

Models & Methods  
Preliminary Examination  
Fall 2004

**RULES AND DIRECTIONS:** You will have eight hours in which to answer the required questions. **The exam must be handed in no later than 4:00 p.m.** Be sure to save some of your time for putting your answers into an organized, typed or legibly written version in good English. Also be sure that you answer all the parts of each question and that you refer to the appropriate scholarly literature in each answer. This is a “closed book” exam. Students may not use notes or books, nor may they discuss the examination with anyone while taking it.

**Important:** Be sure that you choose your questions in order to demonstrate the breadth as well as the depth of your knowledge. It is your responsibility to ensure that your selection of questions and answers to them are distinctive and do not contain undue overlap and repetition.

Please answer one question from Part I, and two questions from Part II.

### **THEMATIC QUESTIONS**

#### **PART I:**

Write one (1) of the following essays.

1. Obviously political science is the study of social behavior, including individual behavior, collective behavior, etc. How can a deductive mathematical approach be used to understand social phenomena? What is a justification for the appropriateness of mathematical and formal approaches in your view?
2. What are the key assumptions of the regression model? Which of these assumptions is (are) most often violated in actual research, or in research in given subfields? Are these violations serious? Why? Why not?
3. Evaluate the claim that the greatest barrier to scientific progress in the study of politics is our inability to conduct controlled experiments. Is this barrier equally serious in all subfields? Are quasi-experimental techniques sufficiently developed to allow sound scientific inference? How so?

## **SEMINAR QUESTIONS**

### **PART II:**

Write two (2) of the following essays.

1. Defend or refute the following statement: Logit or probit is always the best way to estimate a regression model with a dichotomous dependent variable. Be sure to explain the pros and cons of using logit/probit relative to competing models.
2. A common critique of game theory is that its assumptions about individual level behavior are too restrictive. Focusing on one specific area of application (e.g., Congress, the courts, or mass behavior), explain why you think this is (not) a fair critique. If you consider the critique fair, explain which particular assumptions are problematic. What are the implications for game theoretic modeling (these applications)?
3. Discuss the various game theoretic solution concepts and how they relate to one another. Are some concepts more useful in the study of particular political questions? How so?
4. Based on theories of attitude formation and theories of survey response, how would you design a survey questionnaire to enable respondents to report their attitudes as easily and as accurately as possible (i.e. with as little measurement error as possible)?