

# USC School of Pharmacy

Fall 2021

## **BPSI 407: Pharmaceutical and Health Economics**

*Draft Syllabus – Subject to Change*

**Instructor:** Erin Trish, PhD  
Assistant Professor, Department of Pharmaceutical and Health Economics  
USC School of Pharmacy  
[etrish@healthpolicy.usc.edu](mailto:etrish@healthpolicy.usc.edu)  
(213) 821-6178  
Office: VPD 412D

**Office Hours:** TBD

**Course Weight:** 4 units (two 1.5 hour sessions; plus 1 hour outside activities)

**Day/Time/Location:** Tuesdays and Thursdays 12:30-1:50pm in THH 118

**Catalogue Description:** *Application of economics principles to pharmaceutical and health care issues; prescription drug pricing, access, and innovation; topics related to pharmaceutical policy*

### **Introduction**

This course introduces the student to the field of pharmaceutical and health economics. It focuses on the institutions, processes, and incentives that govern health care delivery. While the course emphasizes pharmaceuticals – including their innovation, consumption, and contribution to the production of health – it also places them in the context of the incentives and dynamics at play in the broader health care delivery system. Moreover, the course is designed to provide students with the tools to critically evaluate health, health care, and pharmaceutical policies. Specifically, the goal is to strengthen students' ability to recognize, describe, and use economic, statistical, and mathematical tools in evaluating pharmaceutical and health policies.

### **Objectives**

This course is designed for undergraduates of both scientific and non-scientific majors with an interest in learning about economic principles and concepts underlying the pharmaceutical and health care industries. Chapters from the textbook will be supplemented with journal articles and other timely materials such as policy white papers and newspaper articles. Students will critically evaluate and debate policy positions and emerging “hot” topics will be discussed.

Upon successful completion of this course, the student should be able to:

- Demonstrate working knowledge of the structure of the pharmaceutical industry and its context in the health care industry, including the key business and policy issues that affect each and the way they interact;
- Engage in a debate about pharmaceutical policy, including demonstrating knowledge of the long- and short-term tradeoffs related to access and innovation;
- Apply economic and statistical reasoning to the pharmaceutical and health care industries.

### **Assignments and Grading**

Evaluation will be based on a midterm examination, a final examination, in-class quizzes, in-class debates, participation in in-class exercises, and an in-class presentation with the following breakdown:

Quizzes	15% of grade	30 points
Debates	15% of grade	30 points
Article presentation	15% of grade	30 points
Midterm exam	25% of grade	50 points
Final exam	30% of grade	60 points
Total	100% of grade	200 points

**In-class quizzes (15%):** There will be four in-class quizzes throughout the semester. Quizzes will be about 15 minutes in length and will consist of short-response questions designed to test your knowledge of previously assigned readings due on that day or earlier, including the PowerPoint decks to be presented on that day or earlier. Missed quizzes cannot be made up. However, the lowest quiz score of the semester will be dropped.

**In-class debates (15%):** Central to the field of pharmaceutical and health economics is understanding and evaluating tradeoffs. Every position on the key points in this field has certain strengths and weaknesses. In-class debates will occur throughout the semester on topics relevant to that week. Students will be assigned a position in class and will be graded on the basis of how well they identify the strengths in their assigned position and how well they identify the weaknesses in the opposing position.

**In-class article presentation (15%):** Teams will be assigned for the in-class presentations. With your team, choose a paper (such as a *Health Affairs* paper) on a pharmaceutical and health economics topic. Each team will prepare a 12-minute presentation that answers: a) what is the research question; b) what is known about this research question and what does the paper add; c) why is answering this research question important; d) how did the authors answer the research question; e) what did they find; f) what are the policy implications; and g) your critique of the study, open questions, etc. Presentations will be graded on the basis of how well they address these questions, including both in their prepared slides and oral presentation. Depth and cogency of analysis is more important than recitation of facts related to the paper.

**Midterm (25%) and final (30%) exams:** Exams will be a combination of true/false, short-response, and problem-solving questions. There will be one midterm and one final exam. The final exam is cumulative.

### **Textbooks**

Stuart Schweitzer and John Lu. Pharmaceutical Economics and Policy: Perspectives, Promises, and Problems. Third Edition.

Jay Bhattacharya, Timothy Hyde, and Peter Tu. Health Economics.

### **Course Outline**

Week	Topic	Lesson Objectives	Assigned Reading
<b>Overview and Introduction</b>			
Week 1 8/24 8/26	Introduction: expectations and goals of this class. Overview and principles of pharmaceutical and health economics.	Recognize the roles of positive and normative analysis in economic reasoning; Describe the evidence of health care spending growth in developed countries.	Newhouse (1992). "Medical Care Costs: How Much Welfare Loss?" <i>Journal of Economic Perspectives</i> 6(3): 3-21.
Week 2 8/31 9/2	Anatomy of US Health Care Spending and the Role of Prescription Drugs	Describe the causes and consequences of health care spending growth; Assess the role of prescription drugs in overall health care spending; Describe the different types of prescription drugs – such as those covered under the medical vs. outpatient prescription drug benefits and specialty, brands, and generics; Understand how prescription drugs prices are measured and the difference between list and net prices; Understand the spending and utilization trends for each of these segments and their potential drivers.	Bhattacharya, Hyde, and Tu – Chapter 13
Week 3 9/7 9/9	The Demand for Health, Health Insurance, and Pharmaceuticals  <b>Quiz 1 (Tues 9/7/21)</b>	Describe the Grossman economic model of the demand for health; Describe the statistical evidence on real-world demand for medical care; Describe the role of pharmaceuticals in the creation of health; Evaluate the evidence on whether pharmaceuticals and other health care services are substitutes or complements.	Bhattacharya, Hyde, and Tu – Chapters 2-3  Schweitzer and Lu – Chapter 5
<b>Economic Overview of the Pharmaceutical Industry</b>			
Week 4 9/14 9/16	Foundations of Economic and Policy Analysis in Pharmaceutical and Health Care Markets	Describe the economic tools of supply and demand analysis; Describe the differences between economic and public health perspectives; Describe the economic rationale for public policy intervention.	Fuchs (1996), "What every philosopher should know about health economics." <i>Proceedings of the American Philosophical Society</i> 140(2): 186-196.
Week 5 9/21 9/23	Structure of the Pharmaceutical Industry	Describe how drugs are discovered, developed, and launched; Describe how drugs are priced, reimbursed, and distributed; Use economic reasoning to explain how patent protection and competition influence drug prices; Describe the role of the biotechnology industry in product development; Understand the economics of the generic drug industry and its effect on competition for branded products.	Schweitzer and Lu – Chapters 1-3

Week 6 9/28 9/30	Economic Evaluation, Pharmaceutical Pricing and Access  <b>Quiz 2 (Tues 9/28/21)</b>	Describe the role of cost-benefit analysis, cost-effectiveness analysis, and cost-utility analysis in economic evaluation of new drugs; Describe what Pharmacy Benefit Managers do and how they influence drug prices; Describe the empirical evidence on drug price trends and use economic reasoning to explain the role of price-bargaining in driving these trends; Use economic reasoning to explain how drugs are valued.	Schweitzer and Lu – Chapters 7-8  Bhattacharya, Hyde, and Tu – Chapter 14
Week 7 10/5 10/7	Medical Innovation; Pharmaceutical Marketing	Describe the predictions of the Nordhaus model of innovation; Use economic reasoning to explain the ways in which empirical evidence supports the Nordhaus model; Use economic reasoning to evaluate alternative medical innovation policies; Describe the types of promotion and marketing used in the pharmaceutical industry; Evaluate the empirical evidence on the effects of pharmaceutical marketing.	Bhattacharya, Hyde, and Tu – Chapter 12  Schweitzer and Lu – Chapter 10
<b>Week 8</b>	<b>In-Class Midterm (Tues 10/12/21)</b>  <b>No class Thurs 10/14/21 (Fall Break)</b>		
<b>Insurance and Reimbursement for Pharmaceuticals and Health Care</b>			
Week 9 10/19 10/21	Fundamentals of Health Insurance and Managed Care	Describe the economic tools for measuring the demand for and value of health insurance; Describe what managed care does and why it arose; Understand the segments of the insurance market and their contribution to prescription drug spending and utilization.	Bhattacharya, Hyde, and Tu – Chapter 7
Week 10 10/26 10/28	US Health Insurance Markets, Prescription Drug Insurance, and the Supply Chain	Understand the distribution of health insurance coverage and characteristics of people covered under different market segments; Understand the financing of health insurance in different market segments; Understand the role of actors across the prescription drug supply chain, including health insurers, pharmacy benefit managers, distributors, wholesalers, and manufacturers; Understand the incentives across the supply chain and their effect on prescription drug markets.	Bhattacharya, Hyde, and Tu – Chapter 18

Week 11 11/2 11/4	Prescription Drug Coverage, Reimbursement and Incentives under Medicare Parts B and D  <b>Quiz 3 (Tues 11/2/21)</b>	Understand the basics of Medicare Parts B and D, their origin, and how they are financed and administered; Understand the role of Medicare Parts B and D in the overall pharmaceutical market; Describe how policy creates incentives for coverage of prescription drugs in this market segment.	Medicare Payment Advisory Commission – Report to Congress. June 2019. Chapters on Part B and Part D.
Week 12 11/9 11/11	Prescription Drug Coverage, Reimbursement and Incentives under Commercial Insurance and Medicaid	Understand the role of employment-based coverage and the individual market in the context of the overall pharmaceutical and health care markets, including their effect on innovation; Understand the basics of Medicaid – including Medicaid managed care – and how it is financed and administered; Describe the characteristics of people covered under Medicaid and their prescription drug spending patterns; Describe how federal and state policy creates incentives for coverage of prescription drugs in these market segments.	Ramsey Baghdadi. Medicaid Best Price. Health Affairs Health Policy Brief. August 10, 2017.
<b>The Global Market for Pharmaceuticals and International Comparisons</b>			
Week 13 11/16 11/18	Global Market for Pharmaceuticals; International Comparisons  <b>Quiz 4 (Tues 11/16/21)</b>	Understand geographic patterns of pharmaceutical innovation and production; Evaluate variation in demand for pharmaceuticals across major international markets; Understand geographic variation in drug prices; Assess the role of global payment approaches on prices and access.	Schweitzer and Lu – Chapters 6 & 9
<b>Pharmaceutical Regulation and Policy Proposals</b>			
Week 14 11/23	Economic Analysis of Public Policy; Pharmaceutical Policy	Enumerate the types of government intervention and identify salient examples of each; Describe the economic rationale for government intervention; Use economic analysis to evaluate the rationale for or against government intervention; Evaluate major policy proposals focused on prescription drug markets in the Medicaid, Medicare and commercial markets; Use economic analysis to evaluate the rationale for or against these potential policy changes.	Bhattacharya, Hyde, and Tu – Chapter 20  Schweitzer and Lu – Chapter 14
<b>Thanksgiving Recess 11/25</b>			
<b>Student Presentations</b>			
Week 15 11/30 12/2	Student Presentations and Final Exam Review		
<b>Tuesday December 14, 2021: Final Exam – 11am to 1 PM</b>			

## **Statement on Academic Conduct and Support Systems**

### **Academic Conduct:**

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” [policy.usc.edu/scampus-part-b](http://policy.usc.edu/scampus-part-b). Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, [policy.usc.edu/scientific-misconduct](http://policy.usc.edu/scientific-misconduct).

### **Support Systems:**

*Counseling and Mental Health - (213) 740-9355 – 24/7 on call*

[studenthealth.usc.edu/counseling](http://studenthealth.usc.edu/counseling)

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

*National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call*

[suicidepreventionlifeline.org](http://suicidepreventionlifeline.org)

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

*Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press “0” after hours – 24/7 on call*

[studenthealth.usc.edu/sexual-assault](http://studenthealth.usc.edu/sexual-assault)

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

*Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298*

[equity.usc.edu](http://equity.usc.edu), [titleix.usc.edu](http://titleix.usc.edu)

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

*Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298*

[usc-advocate.symplicity.com/care\\_report](http://usc-advocate.symplicity.com/care_report)

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity | Title IX for appropriate investigation, supportive measures, and response.

*The Office of Disability Services and Programs - (213) 740-0776*

[dsp.usc.edu](http://dsp.usc.edu)

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

*USC Campus Support and Intervention - (213) 821-4710*

[campussupport.usc.edu](http://campussupport.usc.edu)

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

*Diversity at USC - (213) 740-2101*

[diversity.usc.edu](http://diversity.usc.edu)

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

*USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call*

[dps.usc.edu](http://dps.usc.edu), [emergency.usc.edu](http://emergency.usc.edu)

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

*USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call*

[dps.usc.edu](http://dps.usc.edu)

Non-emergency assistance or information.