Department of Economics
Course Outline

		Term:	Spring 2005

Course:	Economics 611.71	**Section:**	20
Time:	TBA	**Place:**	SS 423
Instructor:	Clint Levitt Neil Gandal		
Office:		**Telephone:**	
Office Hours:	TBA	**E-Mail:**	clinton-levitt@uiowa.edu gandal@post.tau.ac.il

Text(s) Required: There is no required textbook for this course.

Course Description:

This is a course in empirical methods in industrial organization. The course consists of two modules. The first module will be taught by Clint Levitt of University of Iowa, the second by Neil Gandal from Tel Aviv University. The course and administrative details follow for the two modules. Note that each module is equally weighted in the determination of the final grade.

First Module

This module is the first of a two module course on empirical methods in industrial organization. This first module will emphasize the development of the statistical and econometric tools that are often used in the Empirical IO literature. Since everyone enrolled in this course has already studied the linear model, and most of its variants, we will study a few

alternative estimation strategies that are frequently used in the IO literature. In particular, I hope to cover maximum likelihood, generalized method of moments, nonparametric, and semi-nonparametric methods. How far we get will depend on the different interests and backgrounds of the students in the class. The second part of this module will consist of applying these estimation strategies to auction data.

We begin the module by introducing structural econometrics. The main idea of structural econometrics is using economic theory to identify the unobservables we are interested in estimating. The first estimation strategy that we will study is maximum likelihood. We will cover most of the standard statistical analysis concerning maximum likelihood estimators. We then turn our focus on applying this estimation strategy to auction data. In most cases, however, to be able to use maximum likelihood estimation it is often necessary to solve optimization problems using mathematical software. Therefore, we will also look at solving optimization problems with mathematical software *Matlab.*

We will apply this estimation procedure to the structural estimation of auction data. Applying these tools to auction data is useful for a number of reasons. First, auctions provide a concrete example of how economic theory can be used to identify the unobserved variables that we want to estimate. In the case of auctions, we are primarily interested in estimating bidders' valuations or in the case of procurement auctions, the cost distribution of the participants. Second, using maximum likelihood to estimate bidders' valuations is relatively straightforward thereby allowing us to focus on learning ML estimation rather than on complex economic models. Third, we study an area of empirical IO that will not be covered in the second module of the course.

The next topic is generalized method of moments. We will again go through the standard statistical analysis of these estimators and apply the tools to auction data.

The final topics are nonparametric and semi-nonparametric methods. In this topic we will look at estimating empirical distribution functions and density functions. We will look at kernel smoothing techniques. Again, we will then apply these techniques to auction data.

What are the objectives of this module? The primary objectives are to understand structural econometrics, to learn a few additional estimation techniques beyond the linear regression model, and most importantly, how to actually put these new tools into practice. Therefore, we will be completing some examples in class that use these techniques and you will get an opportunity to use them in problem sets. In completing these primary objectives we will also cover some useful tools that may help you in your other work. Some of the secondary objectives include learning how to use *Matlab*, and introducing a few very basic techniques of approximating functions and numerical integration that are relatively easy to implement. Finally, you will get an introduction to auction theory and the structural estimation of auction data.

Module Course Outline:

A readings list will be distributed on the first day of class.

Module Grade Determination and Module Final Examination Details:

2 Assignments (20% Each)	40%
Final Exam	60%
Total	100%

Module Final Exam:

The final exam will consist of a take-home project in which you will have 24 hours to complete.

Second Module

This weeklong module will cover research methods in empirical industrial organization, with an application to network industries. The first part of the module will focus on seminal papers that illustrate empirical methods in IO with both homogeneous and heterogeneous products. The second part of the module will focus on empirical applications to the economics of network industries.

Module Course Outline:

Topic I: Introduction to the class and to the new empirical industrial organization

Topic II: Seminal Papers that illustrate empirical methods in IO with homogeneous products

Topic III: Discrete Choice Models of Product Differentiation

Topic IV: Merger Analysis

Topic V: An Introduction to Network Economics

Topic VI: Empirical Research on Network Effects

Topic VII: Empirical Research on Standards Competition

Module Grade Determination and Module Final Examination Details: As the class develops, a more detailed reading list and copies of the lectures will be distributed.

Take Home Assignment	100%

Blackboard:

This course will make use of Blackboard. Students who are registered in the course can log on at
http://blackboard.ucalgary.ca/webapps/login .

Notes:

Students must receive a passing grade on the final exam to pass the course. As per the Writing Across the Curriculum Statement in the Calendar, writing and grading thereof will be a factor in the evaluation of student work. Details on the writing assignment(s) will be provided at a later date.

Non-programmable calculators are permitted for all exams. There will be a Registrar scheduled final examination which will be held jointly with Economics 599.05 (01) and will be two hours in duration. It will be held in a classroom. The final examination will be comprehensive. The exact date for the in-class midterm will be announced at least one week in advance.

In cases of documented illness or family emergency, extra weight will be given to the final examination. Any student work which remains undistributed after the last day of classes will be available to students through the instructor's office during his office hours.

The official grading system will be used.

Tests and exams will not involve multiple choice questions.

Students seeking reappraisal of a piece of graded term work (term paper, essay, etc.) should discuss their work with the Instructor within two weeks of the work being returned to the class.

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