Introduction

How should public decision-makers deploy scarce resources to achieve the “greatest good”? This question can neither be definitively answered, or avoided, an uncomfortable paradox which forces imperfect decision-making.

Benefit-Cost Analysis (BCA) offers a number of benefits in the role of an imperfect decision-making aid. It raises the accounting profile of cost and benefit categories often neglected in other appraisals; reveals certain transactions as “transfers” that net out of the conventional social accounting; and indicates the distributional impacts of a project on impacted stakeholders. Above all, benefit-cost analysis offers a conceptually-consistent framework for evaluating the trade-offs associated with alternative resource deployments.

On the negative side of the ledger, politicians, advocates, and other stakeholders may regard BCA as offering a more definitive guide than it does – if the conclusions of the analysis comport with stakeholder’s preconceptions, policy goals, or political beliefs. The opposite problem may also arise: even when the conclusions of BCA strongly justify a particular recommendation, the recommendation may not be politically acceptable. A cost-benefit analysis which has no effect on decision-making wastes resources, in the sense that the effort to produce the analysis could have been used for some other purpose yielding some measurable value.

This course has two principal objectives. First, to develop the conceptual framework underlying conventional benefit-cost analysis and to explain the associated analytic techniques. Students develop the knowledge to understand and conduct project appraisals. The second is to provide the methodological sophistication and philosophic perspective needed for credibly interpreting benefit-cost analysis.

Underlying these objectives is the overarching goal to develop the student’s ability to think analytically about public decision-analysis, and to understand and appreciate the value of “evidence-based” public-decision making.
Course Structure

The course has seven parts:

Unit I: Introduction/Core Elements/ Microeconomics Review (Weeks 1-3)
Unit II: BCA Accounting Framework (Week 4)
Unit III: Investment Analysis (Weeks 5-6)
Unit IV: BCA Applications and Shadow Pricing Extensions (Weeks 7-8)
Unit V: Benefit Valuation (Weeks 9-10)
Unit VI: Distribution and Politics — Best Practices and New Standards (if time) (Weeks 11-12)
Unit VII: Student Presentations (Weeks 13-15)

Unit I introduces the course and reviews some microeconomic theory particularly relevant to BCA application. A short take-home test is used to solidify the concepts.

Unit II introduces fundamental BCA concepts, and develops the Kaldor-Hicks Tableau format for distributional accounting. A short take-home test is again used to nail down the essential concepts.

Unit III covers the fundamentals of intertemporal decision-making -- the defining characteristic of investment analysis. A somewhat longer take-home exam is used to solidify the concepts covered in this unit.

Unit IV extends the previously-covered material, focusing in more detail on the concept of shadow pricing. Concepts are demonstrated in a case study. Students then complete a graded case assignment on a worker-training program.

Unit V focuses on the theory of benefit measurement and the empirical methods used for eliciting valuations of public goods lacking market prices. Students conduct a statistical analysis of survey data generated using a contingent valuation study to nail down the concepts in this unit.

Unit VI reviews normative issues associated with BCA decision-criteria, and explores the political and distributional issues associated with BCA application. A critique of a BCA performed by the consulting firm “Cambridge Systematics” reinforces the essential points developed in this unit.

If there is time, the last lecture of this unit will summarize the important concepts developed in the course by reviewing “best practices and new standards” for conducting benefit-cost analysis.

We then proceed to the student presentation period -- the best part of the course. The presentations are based on a final research project of your choosing (discussed below). The presentations introduce a tremendous amount of new information; further solidify the concepts introduced in lectures; and allow everyone to witness the extensive application of the BCA paradigm.

Class Format
Weeks 1-12 are based on a series of lectures and informal class discussions. I encourage you to ask questions and otherwise participate fully in class. From time to time I may schedule outside-the-class workshops on particular topics, e.g., spreadsheet application for investment analysis.

Weeks 13-15 are dedicated to student presentations.

I encourage group study and collaboration throughout the course. I will clarify the rules for such collaboration for each take-home assignment.

Readings Materials

There are four types of course materials:

1. Lecture notes posted on ONCOURSE and compiled into a course packet. (Lecture slides are also posted on ONCOURSE).
2. Handout supplements to lecture notes (distributed from time to time).
3. Required readings (book chapters/journals articles) posted on ONCOURSE.
4. Case assignments posted on ONCOURSE, or otherwise distributed.

Four BCA manuals, developed by various governmental organizations and think tanks, are also posted on ONCOURSE. Refer to any of these guidelines to help clarify topics discussed in class, or to use as a reference otherwise.

Graded Assignments

Grades will be based on the following assignments:

<table>
<thead>
<tr>
<th>Item</th>
<th>Assigned</th>
<th>Due</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Test 1: Core Elements/Microeconomics</td>
<td>W 1/27</td>
<td>M 2/1</td>
<td>8%</td>
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<tr>
<td>Test 2: BCA Accounting Framework</td>
<td>W 2/3</td>
<td>M 2/8</td>
<td>8%</td>
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<tr>
<td>Test 3: Investment Analysis</td>
<td>W 2/10</td>
<td>M 2/22</td>
<td>12%</td>
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<tr>
<td>Final Paper Abstract</td>
<td>M 1/11</td>
<td>M 2/17</td>
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<tr>
<td>Case 1: Worker-Training Program</td>
<td>M 2/24</td>
<td>W 3/10</td>
<td>15%</td>
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<tr>
<td>Case 2: Contingent Valuation of</td>
<td>M 3/22</td>
<td>M 3/29</td>
<td>12%</td>
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<td>John-Day Steelhead Fishery</td>
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<tr>
<td>Case 3: Critique Cambridge Systematics BCA</td>
<td>W 3/31</td>
<td>M 4/12</td>
<td>10%</td>
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<tr>
<td>Final Paper</td>
<td>M 1/11</td>
<td>M 4/19</td>
<td>30%</td>
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<tr>
<td>Paper Presentations</td>
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Graded Assignments (continued)

Note that assignments up to three days late will lose a half a grade point. Assignments from 4-7 days late will lose a full grade point. Assignments more than a week late will not be accepted.
The grading standard for PhD students will be appropriately more stringent than for master students, and the final paper requirement more substantial (see below). Please discuss the particulars with me if you have any questions.

Final Papers

A final paper is required. It is due **Monday April 19**. You should begin thinking about this paper as soon as possible. An abstract, *with the paper’s title*, is due in class **Wednesday February 17**. The abstract should provide a one or two paragraph summary of the paper topic. It can also provide one or two paper proposals, if you want some feedback about topic alternatives.

The final paper can be on any topic related to cost-benefit analysis. See Attachment 1 of this syllabus for some idea of the diversity of topics students have researched in past classes. I have also attached a presentation schedule from a past class to again give you an idea of the topical range of the final papers, as well to give you some insight about the format of the final presentation period itself.

Traditionally, final papers have fallen into the following categories:


5. **Critique of a BCA or CEA.** Example: “The Chesapeake Bay and Delaware Canal Deepening Feasibility Study. A Case Study of the Corps of Engineers Approach to BCA.”

Final Papers (continued)

6. **Qualitative Case Study.** Describes a policy or project decision issue and the way BCA or CEA was or wasn’t used as part of the decision process. Examples: “An Evaluation of the Use of BCA to Evaluate the Critical Establishment of Habitat under the Endangered Species Act;” “The Kalamazoo Promise: A Case Study.”
7. Methodology Study. Assesses a methodology issue in BCA or CEA. A past example: “Monte Carlo Simulations in Benefit-Cost Studies.”

See “Model Papers” folder on ONCOURSE for representative samples of student papers in each of these categories. You should try to read all of these papers over the course of the semester, to get a sense of the standard I am looking for, and to witness the range of applications of the BCA and CEA analytical perspectives students have employed. Reading these papers will deepen the level at which you understand the course material and, like the presentations, help you see the topical range of the BCA paradigm.

Reading the model papers in the categories 2, 3, or 4 – that is, reading papers that are analyzing a particular project or policy decision --will also reveal an analytical perspective that is neutral beforehand about the outcome of the analysis. The goal is to discover whether the project or policy is socially beneficial on net. That approach contrasts with the advocacy orientation often found in the “real world” in which evidence is selectively sifted and analysis skewed to justify preconceived views. It is easy for students initially to adopt something close to an advocacy perspective, because they often select projects – a community recycling program, green building design for example – that they philosophically support, and in which they have a degree of emotional investment. Regardless of your feelings about your project before (or after) your analysis, the analysis itself must be motivated to discover an answer -- rather than produce a result –and demonstrate the level of analytical rigor and careful interpretation of evidence required to convince a skeptical reader of the credibility of conclusions.

If you are interested in locating a benefit-cost analysis or cost-effectiveness analysis in your interest area, you might check out the web site of one of the several organizations/think-tanks that focus on analytical policy analysis, such as Resources for the Future (RFF), www.rff.org, The Rand Corporation, www.rand.org, or Abt Associates, http://www.abtassociates.com/. The web pages of many federal agencies, as well as some multi-lateral lending institutions, such as the World Bank, also contain cost-benefit analyses. Google searching on your topic of interest and “benefit” or “cost” is likely to turn up more hits than you can deal with.

The final papers can be written individually, or you can collaborate with one or two other classmates.

For MPA students, individual papers should be about 15 pages double space, with conventional margins, exclusive of references, tables, and figures.

For PhD students, individual papers should be about 20 pages double space, with conventional margins, exclusive of references, tables, and figures.

Final Papers (continued)

For papers with two coauthors, the page length can be about 25 pages (master students) and 35 pages (PhD students).

For papers with three coauthors, the page length can be about 35 pages (master students) and 50 pages (PhD students).
The final paper should be explicitly broken down into sections and subsections as follows:

Title Page:
Abstract Page
Table of Contents Page
1. Introduction
2. Background
3. First major topic
   3.1
   3.2
   etc.
4. Second major topic, etc.
5. Conclusion
References

NOTE: it is important that the introduction clearly states the paper’s purpose, and that the last paragraph of the introduction provides an EXPLICIT “road-map” of the structure of the paper that follows. That is, the last paragraph of the introduction should tell the reader that Section 2 does X, Section 3 does Y, Section 4 Does Z, etc. A paper without a clearly-stated purpose in the introduction, and lacking an explicit orientation about the paper’s structure in the final paragraph, will be marked down at least one-half letter grade.

Note that you must diversify your sources to include journal articles, book chapters, government documents, etc., like those included in the course readings. Do not just include three or four project documents as references. You must complement project documentation with the broader perspective coming from academic literature.

NB. Wikipedia citations are not peer-reviewed and are not necessarily credible. I will not accept papers with Wikipedia citations.

In recent years, I have encountered student papers which come close to plagiarizing web-based references by copying and pasting these sources, with ONLY MINOR changes. Plagiarism is a serious academic violation for which a student can be expelled from this university. Please consult your academic handbook about plagiarism and its consequences.

Follow this referencing format for your final papers: First, alphabetize your references in the reference section of the paper. Articles from the web should be alphabetized along with the others, and the web address indicated. Second, attach a number to these references in the reference section of the paper based on the alphabetical ordering. Finally, use the numbers in the body of the paper for citation, e.g., Marijuana smoking increased last year in the United States by 20% [17].
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<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Event</th>
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<td></td>
<td><strong>Unit 1: Introduction/Core Elements/Microeconomics Review</strong></td>
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<td><strong>Week 1</strong></td>
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<tr>
<td>M 1/11</td>
<td>Course Introduction/BCA Overview</td>
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<td>W 1/13</td>
<td>Core Elements</td>
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<td><strong>Week 2</strong></td>
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<td>M 1/18</td>
<td>Martin Luther King’s Day (No Class)</td>
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<td>W 1/20</td>
<td>Core Elements/Microeconomics Review</td>
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<td><strong>Week 3</strong></td>
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<td>M 1/25</td>
<td>Microeconomics Review</td>
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<td>W 1/27</td>
<td>Microeconomics Review</td>
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<td><strong>Unit 2: BCA Accounting Framework</strong></td>
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<td><strong>Week 4</strong></td>
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<td>M 2/1</td>
<td>BCA Accounting Framework</td>
<td>Test 1 Due</td>
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<tr>
<td>W 2/3</td>
<td>BCA Accounting Framework</td>
<td>Test 2 Assigned</td>
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<td><strong>Unit 3: Investment Analysis</strong></td>
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<td><strong>Week 5</strong></td>
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<td>M 2/8</td>
<td>Introduction to Investment Analysis</td>
<td>Test 2 Due</td>
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<tr>
<td>W 2/10</td>
<td>Inflation/ Alternative Investment Criteria</td>
<td>Test 3 Assigned</td>
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<td><strong>Week 6</strong></td>
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<td>M 2/15</td>
<td>Alternative Investment Investment Criteria</td>
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<tr>
<td>W 2/17</td>
<td>Cost of Capital/Unit 3 Conclusion</td>
<td>Paper Abstract Due</td>
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<td>Week</td>
<td>Topic</td>
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<td><strong>Unit 4: BCA Applications and Shadow Pricing</strong></td>
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<td>Week 7</td>
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<td>M 2/22</td>
<td>Shadow Price Intro/Cincinnati Case Overview</td>
<td>Test 3 due</td>
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<td>W 2/24</td>
<td>Worker Case Training overview</td>
<td>Case 1 Assigned</td>
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<td>Week 8</td>
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<td>M 3/1</td>
<td>Shadow Pricing</td>
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<td>W 3/3</td>
<td>Shadow Pricing</td>
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<td><strong>Unit 5: Benefit Valuation</strong></td>
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<td>Week 9</td>
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<td>M 3/8</td>
<td>Introduction to Valuation</td>
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<tr>
<td>W 3/10</td>
<td>Money Metrics</td>
<td>Case 1 due</td>
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<td>Week 10</td>
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<td>SPRING BREAK</td>
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<td>M 3/22</td>
<td>Case 2 Overview</td>
<td>Case 2 assigned</td>
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<tr>
<td>W 3/24</td>
<td>Valuation Continued</td>
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<td><strong>Unit 6 – Distribution and BCA</strong></td>
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<td>Week 11</td>
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<tr>
<td>M 3/29</td>
<td>Distribution and BCA</td>
<td>Case 2 Due</td>
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<tr>
<td>W 3/31</td>
<td>Case 3 Overview</td>
<td>Case 3 Assigned</td>
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<td>Week 12</td>
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<tr>
<td>M 4/5</td>
<td>Distribution and BCA</td>
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<tr>
<td>W 4/7</td>
<td><strong>Bests Practices and New Standards (if time)</strong></td>
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Semester Schedule (continued)
### Presentation Period (Weeks 13-15)

**Week 13**

| M | 4/12 | Student Presentations | Case 3 Due |
| W | 4/14 | Student Presentations  |
|   |      | (Outside-Class Presentation Periods as needed) |

**Week 14**

| M | 4/19 | Student Presentations | Final Paper Due |
| W | 4/21 | Student Presentations  |
|   |      | (Outside-Class Presentation Periods as needed) |

**Week 15**

| M | 4/26 | Student Presentations |
| W | 4/28 | Student Presentations  |
|   |      | (Outside-Class Presentation Periods as needed) |
Readings

Unit I: BCA Introduction/Core Elements/Microeconomics Review
Lecture notes

Unit II: BCA Accounting Framework
Lecture notes
Howe, C.W., Project benefits and costs from national and regional viewpoints: Methodological issues and case study of the Colorado-Big Thompson Project, Natural Resources Journal 26: 77-93, 1986

Unit III: Investment Analysis
Lecture Notes. Refer to web-posted BCA guidelines as necessary

Unit IV: BCA Applications and Shadow Pricing Extensions
Lecture Notes

Unit V: Benefit Valuation
Lecture Notes

Readings (continued)
Unit VI: Distribution and Politics

Lecture Notes


Best Practices and New Standards (if time)

OMB Circular A-4, September 17, 2003


Attachment 1: Some final paper topics from a previous year

The Use of Cost-Benefit Analysis in the Valuation of Dam Decommissioning for Restoration of Salmon Runs on the Columbia and Snake Rivers
An Analysis of Court-Ordered Desegregation in St. Louis, Missouri
Cost Benefit Analysis Applied to Micro Credit Program Evaluation
Valuation in Health-Care Cost-Effectiveness, Cost-Utility, and Cost-Benefit Analysis
Marginal Valuation of Ecosystem Services
The Kyoto Protocol: Application of Interest-Based Regime Formation and Cost-Benefit to Ratification Decisions
Risk Determination and the Use of Economic Analysis in Superfund Remediation Projects
Using a Zero Discount Rate in Cost-Benefit Analysis: Is it Appropriate and Feasible in the Intergenerational Equity.
A Critique of the Cost-Benefit Analysis of the Kunda Cement Factory, Estonia
An Economic Analysis of Sports Stadium Subsidies
Salmon Recovery in the Pacific Northwest
Cost Analysis of Department of Energy Plans for the Conversion of Depleted Uranium Hexafluoride
Prison Privatization: Is it really Cost-Effective?
The Costs and Benefits of Adopting the Death Penalty
World-Bank Project Appraisal and Environmental Evaluation
A Qualitative and Quantitative Study of the Costs and Benefits of Urban Sprawl
Cost-Benefit Analysis of the El Sauz Water Project
Benefit-Cost Analysis of New York City’s Syringe Exchange Program
Environmental Regulation and International Competitiveness
Columbia River Economic Analysis and the Fish and Wildlife Decision-making Progress
Considering the Cost Estimates for Climate Change Mitigation
The EPA Acid Rain Program: The Costs and Benefits
The Costs and Benefits of Federal Regulation
Estimation Methods of the Marginal Valuation of Safety
International Environmental Conservation and Free Trade: An Analysis of Potential Conflicts and Solutions
Attachment 2: Presentation Schedule, Week 13, Fall 2009 (TBA)

Attachment 3: Writing Style

Grades for case write-ups and the final paper will be based both on the rigor of the analysis and on the clarity of the presentation. Here are some basic writing principles: Avoid redundancy. Select words to precisely describe the meanings and nuances you wish to convey. Develop themes clearly and logically. Use adverbial and adjectival qualifiers judiciously, e.g., “brilliant,” rather than “incredible genius,” “poses a risk,” rather than “threatens all humanity.” Finally, use the active voice most of the time.

FYI, here is a sample of bad writing and why it is bad:

“The government refocused its influence in the agricultural sector by implementing policies such as more rigid production controls, lowering support prices, and more measures intended to increase demand, like school lunch and food welfare programs. Surpluses were lowered, but not significantly. In a related fashion, an exporting program to rid the government of surpluses was implemented. Yet these practices were seen as “dumping” measures to the lesser-developed nations who unavoidably received the surpluses.”

I would give this passage a C grade for the following reasons:

1. It is wordy;
2. It uses the passive voice too much;
3. The language is not precise.

Here is an improved re-write:

“Consequently, the government implemented a battery of policies to reduce growing food surpluses. On the supply side, the government reduced support prices and instituted more rigid production controls. On the demand side, the government started two new programs: school lunch and welfare. Additionally, the government began subsidizing agricultural exports.

Unfortunately, these efforts had little effect. Surpluses dropped, but not significantly. Further, the export promotion program had an obvious side effect: it increased competition for struggling third-world exporters. This consequence undermined other U.S. policies designed to promote economic development in these countries.”

See me if you have any questions about the writing expectations, or contact Campus Writing Tutorial Services, Ballantine 206 (855 6738) to set up an appointment.
Attachment 4: Presentation guidelines

The presentations are a way to informally share the results of your research with your classmates, and encourage intellectual exchange. You do not need to dress up.

If you are concerned about your grade, giving a clear, high quality presentation is a good way to raise it.

In an ideal world, you would use an already-completed paper as the basis of your presentation. In a less-than-ideal world, you can simply present the intermediate results you have. In that case, comments on your presentation will offer some useful feedback for completing your final paper.

The TOTAL time allotted for single-authored presentations is 20 minutes. The presentation itself should be 10-12 minutes. Five minutes are available for Q & A. Five minutes for moving back and forth between the class itself and the front of the class for speaking.

For multiple-authored presentations, the times increases proportionately:

2-authored presentations: approximately 20-25 minutes for the presentation itself; 10 minutes for questions; Total time=40 minutes.

3-authored presentations: approximately 30-35 minutes for the presentation itself; 15 minutes for questions; total time = 60 minutes.

Your presentation should be organized as follows. The first slide should give the presentation title, and your name. The second, an outline of the presentation. The third begins the presentation itself. Do not put too much text on slides. Summarize points, so the class can easily read them.

You can, of course, use cue cards or whatever aids you need to conduct the presentation.

For students using this presentation to satisfy the MSES presentation requirements, let me know, to make sure the scheduled time length is appropriate.
Attachment 5: V541 Survey

I. Willingness to Pay for Rentals (Only answer this if you are renting)

a. my current monthly rent is: _______________

b. I would move out of my house when the lease expired if my landlord raised the rent to a TOTAL FIGURE of: