

**Empirical and Mathematical Reasoning 20:  
The Business and Politics of Health**

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Health care is a major economic industry and a central concern of the body politic. At the same time, it is an intensely personal matter, one which affects people throughout their life. This confluence of the personal, the economic, and the political creates tensions for which we would like to have policy solutions. In this course we will consider three health policy questions for which solutions are urgently needed:

- What steps should be taken to end the scourge of HIV/AIDS?
- How should the United States reform its health care system?
- How should prescription drugs be produced and sold?

Each of these questions is, on its face, *technological*. We should strive for a vaccine for HIV, come up with plans to cover uninsured people, and make it easier to develop cheap, effective medications. In each case, we will see that these technological solutions are incomplete. The reason is that these problems not just technological, they are *social* and *political* as well. Thus, addressing them will require consideration of a range of economic, scientific, and moral questions. We will consider these various dimensions in this course.

The course is divided into three units, focused on these three policy areas. At the end of each unit, students will be asked to come up with a solution to the problem being considered. The solutions will be discussed in section, and some will be presented in class.

In addition to learning about health, there is another goal for the course. Throughout our lives, we are forced to make decisions with imperfect information. What is the best way to reduce violence, address issues of chronic poverty, or improve underperforming schools? This course will show you how social scientists address empirical questions such as these. We will discuss the types of data that are available, how those data are analyzed, and the confidence with which causal statements are made.

**Note:** This course, when taken for a letter grade, meets the General Education requirement for Empirical and Mathematical Reasoning *or* United States in the World, but not both.

**Prerequisites.** None

**Instructor**

David Cutler, Otto Eckstein Professor of Applied Economics  
Littauer 226, [dcutler@harvard.edu](mailto:dcutler@harvard.edu), 496-5216, @cutler\_econ  
Meetings by appointment, [dingwell@fas.harvard.edu](mailto:dingwell@fas.harvard.edu), 496-9126  
Feel free to e-mail me as that is often quicker than scheduling a meeting.

**Section Leaders**

Vidit Munshi	<a href="mailto:vmunshi@g.harvard.edu">vmunshi@g.harvard.edu</a>
Jamie Cohen	<a href="mailto:jamiecohen@g.harvard.edu">jamiecohen@g.harvard.edu</a>
Julia Dennett	<a href="mailto:jdennett@g.harvard.edu">jdennett@g.harvard.edu</a>
Adrienne Sabety	<a href="mailto:asabety@g.harvard.edu">asabety@g.harvard.edu</a>

**Meeting Time and Location.** The course will meet Tuesday and Thursday, 10:00-11:30, in Sever 113. Class will start promptly at 10:07. Students who are habitually late or non-attendees will receive lower marks on participation. Sections will meet once a week for 1 hour. The times and dates will be announced.

**Course web site.** <https://canvas.harvard.edu/courses/31842>. Lecture notes will be posted before each class. I will not make physical copies of handouts.

**Laptop Policy.** No laptops or other electronic devices are permitted during class. Why? See [here](#).

**Academic Adjustments/Accommodations.** If you need academic adjustments or accommodations, you should present your letter from the Accessible Education Office (AEO, <http://www.fas.harvard.edu/~aeo/>) and speak with Professor Cutler or Vidit Munshi by the end of the second week of the term. Failure to do so may result in our inability to respond in a timely manner. All discussions will remain confidential, although AEO may be consulted to discuss appropriate implementation.

**Collaboration.** Discussion and the exchange of ideas are essential to doing academic work. For assignments in this course, you are permitted to consult with your classmates as you work on problem sets. However, after discussions with peers, make sure that you can work through the problem yourself and ensure that any answers you submit for evaluation are the result of your own efforts. In addition, you must cite any books, articles, websites, lectures, etc. that have helped you with your work using appropriate citation practices. Similarly, you must list the names of students with whom you have collaborated on problem sets.

**Assignments.** The class is divided into three units, covering the three topics noted above. In each unit, we will discuss substantive and methodological issues. The assignments will mirror this division. There will be one problem set in each unit, focused on the methodological issues that unit covers. In addition, students will complete an assignment at the end of each unit that involves coming up with an answer to the driving question of that unit. The units and assignments are as follows:

Unit	Methodological area	Unit question
HIV/AIDS	Epidemiology	Can we have a world without AIDS?
Health systems	Regression analysis; causality v. correlation	Write a memo to the Trump Administration on what to do about health care
Pharmaceuticals	Economics: Supply and demand	How do you position a pharmaceutical company for the next 20 years?

**Grading.** Grades will be based on a final project (either final exam or term paper; 30%), project analyses (40%), problem sets (20%), and lecture and section participation (10%). Final grades will be based on a curve, with approximately 1/3 A or A-.

Students can elect to take the final exam or write a term paper. Notify your TF about your choice by November 2. Term papers are due at 9:00 am on the day of the final exam. Late papers are marked down 1/3 grade per day (including weekends).

Problem sets will be available online one week before they are due. When appropriate, solutions will be posted after they are due. As a result, late problem sets will not be accepted.

If you have questions about timing of assignments, email Professor Cutler at [dcutler@harvard.edu](mailto:dcutler@harvard.edu). If you have questions about the grading of an assignment, you should submit your question in writing to Vidit Munshi, [vmunshi@g.harvard.edu](mailto:vmunshi@g.harvard.edu).

**Class Participation.** I would like this class to have as much participation as is possible. I welcome questions, comments, or items of news interest. Section participation is also encouraged, and section attendance is mandatory.

**Texts:** There are no required texts. You are expected to read all of the supplementary material. All of the readings are linked. Please contact [dingwell@fas.harvard.edu](mailto:dingwell@fas.harvard.edu) if you are unable to access any of the readings.

## Course Calendar

August 31      A Tour of the World's Health

### Unit 1: HIV/AIDS

September 5	The Epidemiology of HIV	
September 7	Economic Impact of HIV	
September 12	Modeling Epidemics	
September 14	Addressing HIV in Poor Countries	
September 19	The HIV Epidemic in the United States	Problem set 1 due
September 21	**No class – Jewish New Year	
September 26	HIV Successes	
September 28	HIV Failures	Analysis 1 due
October 3	Presentations and discussion	

### Unit 2: The US Health Care System

October 5	Introduction to Health Systems	
October 10	Western Health Systems	
October 12	The Affordable Care Act	
October 17	Statistical Interlude I: Regression analysis	
October 19	Statistical Interlude II: Correlation v. causation	
October 24	Quality of Medical Care in America	Problem set 2 due
October 26	Cost Sharing	
October 31	Provider Incentives	
November 2	Social Determinants of Health	Analysis 2 due
November 7	Presentation and discussion	

### Unit 3: Pharmaceuticals

November 9	The Pharmaceutical Market	
November 14	Demand and Supply: Pricing and Costs	
November 16	Regulation and Negotiation	
November 21	Drivers of Innovation	Problem set 3 due
November 23	**No Class – Thanksgiving	
November 28	Current initiatives aimed at Pharma	Analysis 3 due
November 30	Presentation and discussion	
December 1	Optional class get together	