**Economics 8106 (CRN 5539) Syllabus, Fall 2012**

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# Statement on Academic Freedom

Official Temple University statement: Freedom to teach and freedom to learn are inseparable facets of academic freedom. The University has adopted a policy on Student and Faculty Academic Rights and Responsibilities (Policy #c 03.70.02) which can be accessed through the following link: `http://policies.temple.edu/getdoc.asp?policy_no=03.70.02`.

# Course Description and Goals

This is the last of the microeconomics courses in the Economics Ph.D. program. It covers applications of game theory, imperfect information models, general equilibrium analysis with public goods, and welfare economics. While there is a substantial amount of theoretical material to cover, the course does cover several applications of the theory, especially of game theory. The prerequisite for this course is Microeconomic Theory I (Economics 8005) and the students will benefit substantially from having completed successfully Mathematics for Economists II (Economics 9101).

The class meets on Tuesdays from 5:30 p.m. to 8:00 p.m. in Weiss 704. I can be found in Ritter Annex 813, telephone number 215-204-8169. My office hours there are Mondays and Tuesdays 3:00 p.m. to 4:15 p.m. Appointments for other times can always be arranged by email; furthermore, you can ask me your questions via computer video chat (or plain chat) by previous arrangement on a case-by-case basis. Occasionally I will have to cancel or change a scheduled office hour period, depending on my committee meeting schedule. I will provide warning on such changes on Blackboard as early as is feasible.

My email address is `dimitrios.diamantaras@temple.edu` and I encourage you to use it for most of your questions about the course. Questions on the material and the homework problems will be most welcome all semester long, whether submitted by email or asked in person in office hours or in a computer chat.

Do not ever delay asking a question! Also, the course is available on Blackboard, and you should monitor activity there regularly for announcements and handouts.

There will be regular homework assignments throughout the semester. The assignments will be graded and the homework average grade will count for 20% of the final grade. There will be an in-class closed-book midterm exam (30% of the final grade) and an in-class closed-book cumulative final exam (50% of the final grade). If a student improves his/her grade on the final exam compared to that of the midterm, the final exam grade will serve for 80% of that student's grade. I will give no make-up exams or incomplete grades, unless a student proves to my satisfaction that he/she missed an exam for a reason at least as serious, in my judgment, as being hospitalized on the day of the exam; if such an exception is to occur, I **must** receive notification of the emergency before the start of the examination.

## Academic Honesty

(Adapted from a Temple University text.)

Temple University believes strongly in academic honesty and integrity. Plagiarism and academic cheating are, therefore, prohibited. Essential to intellectual growth is the development of independent thought and a respect for the thoughts of others. The prohibition against plagiarism and cheating is intended to foster this independence and respect.

Plagiarism is the unacknowledged use of another person's labor, another person's ideas, another person's words, another person's assistance. Normally, all work done for courses—papers, examinations, homework exercises, laboratory reports, oral presentations—is expected to be the individual effort of the student presenting the work. Any assistance must be reported to the instructor. If the work has entailed consulting other resources—journals, books, or other media—these resources must be cited in a manner appropriate to the course. Everything used from other sources—suggestions for organization of ideas, ideas themselves, or actual language—must be cited. Failure to cite borrowed material constitutes plagiarism. Undocumented use of materials from the World Wide Web is plagiarism.

Academic cheating is, generally, the thwarting or breaking of the general rules of academic work or the specific rules of the individual courses. It includes falsifying data; submitting, without the instructor's approval, work in one course

which was done for another; helping others to plagiarize or cheat from one's own or another's work; or actually doing the work of another person.

Students must assume that all graded assignments, quizzes, and tests are to be completed individually unless otherwise noted in writing in this syllabus. Specifically, you are allowed to use outside sources or consult with classmates on homework assignments, but *you must cite any sources you used in your handed-in homework assignment and if you consulted with others, you must write their names on the top of the first page of the handed-in homework assignment.* You are expected to work individually on the examinations, which are closed-book. I reserve the right to refer any cases of suspected plagiarism or cheating to the University Disciplinary Committee; I also reserve the right to assign a grade of "F" for the given paper, quiz or test.

## Sources

Microeconomics is a vast field. The following tiny selection of books will be referred to in the course outline below. Double-starred items are mandatory readings and are available in the bookstore or will be distributed in class. All other items are recommended readings.

\*\* Diamantaras, D., K. Campbell, E. Cardamone, S. Deacle, and L. Delgado, *A Toolbox for Economic Design,* Palgrave Macmillan, 2009, henceforth denoted by "**T**". This is the product of a four-year-long effort by myself and four (then) graduate students to write an accessible introduction to the field of economic design. My co-authors were motivated to study this field in more detail when they took this very course you are taking now.

\*\* Mas-Colell, A., M. Whinston, and J. Green, *Microeconomic Theory,* Oxford University Press, 1995, henceforth denoted by "**MWG**". This is a great comprehensive text, and an essential reference book for you to own and use for many years to come; I suggest that you ration out the unassigned part of the book for you to read in your free time, preferably before you start your dissertation research; you will find this effort richly rewarding. You should not be discouraged by MWG's level of mathematical sophistication; I am here to help you get over the mathematical jargon and into the heart of the matter if further help is required. Also, the *Toolbox for Economic Design* has been written in such a way as to provide a gradual introduction to the systematic use of mathematical notation to express economic ideas. The reason that economics uses so much mathematical notation is that it is an essential tool for doing economics *carefully,*

*i.e., correctly.* I expect that you already own this text from your previous microeconomics courses.

** Krishna, V., *Auction Theory, Second Edition,* Academic Press, 2010, henceforth denoted by "**K**". An up-to-date, thorough, clear survey of the fast-moving field of auction theory. We will cover several chapters in class and I recommend the whole book heartily to anyone who wants to do research in any related field of microeconomics.

** Easley, D. and J. Kleinberg, *Networks, Crowds, and Markets: Reasoning about a Highly Connected World,* Cambridge University Press, 2010, henceforth denoted by "**EK**". This is an excellent textbook about the economic theory of networks, written by an economist (Easley) and a computer scientist (Kleinberg) at Cornell University and based on a popular undergraduate course on networks they teach at Cornell.

** Osborne, M.J., *An Introduction to Game Theory,* Oxford University Press, 2004 (henceforth denoted by "**O**"). A first-rate book on game theory, targeted to the advanced undergraduate student. It makes an excellent companion to the dense chapters on game theory in **MWG**. I expect that you already own this text from your previous microeconomics courses.

Jehle, G.A., and Reny, P.J., *Advanced Microeconomic Theory,* Addison Wesley, second edition, 2001 (henceforth denoted by "**JR**"). The second edition incorporated a good section on game theory in what was, in the first edition, a very nice general equilibrium-oriented textbook.

Milgrom, P., *Putting Auction Theory to Work,* Cambridge University Press, 2004 (henceforth denoted by "**M**"). A fine text on auctions. It discusses the mechanism design approach to the design of auctions and many of the real-life complications the auction designer faces. Written by one of the pioneers of the FCC spectrum auction design in the 1990s, who is also a great expositor of difficult concepts.

Wolfstetter, E., *Topics in Microeconomics: Industrial Organization, Auctions, and Incentives,* Cambridge University Press, 1999. This "alternative" textbook emphasizes relatively recent developments in partial equilibrium analysis, making heavy use of game theory. It covers a wide range of topics, and I highly recommend perusing it in order to round off your microeconomics education and to look for appetizing areas in which to specialize and do research.

Salanié, B., *The Economics of Contracts: A Primer,* second edition, MIT Press, 2005.

A nice introduction to contract theory, roughly at the level of **MWG**, but with more space to devote to the topic than **MWG** could afford.

Bolton, P. and Dewatripont, M., *Contract Theory,* MIT Press, 2005. An extensive treatment of contract theory, covering many applications as well as dynamic contracting issues and incomplete contracts.

# Course Outline

This outline is subject to small changes as the semester proceeds. Mandatory readings appear in boldface type.

**28 August**  Institutions in economics, social choice. **T, Chapter 1;** MWG, Chapter 21.

**4 September**  Public good economies. **T, Chapter 11 (Appendix).** William Thomson's 1999 survey (will be distributed).

**11 September**  Dominant Strategy Implementation. **T, Chapter 2**.

**18 September**  Bayesian Equilibrium and Signaling Games. **O, Chapters 9 and 10.**

**25 September**  Introduction to Auctions and a first look at Private Value Auctions. **K, Chapters 1 and 2.** For very useful background information, **Wolfstetter's Chapter 8 (will be distributed) K, Appendices A, B, C, and D.** Wolfstetter's chapter is an excellent summary of auction theory and will benefit you as you read **K**.

**2 October**  The Revenue Equivalence Principle and qualifications and extensions of the basic model of Private Value Auctions. **K, Chapters 3 and 4.**

**9 October**  Mechanism Design applied to Auctions. **K, Chapter 5.**

**16** October  **MIDTERM EXAM: In-class, closed-book exam.**

**23 October**  Auctions with Interdependent Values and the Linkage Principle. **K, Chapters 6 and 7.**

**30 October**  Asymmetries and other complications in Auction theory, and Efficiency and the English Auction. **K, Chapters 8 and 9.**

**6 November**  Mechanism Design with Interdependent Values and Bidding Rings. **K, Chapters 10 and 11.**

**13 November**  Introduction to Social Networks. **EK, Chapters 1, 2, 3, and 4.**

**20 November**  No class; treat this day as a Thursday (see Temple University's 2012—2013 academic calendar).

**27 November**  Matching Markets and Network Models of Markets with Intermediaries. **EK, Chapters 10 and 11.**

**4 December**  Information Cascades and Network Effects. **EK, Chapters 16 and 17.**

**11 December**  **FINAL EXAM: in-class, closed-book exam.**