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

Fall 2016  
Tuesday/Thursday, 2:30 – 3:45pm  
Rm 1116, Biochemistry Building  

**Instructor:** Guanming Shi  
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Class website: [http://www.aae.wisc.edu/aae540/main.htm](http://www.aae.wisc.edu/aae540/main.htm)  

**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.  


**Homework:**  
There will be a total of five problem sets throughout the semester. Each student is also required to present a case study.  

**About the Case Study**  

**WHAT**  
Each student is required to present a case study to the whole class. Students are expected to choose a topic related to one or more subject matters covered in class. Please note that you need obtain “approval” from the instructor with regard to the 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 take 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. 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”

Grading:
Midterm Exam 30%
Final Exam 30%
Homework 25%
Case study 15%

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
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