

**Course website:** Moodle

**Instructor:** Lucy Xiaolu Wang, Ph.D.

**Course time:** Mon & Wed, 4-5:15 PM

**Class location:** Holdsworth Hall room 202; **Units:** 3

**Office Hours:** schedule meetings on [Calendly](#) (1.5+ hours/week) & Wed (after class, up to 30 minutes)

**Prerequisites:** ECON 203/RES-ECON 202/case-specific exemption

[xiaoluwang@umass.edu](mailto:xiaoluwang@umass.edu)

*This course is part of the Public Interest Technology Initiative (PIT@UMass) core technology courses.*

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## COURSE DESCRIPTION

This course introduces students to the theory and methods of health economics and demonstrates how these methods can be applied to understand phenomena and analyze issues in health policy, business, and management. We will explore how scholars and practitioners address empirical questions in health economics and the methods and data that are available. Topics include: COVID-19 and the diffusion and innovation in health care; the demand for health care; health insurance; geographic variation in medical spending; physician labor market; hospital and health systems; pharmaceutical, biotech, and medical devices; drug development, pricing, and FDA regulation; technology assessment; special topics (poll).

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## LEARNING OUTCOMES

- Understand main theory and methods in major health economics topics
- Identify suitable data, and apply proper theory and methods to analyze timely questions
- Examine current events using class tools throughout the semester and share with the class
- Practice critical thinking, public speaking, and analytical writing skills in course topics
- Develop an individual learning portfolio to showcase individual and group projects

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## COURSE MATERIALS & TEXTBOOK

The main materials are lecture slides (on Moodle). The textbook below is used for assigned reading for some topics. Extra materials will be posted on Moodle. Do not share course materials outside the class. Bhattacharya, Jay, Timothy Hyde, and Peter Tu. *Health Economics*. Macmillan International Higher Education, 2013. [BHT] Available [via Amazon](#) and free-access in our library (e-book & hard copies).

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## REQUIRED ASSIGNMENTS AND GRADING

Grading scale: Final grades will be based on a curve, but the strictest possible grade thresholds will be: A:90%, B:80%, C:70%, and D:60%. +/- grades may be given. Letter grades may be adjusted (curved) upward, but not downward. You will earn your grade for the course based on the following assignments:

- Class participation (10%):
  - Attendance and active participation in classroom discussion (6%)
  - Questions for guest speakers (4%): submit 3 questions by the day before (no extension)
- Assignments (40%): assignment 2-5 can be done individually or in groups (up to three people)
  - 35% for 5 assignments; 5% for peer evaluation; no extension; late submission: -20%/day
  - Assignment 1 (due 9/16): essay assignment based on the list of movies/books/podcasts
    - Assignment 1 peer evaluations (due 9/23): based on completion (show work)
  - Assignment 2 (due 10/7): this assignment will be posted on 9/16

- Assignment 3 (due 10/28): this assignment will be posted on 10/7
- Assignment 4 (due 11/18): this assignment will be posted on 10/28
- Assignment 5 (due 12/9): this assignment will be posted on 11/18
- Assignments will be graded based on accuracy and effort (show work!)
- 6 quizzes (25%): 15 minutes at the beginning of the class; the lowest grade will be dropped.
  - Quiz 1 (9/12), quiz 2 (9/28), quiz 3 (10/12), quiz 4 (10/31), quiz 5 (11/14), quiz 6 (12/7)
  - Quizzes will be graded based on accuracy and effort (show work!); non-cumulative
- In-class presentations & discussions (25%): detailed rubrics on Moodle
  - Individual ignite talks (10%): 5-min, 20 automated slides, presentation & reflection
  - One group presentation (10%): on 12/12 (LDOC), special topics based on class poll
  - Active engagement with peer and group presentations (5%)
- Optional project (10%): 10 bonus points to offer (I'll take 100 out of 110 total for the course)
  - You can work on the project alone or in a two-person team (tell me your choice ASAP)
  - Option 1 (due 12/16): health econ news essays & podcast (8 news, 250 words each; one final reflection on your news observation journey this semester; record all in a podcast)
  - Option 2 (due 12/18): 15-min video presentation and a 5–10-page proposal on a health care data project (practice Zoom presentation skills and corresponding report writeup)

## OUTLINE OF COURSE

#	TOPIC DESCRIPTION
1	Why Learning Health Economics? (9/7) <ul style="list-style-type: none"> <li>● Introduction and overview of health economics topic areas; course admin &amp; logistics</li> </ul>
2	COVID-19 and Health Economics (9/12, 9/14) <ul style="list-style-type: none"> <li>● COVID-19 and inequality in the access to health care (within the US and globally); funding risky research: the case of mRNA vaccines; economics of the vaccine market</li> </ul>
3	The Demand for Health and Health Care (9/19) <ul style="list-style-type: none"> <li>● Demand for health: the Grossman Model; health as a consumption good, as an input into production, and as a form of stock/capital; demand for health care; two field experiments</li> </ul>
guest	Andrea Monge, Ph.D. (health economist at the US FDA; former head and neck surgeon) (9/21) <ul style="list-style-type: none"> <li>● Access to health care: perspectives from a physician and public sector economist</li> </ul>
4	Population Health and the Role of Medical Care (9/26) <ul style="list-style-type: none"> <li>● Change in population health, impact of medical care, social determinants of health</li> </ul>
5	The Growing Medical Spending and Geographic Variation (9/28) <ul style="list-style-type: none"> <li>● The rising health care costs: the trends and sources; the medical care CPI; the (over)use of new technologies; geographical variations in medical spending and health outcomes</li> </ul>
6	Health Insurance and the US Health Insurance Model (10/3, 10/5, 10/12, 10/19, 10/24) <ul style="list-style-type: none"> <li>● Adverse selection and moral hazard; employer-sponsored health insurance</li> <li>● The four eras of health insurance; managed care and utilization management</li> <li>● Medicare and Medicaid; the Affordable Care Act (ACA) and ACA expansions</li> </ul>
guest	Tori DiStefano (life sciences advisory consultant, Guidehouse; founder, CardioVigi) (10/17) <ul style="list-style-type: none"> <li>● Health care consulting and entrepreneurship: internship, full-time job, and start-ups</li> </ul>

7	Physicians (10/26, 10/31) <i>10/26 lecture will be pre-recorded online video (conference conflict)</i>
	<ul style="list-style-type: none"> <li>Physicians at work; physicians at training; physician career decisions and residency; physician agents; physician-induced demand; medical malpractice and tort reforms</li> </ul>
8	Hospitals (11/2)
	<ul style="list-style-type: none"> <li>The history of hospitals; the relationship between hospitals and physicians; hospital ownership (for-profit and nonprofit); the relationship between hospital and payers</li> </ul>
guest	C.Q. Deng, Ph.D. (vice president, United Therapeutics Corp.) (11/7)
	<ul style="list-style-type: none"> <li>The economics and R&amp;D process for orphan drug development</li> </ul>
9	Pharmaceutical, Biotech, and Medical Devices (11/9, 11/14)
	<ul style="list-style-type: none"> <li>The life cycle of a drug; patents and price controls; induced innovation; FDA regulations across the markets for small molecule drugs, biologics, and medical devices; policy issues</li> </ul>
guest	Samantha Zyontz, Ph.D. (visiting assistant professor, Boston University Law School) (11/16)
	<ul style="list-style-type: none"> <li>CRISPR-cas9 gene editing technology: discovery, patent battle, licensing, and adaption</li> </ul>
10	Digitization in Health Care (11/21) <i>Thanksgiving week adjustment: pre-recorded online video</i>
	<ul style="list-style-type: none"> <li>Cost effectiveness analysis; measuring costs and effectiveness; cost-benefit analysis; moral hazard in technology assessment; rationing; estimating the value of life</li> </ul>
11	Technology Assessment (11/28)
	<ul style="list-style-type: none"> <li>Cost effectiveness analysis; measuring costs and effectiveness; cost-benefit analysis; moral hazard in technology assessment; rationing; estimating the value of life</li> </ul>
12	Intellectual Property Rights and Innovation in Health Care (11/30, 12/5)
	<ul style="list-style-type: none"> <li>The economics of intellectual property (IP) rights; IP and innovation; empirical evidence: R&amp;D for cancer drugs, gene-level IP (patent vs non-patent IP; public vs private gene IP)</li> </ul>
13	Review of Main Topics and How to Enrich Your CV with What We Learned (12/7)
	<ul style="list-style-type: none"> <li>Review course materials, course project website, and how to enrich your CV accordingly</li> </ul>
14	Group Presentation on Selected Special Topics (12/12, LDOC)
	<ul style="list-style-type: none"> <li>Two most popular choices out of S1-4 will be presented in groups and discussed</li> </ul>
S1	Bad Blood: The Rise and Fall of Theranos [special topic]
	<ul style="list-style-type: none"> <li>A most notable recent fraud by the self-made female billionaire, “Steve Jobs” in health care</li> </ul>
S2	The US Opioid Crisis [special topic]
	<ul style="list-style-type: none"> <li>The history and status quo; policy interventions and private solutions; COVID complications</li> </ul>
S3	Cannabis Legalization [special topic]
	<ul style="list-style-type: none"> <li>The history of prohibition and legalization (US &amp; global); demand and supply side reactions</li> </ul>
S4	Global Drug Diffusion and Innovation [special topic]
	<ul style="list-style-type: none"> <li>International patents; the Medicines Patent Pool; patent licensing and patent litigations; international drug procurement institutions</li> </ul>

Note: Some topics may be omitted for time. Students are encouraged to refer to the [academic calendar](#) to be aware of critical deadlines throughout the semester. We will poll for special topic coverage.

Extra credit: send me your favorite song related to health care (in any adjacent ways) by 9/15 and use the subject line “ResEc397c: health song” (include the URL to YouTube/Spotify), you’ll get an extra credit.

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## COURSE POLICIES

### **Accommodation Statement**

The University of Massachusetts Amherst is committed to providing an equal educational opportunity for all students. If you have a documented physical, psychological, or learning disability on file with Disability Services (DS), you may be eligible for reasonable academic accommodations to help you succeed in this course. If you have a documented disability that requires an accommodation, please notify me within the first two weeks of the semester so that we may make appropriate arrangements.

**Community Respect:** All students are expected to act professionally, showing utmost respect in all communication with each other, instructors, and university staff. Also, remember any honest question is a good question, whether it is yours or someone else's. If you have a question, please raise it. It is likely that someone else has the same question.

**Academic Honesty:** Academic dishonesty is prohibited in all programs of the University. Academic dishonesty includes but is not limited to: cheating, fabrication, plagiarism, and facilitating dishonesty. Appropriate sanctions may be imposed on any student who has committed an act of academic dishonesty. Instructors should take reasonable steps to address academic misconduct. Any person who has reason to believe that a student has committed academic dishonesty should bring such information to the attention of the appropriate course instructor as soon as possible. Instances of academic dishonesty not related to a specific course should be brought to the attention of the appropriate department Head or Chair. Since students are expected to be familiar with this policy and the commonly accepted standards of academic integrity, ignorance of such standards is not normally sufficient evidence of lack of intent ([http://www.umass.edu/dean\\_students/codeofconduct/acadhonesty/](http://www.umass.edu/dean_students/codeofconduct/acadhonesty/)).

**Diversity and inclusion:** The University of Massachusetts Amherst is committed to policies that promote inclusiveness, social justice, and respect for all, regardless of race, color, religion, creed, gender, sexual orientation, age, national or ethnic origin, physical or mental disability, political belief or affiliation, marital status, veteran status, immigration status, gender identity and expression, genetic information, or any other characteristic or status protected by state or federal laws.

**Finally, I hope you enjoy the class. We will be learning together!**