The Economics of Information  
Fall Semester, 2014  
Tu, Thurs, 11–12:20  
123 David Kinley Hall  
Professor Steven Williams  
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30 David Kinley Hall (southwest corner of the basement)  
Office Hours by Appointment  

Microeconomic theory has focused during the past 40 years on information known privately by individual agents and the incentives that they may have to misrepresent that information. A standard example of private information is one’s preferences over goods that may be traded; it is common in bargaining to misrepresent one’s true preferences (e.g., denying that one wants to acquire an item) as a means of influencing the outcome of trading. Private information and the misrepresentation that it permits can cause inefficiency in economic problems and in political choices for groups. The course will cover a number of economic and political problems in which private information affects the outcome. In some problems, mechanisms have been devised to address the problems caused by private information.  

This is a course in mathematical economics. Though very little math beyond calculus is needed for the course, an interest in mathematical proof is absolutely required on your part. You can appraise the level and the flavor of the subject by reviewing the course outline and text. If you dislike mathematics and prefer more factually-based material, then the course is not appropriate for you. If you are unwilling to study a text on your own in advance of a class meeting, or to spend several hours a week solving math problems, then the course is not appropriate for you.  

Please show up to class on time, and please pay attention. I find it very distracting to the class when students wander in late; if you cannot arrive on time, then you should not attend class. Browsing cell phones or other devices in class is also distracting to me and to your classmates.  

Course Text: Donald E. Campbell, Incentives: Motivation and the Economics of Information, Second Edition. New York: Cambridge University Press, 2006. You are responsible for the assigned readings in the course text. Additional readings will also be assigned and will be provided by the instructor.  

Course Webpage: Class notes, sample exams, and all other course materials will be posted on the web page  
\atlaserweb.atlas.illinois.edu\webpages-prod\faculty.las.illinois.edu\swillia3\www\Econ 502 2013\Econ502index.htm  

Course Grade: graded homework assignments (25%); two midterm exams (50%); final exam (25%). The first midterm will be on Thursday, Oct. 2 and the second midterm will be on Thursday, Nov. 13.
Course Outline (subject to change):

1. **Introduction to the Course** (Read pages 1-44)
   (a) Asymmetric Information (Section 1 of Ch. 1)
   (b) Taxi! (Section 2 of Ch. 1)
   (c) Acid Rain (Section 3 of Ch. 1)
   (d) Efficiency (Section 4 of Ch. 1)
   (e) Equilibrium (Section 5 of Ch. 1)

2. **Basic Models and Tools** (Read pages 102-135, 179-195)
   (a) Quasi-Linear Preferences (Section 5 of Ch. 2)
   (b) Decision Making Under Uncertainty (Section 6 of Ch. 2)
   (c) Insurance (Section 7 of Ch. 2)
   (d) Moral Hazard and Insurance (Section 9 of Ch. 3)

3. **Auctions** (Read pages 325-383)
   (a) Introduction (Section 1 of Ch. 6)
   (b) The Vickrey Auction (Section 2 of Ch. 6)
   (c) Four Basic Auction Mechanisms (Section 3 of Ch. 6)
   (d) Revenue Equivalence (Section 4 of Ch. 6)
   (e) Applications of the Revenue Equivalence Theorem (Section 5 of Ch. 6)
   (f) Interdependent Values (Section 6 of Ch. 6)

4. **Voting and Preference Revelation** (Read pages 384-419)
   (a) Voting Schemes (Section 1 of Ch. 7)
   (b) Preference Revelation in General (Section 2 of Ch. 7)
   (c) General Proof of the Gibbard-Satterthwaite Theorem (Section 3 of Ch. 7)
   (d) The Revelation Principle (Section 4 of Ch. 7)

5. **Public Goods and Preference Revelation** (Read pages 420-465)
   (a) The Economic Model (Section 1 of Ch. 8)
   (b) The Pivotal Mechanism (Section 2 of Ch. 8)
   (c) Groves Mechanisms (Section 3 of Ch. 8)
(d) Efficiency and Incentive Compatibility (Section 4 of Ch. 8)

6. Matching (Read pages 467-512)
   (a) Students and Advisors (Section 1 of Ch. 9)
   (b) College Admissions (Section 2 of Ch. 9)
   (c) Hospitals and Doctors (Section 3 of Ch. 9)
   (d) Allocating Dormitory Rooms (Section 6 of Ch. 9)
   (e) Kidney Transplants (Section 5 of Ch. 9)