVERSITY

## School of Public Affairs

PUAD 671 – Cost Benefit Analysis  
Spring Semester, 2012  
Class meetings: Thursdays: 8:10 - 10:40 pm  
Class: Ward 304  
[aubourg@american.edu](mailto:aubourg@american.edu)

Dr. René W. Aubourg  
Office: Ward 348  
(202) 885-2372  
Office hours: T: 3 - 5 pm,  
W: 3 - 5 pm, TH: 6 - 8: pm or by  
appointment

### **COURSE DESCRIPTION AND OBJECTIVES**

This course provides a systematic and rigorous introduction to the theoretical foundations of cost-benefit analysis (CBA), its associated analytical techniques, and practical applications. We will be concerned with the appraisal of projects for businesses, non-profit organizations, and governments from a public interest or societal viewpoint as opposed to purely conventional financial appraisal which tends to have a much more narrow (private interest) focus. We will consider numerous applications of CBA in various fields including infrastructure projects, international development, safety regulations, and environmental management. Our approach will combine case study illustrations from these fields and hands-on learning experience using spreadsheet (EXCEL) simulation exercises. At the conclusion of the semester, you will be able not only to critically evaluate published articles and technical reports on CBA but also to conduct your own CBA, and to understand its limitations.

### **REQUIRED TEXTBOOKS**

- Boardman, Anthony E., David H. Greenberg, Aidan R. Vining, and David L. Weimer. Cost-Benefit Analysis: Concepts and Practice. 4<sup>th</sup> edition. Pearson-Prentice Hall, 2011. Hereafter this textbook will be referred to as BGVW.
- Campbell, Harry and Richard Brown. Benefit-Cost Analysis: Financial and Economic Appraisal Using Spreadsheets. Cambridge University Press. 2003.
- Supplemental readings as assigned.

### **LEARNING METHODS**

Class sessions will typically consist of lectures, class discussions, case study analysis, and in-class problem solving. The assigned readings from the required textbooks will provide the structure for the course but the lectures will not necessarily follow them in a strict sense. At times, I will draw from my own experience and from other sources such as the supplemental readings to complement reading materials from the textbooks. The role of the lectures is to clarify, reinforce, and complement certain aspects of the reading materials. What this implies is that in order to take full advantage of the lectures, you must complete the reading assignments before attending class.

**Please note that it is imperative that you bring the textbooks to class so that we can do the exercises at the end of the chapters.**

## **BLACKBOARD**

Various assignments and documents will be posted on Blackboard. Please make sure that your AU computer account is configured to access Blackboard and to receive e-mails.

## **EVALUATION**

Assessment of performance leading to the final grade is based on a combination of the following components:

Analytical individual take-home assignments (2)	25%
Midterm and final exams	40%
CBA technical report (group project)	30%
Class participation and un-graded homework practice sets	5%
Total	<hr/> 100%

## **GRADING SCALE**

94 and above	A	Excellent
90-93	A-	Very Good
87-89	B+	Good
84-86	B	Acceptable
80-83	B-	Needs significant improvement
77-79	C+	
74-76	C	

## Course Outline

Date	Topics	Assignment Due Date
January 19	Introduction to Cost Benefit Analysis Conceptual Foundations of Cost Benefit Analysis <u>Readings:</u> BGVW, chapters 1 and 2; Campbell and Brown, chapter 1	
January 26	Welfare Economics Foundations of Cost Benefit Analysis <u>Readings:</u> BGVW, chapters 3 Pearce, David, Giles Atkinson, and Sousana Mourato. Cost Benefit Analysis and the Environment. OECD 2006, chapter 2 (available on Blackboard) Farrow, Scott and Michael Toman. Using Environmental Cost Benefit Analysis to Improve Government Performance. Discussion paper 99-11. Resources for the Future. 1998 (available on Blackboard)	
February 2	Valuing Benefits and Costs in Primary Markets <u>Readings:</u> BGVW, chapter 4	
February 9	Valuing Benefits and Costs in Primary Markets (continued) <u>Readings:</u> BGVW, chapter 4	First Assignment
February 16	Project Appraisal: Financial Calculations <u>Readings:</u> BGVW: chapter 6; Campbell and Brown, chapter 2	
February 23	Project Appraisal: Financial Calculations (continued) <u>Readings:</u> BGVW: chapter 6; Campbell and Brown, chapter 2	
March 1	Project Appraisal: Decision Rules <u>Readings:</u> BGVW: chapter 6; Campbell and Brown, chapter 3 Pearce, David, Giles Atkinson, and Sousana Mourato. Cost Benefit Analysis and the Environment. OECD 2006, chapter 3 (available on Blackboard).	
March 8	<b>Midterm Exam</b>	
March 15	No Class – Spring Break	
March 22	Valuing Benefits and Costs in Secondary Markets <u>Readings:</u> BGVW, chapter 5	Group project distribution
March 29	Project and Private Cost Benefit Analysis <u>Readings:</u> Campbell and Brown: chapter 4 <u>EXCEL Exercise:</u> Appraisal of the ICP project from the perspective of private equity holders	
April 5	Efficiency Cost Benefit Analysis <u>Readings:</u> Campbell and Brown, chapter 5 <u>EXCEL Exercise:</u> Appraisal of the ICP project (taking into account shadow pricing)	
April 12	Referent Group or social Cost Benefit Analysis <u>Readings:</u> Campbell and Brown, chapters 6 and 7 Siegfried, John, and Andrew Zimbalist. 2000. “ The Economics of Sports Facilities and their Communities” <i>Journal of Economic Perspectives</i> vol. 14 no. 3, pp.95-114 <u>EXCEL Exercise:</u> Appraisal of the ICP project from a social perspective (the public sector and project beneficiaries).	Second Assignment
April 19	Dealing with Uncertainty : Expected Values, Sensitivity Analysis, and the Value of Information <u>Readings:</u> BGVW, chapter 7 “Chapter 13: Uncertainty” in Perloff, Jeffrey M. Microeconomics (6 <sup>th</sup> edition). 2012. Addison- Wesley Publishers (available on Blackboard)	
April 26	Group project Presentations	Group Projects
May 3	<b>Final Exam</b>	

**Remark:** Guidelines for the homework assignments, the group project, the midterm exam, and the final exam will be available on Blackboard.

**Important Notice:**

- Take-home assignments are due at the beginning of the class at the scheduled date.
- For the group project, all contributors to the collective assignment will receive the same grade.

**Academic Integrity**

You are strongly encouraged to work in groups to solve the practice problem sets and the EXCEL simulation exercises that will be distributed in class. This will help you better understand the course concepts covered in class. However, all assignments except for the CBA group project which is a team assignment, must reflect only individual work. For your information, I have reprinted below the following excerpts taken from pages 5 and 6 of the university's academic integrity code for standards regarding academic conduct in matters related to the following violations:

- **Plagiarism**

“ To plagiarize is to use the work, ideas, or words of someone else without attribution. Plagiarism may involve using someone else's wording without using quotation marks – a distinctive name, a phrase, a sentence, or an entire passage or essay. It may also involve misrepresenting the sources that were used.”

- **Dishonesty in examinations (in-class or take-home)**

“ An examination is to be solely a student's own work, unless otherwise directed by the instructor. No communication is allowed between or among students, nor are students allowed to consult books, papers, study aids or notes without explicit permission. Cheating includes, but is not limited to, copying from another's paper; giving unauthorized assistance; obtaining unauthorized advance knowledge of questions to an examination; or use of mechanical or marking devices or procedures for the purpose of achieving false scores on machine graded examinations.”

- **Dishonesty in papers**

“ Students are prohibited from submitting any material prepared by or purchased from another person or company. All papers and materials submitted for a course must be the student's original work, unless the sources are otherwise cited.”