Management and Economics of the Pharmaceutical, Biotech & Medical Device Industries
HCMG 215/899
Spring 2017
[Last Updated 1/10/17]

Contact Information

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Lectures

Class Meeting:
Tuesday and Thursday, 1:30-2:50pm, SHDH 1206

TA Review Session - Overview of U.S. Health Care System (Optional):
Tuesday, January 17, 6:00-7:00 pm, JMHH F45
** Attendance is not mandatory, but encouraged. A video recording of this TA session will also be available online.

Course Objectives

This course provides an overview of the management, economic and policy issues facing the pharmaceutical, biotechnology and medical device industries. The course perspective is global, with emphasis on the U.S. as the largest and most profitable market.

We focus on issues that differentiate these industries from most others, including:

- An R&D-intensive cost structure and rapid technological change; the role of biotechnology, genomics etc. in transforming the industry structure;
- A complex global market place in which customers include governments and third party payers, as well as physicians, pharmacists and individual consumers;
- Government regulation of every dimension of the business, including market access (safety and efficacy), pricing, manufacturing, and promotion;
- Continually evolving M&A strategies, including mergers, joint ventures, options-based deals and alliances;
- Global products and multinational firms, with growing tension between the needs and ability to pay in different market segments.
Course Format

- Lecture/presentation by instructor and industry guest speakers
- Case discussions
- Student presentations

Course Materials


Additional readings are listed below and will be posted on the course website (cases are available through Study.Net).

Course Website: The course website is located at [https://canvas.upenn.edu](https://canvas.upenn.edu). The syllabus, case questions, assignments, and readings will be posted on this website.

Grading

<table>
<thead>
<tr>
<th>Grading Category</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Case Write-ups</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>40%</td>
</tr>
<tr>
<td>Term Project</td>
<td>30%</td>
</tr>
<tr>
<td>Class Participation</td>
<td>10%</td>
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1. **Two Case Write-ups (20%)**: Students should come to class prepared to discuss all the assigned cases. Specific questions for each case will be posted on Canvas. Each student must write-up responses to the case questions for **two of the four required cases** listed in the syllabus. You may work in teams (no more than 5 people) to discuss the cases and responses. However, you must **independently write up the case**. The case write-up should be a maximum length of two pages (supporting material may be in an appendix). An electronic copy of your write-up must be submitted via Canvas by **5:00 pm the day before the case is to be discussed**. Please also bring a hard copy to class.

2. **Midterm Exam (40%)**: There will be an in class midterm exam on **Thursday, February 23**.

3. **Term Project (30%)**: Students will work on a term project in teams of up to five students. A list of possible topics will be provided or you may select your own topic, subject to approval of the instructor. A one-page outline of the team’s project is due via Canvas at the **beginning of class on March 2**. The team’s final write-up (max. 10 pages plus optional tables) is due via Canvas at the **beginning of class on April 13**. The term project will be presented in class.

4. **Class Participation (10%)**: The class participation grade will be assessed using a combination of a class sign-in sheet for attendance and periodic in class exercises and online questions. Missing up to two participation assessments will not affect your grade.
Classroom Guidelines and Policies

Attendance
Your on-time attendance for each class session is expected, as is your active participation. Students should remain in attendance for the duration of class.

Laptops
All phones, laptops, and other electronic devices should be turned off.

Academic Honesty
All students should familiarize themselves with the University’s guidelines on citations, plagiarism and academic dishonesty, which are found at:
http://www.upenn.edu/academicintegrity/ai_codeofacademicintegrity.html
Any violations of this policy will result in significant consequences, including but not limited to, grade deductions and reporting to the University.

Course Schedule and Readings

Part I: Overview of Current Issues in the Pharmaceutical, Biotech & Medical Device Industries

Jan 12: Introduction and Course Overview

Readings:
• Understanding Pharma—Chapters 1 & 2
• Standard & Poor’s Industry Surveys: Pharmaceuticals, May 2016 (pp. 14-23, 35-53)
Recommended reading order:
1. “How the industry operates” (pp. 44-53)
2. “Industry trends” (pp. 35-43)
3. “Industry overview” (pp. 14-23)

Jan 17: Drug Discovery, Development, and Clinical Trials

Readings:
• Understanding Pharma—Chapters 4 & 5
Jan 19: Incentives for Innovation

Readings:
- **Case:** Organizing for Innovation at Glenmark (A)

Jan 24: Marketing and Commercialization

Readings:
- **Case:** Cialis: Getting Ready to Market
- *Understanding Pharma*— Chapter 8 (pp. 156-173)

Jan 26: Measuring Value: Cost Effectiveness and Comparative Effectiveness Analysis

Readings:

Jan 31: Managed Markets: The Role of Insurers in Managing Pharmaceutical Use

Readings:
- *Understanding Pharma*— Chapter 10

Feb 2: Medicare Part D

Readings:

Feb 7: Pricing and Reimbursement: U.S.

Readings:
- **Case:** Merck: Pricing Gardasil

Feb 9: Pricing and Reimbursement: International

- **Case:** Gilead: Launching Truvada in Europe

Feb 14: Generics and Biosimilars

- **Case:** Teva Pharmaceuticals, Ltd. (background reading, not for write-up)

Feb 16: Medical Devices: Overview

- Standard & Poor’s Industry Surveys: Health Care Equipment and Supplies, October 2016 (pp. 12-17, 22-41)
  Recommended reading order:
  1. “How the industry operates” (pp. 36-41)
  2. “Industry trends” (pp. 22-35)
  3. “Industry overview” (pp. 12-17)

Feb 21: Review Session/Catch-up

Feb 23: Midterm Exam

**Part II: Industry Perspectives**

Guest Speaker Lectures [Speakers and Dates Subject to Change]

Feb 28: Data Analytics for Pharmaceuticals– Scott Johnson, Principal, Medicus Economics

Mar 2: Entrepreneurship in Pharma and Biotech– Maria Maccecchini, CEO and Founder, QR Pharma

Mar 7: Spring Break

Mar 9: Spring Break
Mar 14: Pharmaceutical Marketing – Sharon DeBacco, Vice President Product Promotion & Communication, Ironwood Pharmaceuticals

Mar 16: Investing in Pharma and Biotech – Joshua Schimmer, Managing Director, Piper Jaffray

Mar 21: Generic Drugs and the Pharmaceutical Market in India – Alok Sonig, Executive Vice President, Head of Dr. Reddy’s, North America

Mar 23: Pharmaceutical Pricing and Reimbursement in Europe – Brian Corvino, COO & Jason Ward, Partner, Decision Resources Group

Mar 28: Pharmaceutical Markets in China – Donald Yin, Associate VP and Head, Global Health Outcomes, Merck

Mar 30: Valeant Case Study – Scott Hirsch, Head of Business Strategy, Valeant Pharmaceuticals

Apr 4: Corporate Strategy, M&A/L&A – Henry Gosebruch, CSO, AbbVie

Apr 6: Medication Adherence Strategies for Pharma – Andrea LaFountain, CEO, Mind Field Solutions

Apr 11: The Market for Vaccines – Sean McElligott, Director, Johnson & Johnson

Apr 13: Market Access – Speaker TBD

Part III: Student Presentations

Apr 18: Wrap-up/Student Presentations

Apr 20: Student Presentations

Apr 25: Student Presentations