ECONOMIC EVALUATION II
Course 313.602: Monday, Wednesday 3:30 - 4:50pm
Wolfe Street W2008

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Office Hours
TBD or by appointment

COURSE DESCRIPTION
Cost-effectiveness analysis (CEA) is a multidisciplinary science which aims to systematically and rigorously compare health interventions to reach optimal decision-making. Rooted in economic theory, decision science and statistics, CEA (and related methodologies) continue to evolve into a diverse toolkit of techniques that allow us to better quantify costs and effects of healthcare technologies and public health interventions.

This course extends the theory presented in Economic Evaluation I, and will expose students to intermediate methodology for conducting CEA with an emphasis on studying applied examples. We will learn to build decision tree models in Excel, as well as practice reading, interpreting and critically appraising public and published CEA.

In the course you will complete a term long project critiquing a published report from the Institute for Clinical and Economic Review (ICER - https://icer-review.org/about/). This project will consist of completing the 2nd Panel Impact Inventory template (page 351 Second panel) with associated write up explaining how and why certain decisions were made. Additionally, to practice modeling, students will be required to create a decision tree model mirroring the problem explored in the chosen ICER report. Further details will be provided the 3rd week of class.
COURSE LEARNING OBJECTIVES
Upon successfully completing this course, students will be able to:

1. Identify the key components of CEAs and critically review CEA and related literature
2. Learn to construct decision tree models
3. Quantify, visualize and communicate the effects of uncertainty in CEA
4. Understand the role of health technology appraisal both within and outside the United States
5. Discuss examples of ethical issues that can arise in applying economic evaluation to the allocation of societal health care resources

INTENDED AUDIENCE
Masters and doctoral students with strong interest in health economics and outcomes research

METHODS OF ASSESSMENT
Homework assignments and Labs (20%); class participation and pop quizzes (10%); ICER Critique (30%); midterm (15%); and final exam (25%).

PREREQUISITES
Econ Evaluation I-313.601

INSTRUCTOR CONSENT
No consent required.

ACADEMIC ETHICS AND STUDENT CONDUCT CODE
Students enrolled in the Bloomberg School of Public Health of The Johns Hopkins University assume an obligation to conduct themselves in a manner appropriate to the University's mission as an institution of higher education. A student is obligated to refrain from acts which he or she knows, or under the circumstances has reason to know, impair the academic integrity of the University. Violations of academic integrity include, but are not limited to: cheating; plagiarism; knowingly furnishing false information to any agent of the University for inclusion in the academic record; violation of the rights and welfare of animal or human subjects in research; and misconduct as a member of either School or University committees or recognized groups or organizations.

Students should be familiar with the policies and procedures specified under Policy and Procedure Manual Student-01 (Academic Ethics), available on the school’s http://my.jhsp.edu portal.

The faculty, staff and students of the Bloomberg School of Public Health and the Johns Hopkins University have the shared responsibility to conduct themselves in a manner that upholds the law and respects the rights of others. Students enrolled in the School are subject to the Student Conduct Code (detailed in Policy and Procedure Manual Student-06) and assume an obligation to conduct themselves in a manner which upholds the law and respects the rights of others. They are responsible for maintaining the academic integrity of the institution and for preserving an environment conducive to the safe pursuit of the School's educational, research, and professional practice missions.
DISABILITY SUPPORT SERVICES
If you are a student with a documented disability who requires an academic accommodation, please contact the Office of Disability Support Services at 410-502-6602 or via email at JHSPH.dss@jhu.edu. Accommodations take effect upon approval and apply to the remainder of the time for which a student is registered and enrolled at the Bloomberg School of Public Health.
SYLLABUS

(*) Denotes Optional Reading
All readings are available on eReserves at Welch Library

Week 1a: Course Overview /Decision Analytic Modeling and Trees (10/29)
Drummond Chapter 9: 9.1-9.4.4.5
Applied: None
*Overview of the ICER value assessment framework and update for 2017-2019

Week 1b: Decision Trees and Uncertainty in CEA, Deterministic Sensitivity Analysis (10/31)
Drummond Chapter 11: 11.1-11.2.1.2 (page 389-398)
Applied: Barkun et al. 2013
*Review Second Panel Chapter 5

Week 2a: Lab #1: Building Decision Trees: Back Pain (11/5)
Browse: https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Fact-Sheets/Low-Back-Pain-Fact-Sheet
Bring Laptop with Excel

Finish Lab Write Up as HW #1

Week 2b: Probabilistic Sensitivity Analysis (11/7) [Dr. Ballerich]
Second Panel Chapter 11 Section 11.4.2-11.6 and 11.8-11.9
Fenwick et al. 2004
Applied: Fenwick et al 2006
*Drummond Chapter 11 11.2.2-11.2.4.4
*Briggs et al. 2012
*Briggs et al. 2002

Week 3a: Evidence for Economic Evaluations & Meta-Analysis (11/12)
Drummond Chapter 10 (p. 354-369)
Applied: Kansal 2011 and Roskel 2010
*Sutton 2001 [Section 1-3]
*Cawson 2014
*Second Panel Chapter 6
*Cochrane Chapter 9 (Green)

Assign ICER review project
HW #1 Due

Week 3b: Statistical Methods for Economic Evaluation Cost Transition Probabilities and Costs (11/14)
Drummond Chapter 10 (p. 369-386)
Fleurence and Hollenbeak 2007
Applied: Second Panel Appendix A and Ollendorf 2016

Week 4a: Reporting and Interpretation, Second Panel Recommendations, Impact Inventory Checklist (11/19)
  Second Panel Chapter 13

Week 4b: Thanksgiving-Class Canceled (11/21)

Week 5a: Cost-benefit, Cost-utility Analysis and Value of Statistical Life Years (11/26) [Dr. Drabo]
  TBD

Week 5b: Midterm Exam (11/28)

Week 6a: Value of information, EVPI, EVSI and EVPPI (12/3) Lab #2
  Drummond (409-425)
  Applied: Wilson 2010
  *Meltzer 2011
  *Basu and Meltzer 2007

  Complete Lab #2 as HW#2

Week 6b: CEA Alongside Clinical Trials (12/5)
  Glick and Polsky Chapter 2

Week 7a: Introduction to Advanced Modeling Approaches, Markov, Microsimulation, Discrete Event Simulation (12/10) [Dr. Drabo]
  TBD

  HW #2 Due

Week 7b: Role of Economic Evaluation in Public Policy and Ethical Considerations (12/12) [Kellan Baker]
  Drummond Chapter 2 (p19-38) and Chapter 5 (166-170)
  Neumann et al. 2005
  Applied: TBD
  *Singer 2009
  *Williams 1992
  *Second Panel Ch.12

Week 8a: Review for Final Exam (12/17)

  ICER Report Due
**Week 8b: Final Exam (12/19)**

**Readings**


