

## **Intermediate Social Statistics Hilary 2011**

### **Topics to be covered:**

Research Design and Measurement  
Binary logit and probit  
Binary Logit and Probit Models: Extensions and Applications  
Ordered Logit/Probit  
Multinomial logit/probit  
Duration Models  
Introduction to Time Series  
Introduction to Maximum Likelihood Estimation (MLE)

### **Course structure**

There will be a two hour lecture on Tuesday 2-4 pm in the IT room in the Manor Road Building every week during Hilary term. These lectures are accompanied by four classes where the practical aspects of the models discussed in the lecture will be taken up. Classes will be run by Yekaterina Chzhen on Thursdays of weeks 3, 5, 6 and 8 in the Manor Road Building IT room from 4-6pm.

### **Topics to be covered:**

Week 1: Research Design and Measurement

- Kellstedt and Whitten: Chapters 4 and 5.

Additional Readings

- Joshua D. Angrist and Jörn-Steffen Pischke. *The Credibility Revolution in Empirical Economics: How Better Research Design is Taking the Con out of Econometrics*

Week 2: Binary Logit and Probit

- John Aldrich & Forrest Nelson, *Logit and Probit Models*, Sage, 1985.
- Long, J. Scott. 1997 *Regression Models for Categorical and Limited Dependent Variables*. Chapter 3 and 4.
- Long, J.S. and Freese, J. (2006) *Regression models for categorical dependent variables using Stata*. Stata Press. Chapter 4.

### Week 3: Binary Logit and Probit: Extensions and Applications

- John Aldrich & Forrest Nelson, *Logit and Probit Models*, Sage, 1985.
- Long, J. Scott. 1997 *Regression Models for Categorical and Limited Dependent Variables*. Chapter 3 and 4.
- Long, J.S. and Freese, J. (2006) *Regression models for categorical dependent variables using Stata*. Stata Press. Chapter 4.

### Week 4: Ordered Logit/Probit

- Long, J.S. (1997) *Regression models for categorical and limited dependent variables*. Sage. Chapter 5.
- Long, J.S. and Freese, J. (2006) *Regression models for categorical dependent variables using Stata*. Stata Press. Chapter 5.

### Week 5: Multinomial Logit/Probit

- Long, J.S. (1997) *Regression models for categorical and limited dependent variables*. Sage. Chapter 6.
- Long, J.S. and Freese, J. (2006) *Regression models for categorical dependent variables using Stata*. Stata Press. Chapter 6.

### Week 6: Duration Models

- Cleaves, M., Gould, W., and Gutierrez, R. (2002) *An introduction to survival analysis using Stata*. Stata Press.
- Cox, D.R. and Oakes, D. (1996) *Analysis of survival data*. Chapman & Hall.

### Week 7: Introduction to Time Series

- Kellstedt and Whitten: pp 233-242.
- Damodar Gujarati, *Basic Econometrics*, McGraw-Hill, 4th ed., 2002. Chapters 12 and 17; 12-22.

### Week 8: Introduction to Maximum Likelihood Estimation (MLE)

- Eliason, S. (1993) *Maximum likelihood estimation: logic and practice*. Sage.

- Long, J.S. (1997) *Regression models for categorical and limited dependent variables*. Sage. Chapter 2.

### ***Assessment***

For those who are taking this course for credit, your grade will be based on four weekly assignments. Your homework assignments should be handed into your class instructors at the date indicated on each of the weekly assignments. In the homework, you will be expected to demonstrate skill in the application of, and ability to evaluate critically, the models and methods discussed in both the lectures and classes. There will also be a take home exam that will be due in Week 9 (subject to confirmation).

### ***Principal Texts:***

J Scott Long. 1997. *Regression Models for Categorical and Limited Dependent Variables*. Sage.

J Scott Long and Jeremy Freese. 2006. *Regression Models for Categorical Dependent Variables Using Stata*. Stata Press.

Paul M. Kellstedt and Guy D. Whitten. 2009. *The Fundamentals of Political Science Research*. Cambridge University Press.

John Aldrich & Forrest Nelson, *Logit and Probit Models*, Sage, 1985.

Eliason, S. (1993) *Maximum likelihood estimation: logic and practice*. Sage.

Cleeves, M., Gould, W., and Gutierrez, R. (2002) *An introduction to survival analysis using Stata*. Stata Press.