

## *Course Syllabus*

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### **POEC 6344: Categorical and Limited Dependent Variables**

**Fall Semester 2006, CRN 13665, Section 001  
Wednesdays, 1:00pm to 3:45pm  
SOM 2.902 (School of Management Building)**

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#### **Professor Contact Information**

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Office Hours: Tuesday 2-4 and by appointment.

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#### **Teaching Assistant**

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Office Hours: Monday 5-7 and by appointment

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#### **Course Pre -requisites, Co-requisites, and/or Other Restrictions**

POEC 5316 or the equivalent recommended. In other words, you should have a strong grounding in Ordinary Least Squares (OLS) regression at the level of the Gujarati text (chapters 1-9) or better. Matrix algebra and calculus are both used in lectures, but not extensively.

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#### **Course Description**

This course examines several types of advanced regression models that are frequently used in policy analysis and social science research. The key similarity of these models is that they involve dependent variables that violate one or more of the assumptions of the Ordinary Least Squares (OLS) regression model. The main models examined in the course are binary logit and probit, multinomial logit, ordinal probit, tobit, and the family of Poisson regression models. The Heckman correction for selection and Event History Analysis are also addressed. All these models are estimated using maximum likelihood

estimation (MLE). The course focuses on the application and interpretation of the models, rather than statistical theory.

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### **Student Learning Objectives/Outcomes**

- Students will learn the theory and practice of regression models for limited and categorical dependent variables, including logit, probit, ordinal logit, ordinal probit, multinomial logit, Poisson regression, Tobit and related models, and event history analysis.
  - Students will learn how to interpret these models by reviewing published papers drawn from social science literature.
  - Students will develop proficiency in applying and interpreting these models using data provided by the instructor.
  - Students will demonstrate mastery of the material by writing an empirical paper using one or more of the models discussed in class and presenting their analysis and findings in class.
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### **Required Textbooks and Materials**

J. Scott Long, *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks, CA: Sage.

Paul D. Allison, *Event History Analysis: Regression for Longitudinal Event Data. Quantitative Applications in the Social Sciences, #46*. Thousand Oaks, CA: Sage

### **Suggested Course Materials**

If you need to review your calculus, or you've never had formal calculus and want a quick and dirty guide, you should purchase the following inexpensive book from the Sage Series (the little green books):

Gudmund R. Iversen, *Calculus*. Quantitative Applications in the Social Sciences, #110. Thousand Oaks, California: Sage.

Alternatively, for a more in depth treatment, you could check out a calculus text from the library, but Iversen's is much briefer and will suffice for our purposes.

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### **Assignments & Academic Calendar**

<p style="text-align: center;"><b>Schedule, Readings and Assignments</b> (Consult WebCT for updated information.)</p>
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1	Aug. 23	<b>Review of OLS and Its Limitations. Principles of Maximum Likelihood Estimation</b> Review statistics if necessary (e.g. Gujarati Appendix A) Review OLS regression if necessary (e.g. Gujarati, Ch. 1-9) Long, Chapter 2
2	Aug. 30	<b>Binary Dependent Variables</b> Long, 3.1-3.4
3	Sep. 6	<b>Interpretation and Hypothesis Testing Applications</b> Long, Sections 3.7-3.9 Long, Chapter 4.1, 4.3 Long 4.2 (optional)
4	Sep. 13	<b>Ordinal Dependent Variables</b> Long, Sections 5.1-5.4 <i>Problem Set #1 Due</i>
5	Sep. 20	<b>Nominal Dependent Variables</b> Long, 6.1-6.2, 6.4-6.6 Long, 6.7-6.9 (optional)
6	Sep. 27	<b>Censored and Truncated Dependent Variables</b> Long, Chapter 7 <i>Empirical Paper Topic Proposal Due</i>
7	Oct. 4	<b>Applications and Review for Midterm</b> <i>Problem Set #2 Due</i>
8	Oct. 11	<b>Midterm Exam</b> Open book, open note Bring a calculator
9	Oct. 18	<b>Sample Selection Models</b> Readings TBA
10	Oct. 25	<b>Counts as Dependent Variables</b> Long, Chapter 8 <i>First Draft of Empirical Paper Due</i>
11	Nov. 1	<b>Introduction to Event History Analysis</b> Long, Section 9.4 Allison, Chapters 1 and 2
12	Nov. 8	<b>Further Issues in Event History Analysis</b> Allison, Chapters 3 and 4
13	Nov. 15	<b>Student Presentations</b> <i>Empirical Paper Due</i>
14	Nov. 22	<b>Review for Final Exam</b> <i>Problem Set #3 Due</i>
15	Nov. 29	<b>Final Exam</b> Open-book, open-note Bring a calculator.

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### Grading Policy

The grading in the course is based on the problem sets, examinations, and the empirical paper. The weights assigned to each are as follows:

Problem Sets:	25%
Midterm Examination	25%
Final Examination	25%
Empirical Paper	25%

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### Course & Instructor Policies

**Late Work.** Problem sets will not be accepted late, because the answers are discussed in class on the day they are due. Due to a medical emergency or other valid reason, you may be excused from turning in a problem set. In such cases, the grade will be computed based on the remaining problem sets. Consult me *in advance of the due date*, if at all possible, if such a contingency should arise. Likewise, I can not give early or late examinations. Arrange your schedule now to avoid potential conflicts.

**Software.** The official software for the course is Stata, Version 9, but any recent version will work nearly as well. Stata is available for student use in the Social Sciences Computer Lab (GR 3.206) free of charge. However, if you wish to purchase a copy for your own computer, you may purchase the software at an educational discount through the “UTD Social Sciences Grad Plan.” A separate document contains information about ordering Stata through the Grad Plan.

**Calculator.** A calculator is a virtual necessity for this class. However, any basic scientific calculator will do. The following functions are necessary: square root,  $y^x$ ,  $e^x$ , and  $\ln(x)$ . Such calculators can often be obtained for under \$10. You will not need graphing capability or programmability.

**Attendance.** Attendance is entirely optional. However, be advised that you are responsible for any material covered in the class, whether or not it was in the readings or lecture notes. You are also responsible for any announcements made in class. For most students, attendance is simply essential to learning the material. If you do need to miss a class, be sure to consult with a fellow student to learn what transpired.

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### Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university’s *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

### **Academic Integrity**

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

### **Email Use**

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

### **Withdrawal from Class**

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

### **Student Grievance Procedures**

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain

primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

### **Incomplete Grade Policy**

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

### **Disability Services**

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:  
The University of Texas at Dallas, SU 22  
PO Box 830688  
Richardson, Texas 75083-0688  
(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

### **Religious Holy Days**

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

***These descriptions and timelines are subject to change at the discretion of the Professor.***