Course Description

This course introduces students to key issues and findings in the valuation and production of health. It combines theoretical and empirical techniques from health economics and environmental economics. At their cores, both disciplines deal with market failures – in particular, public goods, externalities, and moral hazard. The first part of the course provides an introduction to the theoretical framework used to analyze and value the provision of health and environmental goods. The second part focuses on policy-relevant empirical measurements of the valuation of health and safety – how much is society willing to pay for improvements in health and safety? The remaining two parts of the course explore the different ways in which we can produce health and safety. What types of investments work and what types do not? Which investments are cost effective? In these latter two parts, we first explore what we know about the environmental and social production of health, and then examine whether medical care is a cost effective means of producing health.

The first goal of the course is to encourage students to consider the tradeoffs made when investing in the provision of health and environmental goods and to understand how economics can provide a framework to compare these choices and guide policy. The second goal is to familiarize students with the empirical methods that researchers use to estimate the effects of health and environmental policies. The third goal is to introduce students to basic statistical programming skills. Most students will not go on to do graduate work in this field, but upon completion of the course they should, for example, be able to analyze a study described on a news site and ascertain its credibility.

Prerequisites
Students should be familiar with intermediate micro economic theory and basic probability and statistics. The former can be satisfied with EEP 100 or 101 or ECON 100A or 101A (or equivalent). The latter can be satisfied with STAT 20, 21, 25, or 131A or EEP 118.

**Assignments and Grading**

We will assign a series of problem sets during the course of the semester. On each problem set, a random sample of the questions will be graded. The problem set on which you score lowest will be **dropped** when computing your course grade, but as a consequence **late problem sets will not be accepted for any reason**. Completing the problem sets will be very helpful for the midterm and the final examination. Overall grades will be based on performance on problem sets (36%), participation (4%), the midterm grade (20%), and the final exam grade (40%).

The tentative date for the 2019 final is Monday, October 21.

Information regarding the schedule and location of the final exam will be available at https://registrar.berkeley.edu/scheduling/academic-scheduling/final-exam-guide-schedules. **Please do not ask me or the GSIs when or where the final is.** We assume no responsibility for erroneous information if you ask us when/where the final is, as any information we give you on this matter can only be less accurate than what is on the Registrar website.

**Textbooks and Readings**

There is no single text for the course, but there are readings that pertain to each section of the course. Links to these articles are included below; the articles should be accessible to anyone on the UC Berkeley network. If you are off campus, you can access the articles by configuring your browser proxy settings using the instructions at http://www.lib.berkeley.edu/Help/proxy.html. If you do not understand how to follow the instructions listed there, please ask a classmate for assistance.

**Software/IT**

Some problem sets require access to a statistical software package. You have two choices: Stata, which is freely available via the campus Citrix server at https://citrix.berkeley.edu (you will first need to install Citrix Receiver), or R, which is available for free download at https://www.r-project.org (you may also want to install the GUI editor from https://www.rstudio.com). The GSIs will work in Stata, so this is probably the better choice unless you have much more expertise in R.

Lectures will utilize i>clickers for polls, so you should make sure that you have purchased one and set it up on bCourses. Do not register your clicker on iclicker.com: if you do, I will not be able to match your responses with your name and you will not receive credit. Please see instructions for setting up your clicker at https://dls.berkeley.edu/services/clickers/students-getting-started-clickers.
Accommodations

**Students with DSP accommodations should have the DSP office inform the instructor within the first three weeks of classes.** In general it is logistically infeasible to grant last-minute requests for accommodations just prior to exams or assignment due dates.

Course Outline

**SECTION 1 – THEORETICAL TOOLS**

**Review of Market Failures**

Efficient Allocation and Externalities (Instructor Slides and Berck Chapters 3 and 12)

Public Goods (Instructor Slides)

Revealed vs. Stated Preferences and Benefit-Cost Analysis (Instructor Slides and Berck Chapter 6)

**SECTION 2 – THE VALUATION OF HEALTH**

**Statistical Value of Life and Health**

Basic empirical tools.

Randomized trials versus observational data: the role of omitted variables bias (Instructor Notes)

Simple linear regression (Instructor Notes)

Simple differences-in-differences (Instructor Notes)

How do we value improvements in safety or health?


Empirical estimates of the statistical value of life.


**SECTION 3 – ENVIRONMENTAL AND SOCIAL PRODUCTION OF HEALTH**

**The Health Production Function**

Why should we care about costs?


**Air Pollution**

The effects of air pollution on infants.


The effects of air pollution on adults.


**Water Pollution**

The effects of fracking on human health.


The effects of water pollution on human health.


**Climate Change**

The effects of short-term climate fluctuations on mortality.


**Death on the Roads**

The vehicle “arms race”


Texting and driving


**The Built Environment**

The effects of fast-food on obesity.


SECTION 4 – MEDICAL PRODUCTION OF HEALTH

Does Medical Spending Produce Health?

The effects of health care expenditures on health.


Optional Readings:


**Market Failure in the Provision of Healthcare**

Adverse selection in insurance markets.


Moral hazard, externalities, and other market failures in healthcare. (Instructor Slides)