The Pennsylvania State University   Summer 2007
Department of Economics

Course Syllabus
Economics 390
Section 001
Statistical Foundations for Econometrics
3 credit hours
MTWRF 02:20 – 03:35 PM, 260 Willard
Schedule number 781540

Instructor Information

Instructor: Ivan Cherkashin, Graduate Instructor of Economics
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Course milestones

1st **midterm:** Tuesday, June 5, in class
2nd **midterm:** Tuesday, June 19, in class
Final exam: JULY 2nd, Exact time and place to be announced by the university

Course textbook:

Statistics for Business and Economics, by Paul Newbold, William L. Carlson, Betty Thorne, 6th Edition, Prentice Hall, ISBN 0-13-188090-X

Course webpage:

The course web site is located at http://www.econ.psu.edu/~ivt101/teaching.htm. This site will contain all course materials, such as syllabus, homework assignments, solutions and review materials. Information on all important course events will also be posted at the page. Students are responsible for checking the page periodically.

Course Description and Objectives

This course presents material from probability and statistics that constitutes the necessary underpinnings for the successful study of introductory econometrics in Econ 490. The first part of the course will cover the structure of probability and provide many examples of the use of probabilistic reasoning. It will then move to a discussion of the most commonly encountered probability distributions, both discrete and continuous. Next we will discuss sampling from a population and the distributions of some sample statistics. From there we will move to the problem of estimation – the process of using data (in the best possible way) to inform us about the value of the unknown parameters of a distribution. Finally, we will discuss hypothesis testing – the use of data to confirm or reject hypotheses that we have formed about how the world works. If there is time, we will also introduce simple regression.

Course Requirements

The direct course requirements are straightforward. You must:
(1) Take midterm exams
(2) Do homework assignments and turn them in on time
(3) Take the final exam.

Attendance: Attendance will not be taken in the class. However, the course is designed with the idea that you will be present in class regularly. You are responsible for any material, written assignments, reading material, etc, covered or assigned in class. Homework assignments are to be submitted in class or in exceptional cases prior to it (see Homework assignments policy for details).

Grading

Grades for the course will be based on the results of home assignments, 2 in-class closed books midterms and on the final closed books exam. The following table summarizes relative importance of each component:

Home assignments	20%
2 in-class midterms	25% (each)
Final Exam	30%
Total	100%

Grade Distribution:

93 and up = A
90-93 = A-
87-90 = B+
83-87 = B
80-83 = B-
77-80 = C+
70-77 = C
60-70 = D
Below 60 = F

Homework assignments policy: Homework assignments are included in the course to enhance your understanding of the main concepts and help prepare for midterms and exams. Homework assignments must be submitted in the class. **You are encouraged to work together on homework assignments, but you must write up the assignment individually.**

Missed homework and exams: There will be no makeup homework. If you fail to turn in homework on time, you will receive a zero for that homework. If you have an excused absence such as a university-sponsored activity, I will accept homework assignments in advance of the due date. If you have a valid, documented excuse for missing a class at which a homework assignment is due, you should see me as soon as possible after the missed class.

There will be no make-up exams. If you have a valid, documented excuse for missing a midterm/exam, you will be excused from that midterm/exam. The weight of the missed midterm will be shifted to **the final exam**. In the case of a valid, documented excuse for missing

an exam, you should inform me before scheduled exam time that you will miss the exam, unless circumstances make it impossible for you to do so.

Academic Integrity

"Academic integrity is the pursuit of scholarly activity in an open, honest and responsible manner. Academic integrity is a basic guiding principle for all academic activity at The Pennsylvania State University, and all members of the University community are expected to act in accordance with this principle. Consistent with this expectation, the University s Code of Conduct states that all students should act with personal integrity, respect other students dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts.

Academic integrity includes a commitment not to engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others." — From Penn State's *University Faculty Senate Policy 49-20*

Dishonesty of any kind will not be tolerated in this course. Dishonesty includes, but is not limited to, cheating, plagiarizing, fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. Students who are found to be dishonest will receive academic sanctions and will be reported to the University's Judicial Affairs.

For more information on Penn State academic integrity policy check the university web page: http://academicintegrity.cas.psu.edu/

Valid Excuses

During the course many possible situations may arise that would result in your inability to attend class, attend exams, or perform at a minimally acceptable level during an examination. Illness or injury, family emergencies, certain University-approved curricular and extra-curricular activities, and religious holidays can be legitimate reasons to miss class or to be excused from a scheduled examination.

In the case of your own illness or injury, confirmation from a physician, physician's assistant, a nurse-practitioner, or a nurse is required. Be advised that University Health Services cannot provide such verification unless they have provided treatment and the student authorizes release of information to the instructor. Further, barring extraordinary circumstances, the confirmation must be available to the instructor prior to the missed course event.

With regard to family emergencies, you must provide verifiable documentation of the emergency. Given the vast array of family emergencies the instructor will provide precise guidance as to what constitutes adequate documentation. Unless the emergency is critical you should notify the instructor in advance of your absence from the scheduled course event. In cases of critical emergencies, you must notify the instructor within one week of your absence.

For University-approved curricular and extra-curricular activities, verifiable documentation is also required. The student should obtain from the unit or department sponsoring the activity a letter (or class absence form) indicating the anticipated absence(s). The letter must be presented to the instructor at least one week prior to the first absence.

In the case of religious holidays, the student should notify the instructor by the third week of the course of any potential conflicts.

Students with Disabilities

The Pennsylvania State University encourages qualified people with disabilities to participate in its programs and activities and is committed to the policy that all people shall have equal access to programs, facilities, and admissions without regard to personal characteristics not related to ability, performance, or qualifications as determined by University policy or by state or federal authorities. If you anticipate needing any type of accommodation in this course or have questions about physical access let me know as soon as possible.

Changes to the Syllabus

Any changes to this syllabus will be announced in class and posted on the web site for this course.

Tentative Course outline

1.   Probability – Chapter 4

2.   Random Variables and Expectations
           a. Discrete Random Variables – Chapters 5.1-5.3
           b. Continuous Random Variables – Chapters 6.1-6.2

3.   Specific Univariate Distributions – Chapters 5.4, 5.6, 6.3, 6.4, 6.5

     Exam 1: Tuesday, June 5, In Class.

4.   Two Random Variables – Chapters 5.7, 6.6

5.   Sampling and Sampling Distributions – Chapter 7

6.   Estimation – Chapter 8

     Exam 2: Tuesday, June 19, In Class

7.   Hypothesis Testing – Chapter 9

8.   Simple Regression and Simple Correlation – Chapter 10

     Final Exam: JULY 2nd, Exact time and place to be announced by the university