

**AAE540/MHR540**  
**Intellectual Property Rights, Innovation and Technology**  
**Syllabus**

Spring 2012  
Monday/Wednesday, 2:30 – 3:45pm  
Rm B30, Taylor Hall

**Instructor:** Guanming Shi  
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Class website: <http://www.aae.wisc.edu/aae540/main.asp>

**Prerequisites:**

Intermediate Microeconomics (Econ. 301 or equivalent), or instructor's consent.

**Overview:**

Ideas and innovations have become the most important resources in today's economy. Successful managers should know how to recognize, manage and generate technological innovation for sustained competitive advantage. This course uses economic concepts to illustrate the nature of technological innovation and how it transforms competition between firms and generates economic growth.

Topics will include: historical and conceptual background of technology and innovation; economics of the intellectual property (IP) protection system; IP licensing, enforcement and litigation; the relationship between market structure and innovation; the diffusion of technological innovations; interaction between public and private sector innovation; current policy issues regarding the conflicts between IP rights, antitrust regulation, and consumer welfare; and globalization.

Course objectives:

- To acquaint students with major issues in economics of IP rights, technology and innovation;
- To increase students' capability to do economic analysis of IP rights, technology and innovation related policy issues and firms' commercial strategies.

**Textbook:** *Innovation and Incentives*, Suzanne Scotchmer, MIT Press 2004.

**Homework:**

There will be a total of six problem sets throughout the semester. Each student is also required to present a case study, either individually or in a small group.

**About the Case Study**

**WHAT**

Each student is required to present a case study to the whole class, either in a group of TWO or individually if necessary. Students are expected to choose a topic related to one or more subject

matters covered in class. Please note that you need “approval” for 1) the partnership in your group (or individually); and 2) choice of case study topic.

### ***WHEN***

By the end of the semester.

### ***WHERE (&HOW LONG)***

In classroom (but may be at time other than the regular lecture time). Each presentation will have approximately 25 minutes, including the oral part for 15 minutes, and then 10 minutes for questions and answers.

### ***EVALUATION***

80% of the points are based on your performance in your own case study and 20% are based on your participation in Q&A in your peers’ case studies. For your own study, evaluation will be based on adequacy in preparation, identification of relevant major concepts, and the appropriate applications. You need to turn in your presentation file (e.g. Powerpoint) upon completion.

### ***BASIC ELEMENTS OF CONTENT***

- Introduction: background of the issue
- Identification of one of more questions
- Discussion on solutions (in practice or in proposal)
- Take-home messages, including lessons learned, or policy recommendation/implications

### ***EXAMPLES FROM PREVIOUS CLASSES***

“Battle over Stem Cell Patents and WARF”

“Making Money from Open Source? Case of Redhat”

“Congress Readies Broad New Digital Copyright Bill”

“Going Soft on Microsoft?”

“Golden Rice”

“Complementary Trade Structure and U.S.-China Negotiations over IPR”

“Intel Chips: Patents, Comparative Advantage, and Strategy”

“Fashion Design Protection”

“Battle over Standards: Blue Ray vs. HD”

“Copyright Policing on YouTube”

“Auction System in IP”

“Business Models in Music/Movie Industry”

“Rip: A Remix Manifesto”

“Internet Domain Name Issues”

“Monsanto vs. Organic Farmers”

“Piracy in China”

“Napster and the Creation of Digital File Sharing”

“Orphan Drugs: Capturing Social Value through Enhanced IPRs”

“Innovation & Diffusion of Clean Energy Technologies”

“Television Distribution in New Media”

“Jonathan Tasini vs. The Huffinton Post”

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**Grading:**

Midterm Exam	30%
Final Exam	30%
Homework	30%
Case study	10%

Grading Scale: 100-90 A, 89-85 AB, 84-76 B, 75-72 BC, 71-63 C, 62-56 D, 55-0 F

**Office Hours:** by appointment

**Overview of Contents:**

1. Introduction (Lectures 1&2)
  - a. Background and Concepts
  - b. Brief History of Institutions
  - c. Investing in Knowledge
    - i. Market Failures in Knowledge
    - ii. IP, Public Sponsorship & Prize
  
2. IP Law Basics (Lectures 3&4)
  - a. Means of IP Protection
    - i. Patents
    - ii. Copyrights
    - iii. Trade Secrets
    - iv. Others
  - b. IP and Antitrust
  
3. The Impacts of IP on the Plant/Seed Industry (Lecture 5)
  - a. The logic of IP
  - b. Patenting vs. Company Secrets
  - c. Plant Patent Timeline
  - d. Empirical Evidence in Plants: A Puzzle
  
4. Optimal Design of IP (Lectures 6, 7, 8)
  - a. Scarce Ideas vs. Non-scarce ideas
  - b. Policy Levers in IP Design
    - i. Breadth
    - ii. Length
    - iii. Required Inventive Steps
  - c. Optimal Size of Reward and Structure
    - i. Entry Cost Regime
    - ii. Horizontal Competition Regime
  - d. Economic Effects of Exemptions
  
5. Protecting Cumulative Innovations (Lectures 9, 10, 11)
  - a. Three Types of Cumulativeness

- i. Basic v. Applied Research
    - ii. Research Tool
    - iii. Quality Ladders
  - b. Policy Levers and Prospecting
  - c. Open Source (OS)
  
- 6. Licensing, Joint Ventures and Competition Policy (Lectures 12, 13, 14)
  - a. Licensing
    - i. Licensing vs. Product Sale
    - ii. Licensing for Productive Efficiency
    - iii. New Product Innovation vs. Cost Reduction Innovation
  - b. Mergers
    - i. Ex Ante: R&D Joint Ventures
    - ii. Ex Post: Patent Pool
    - iii. Collective Rights Management Organization
  - c. Competition Policy in the Innovation Context
  
- 7. Litigation and Enforcement (Lectures 15, 16, 17)
  - a. Remedies for Infringement
    - i. How they matter
  - b. Enforcement of IP by Technical Means
  - c. Limited Sharing of Copyrighted Works
  - d. Technology Transfer, Diffusion, and Adoption
  
- 8. Networks and Network Effects (Lectures 18, 19, 20)
  - a. Concepts and Issues
    - i. Direct vs. Indirect Network Effects
  - b. Physical Networks
  - c. Business Strategies
    - i. System Competition vs. Standard Competition
  
- 9. Innovation Today: A Private-Public Partnership (Lectures 21&22)
  - a. University Innovation
  - b. Government Grant Process
  - c. Mixed Private-Public Incentives
  
- 10. Innovation in the Global Economy (Lectures 23, 24, 25)
  - a. Who Patents and Where
  - b. Trade Policy and Treaties
    - i. Paris Convention, Berne Convention, TRIPS
    - ii. PCT and WIPO
  - c. National Treatment and Efficient Protection
  - d. Harmonization
  - e. Externalities and International Cooperation