Basic Information
Class meets: Thursdays, 1:40-4:30 Prescott Hall
Instructor: Dr. Heather Ondercin
Office: 235 Stubbs Hall
E-mail: ondercin@lsu.edu
Office Phone: 578-2535.
Office hours: Tuesday 1:30-4:00 pm and by appointment.

E-mail is an effective way to reach me, I check my messages several times a day. If my office hours don’t work for you, talk to me and we can make an appointment. Never hesitate to talk to me if you have a problem, comment, or concern.

Prerequisites: POLI 7962 and POLI 7963 or the equivalent classes in another department. At a minimum students need to have a basic understanding of Ordinary Least Squares and the BLUE assumptions. Additionally, students should have a basic understanding of the statistical software package STATA.

Course Description
This course is designed as an introduction to models used for data that varies both across units and across time. Examples include modeling attitudes of the same individual over time, budgets of countries over time, whether a country more or less likely to fight under a democratic or a non-democratic government.

Objectives of the Course
• Develop good practices for executing social science research.
• Think critically about how best to analyze the unique features of a data generating process and various data structures.
• Develop a set of skills that will serve as a basis that will allow students to learn new methods when necessary for future research.

Much of the literature on pooled cross-sectional time series is highly technical and jargon filled. The first half of the course is designed to help you better understand the more technical material later in the course. We will start with a brief overview of mathematical topics that will be useful for reading and understanding material later in the class. This will include mathematical notation, analytic geometry, linear (matrix) algebra, and OLS estimated using matrix algebra. We will also do a quick review of OLS estimation and the BLUE properties.
associated with OLS. Finally, we will do a quick introduction to time series. Please note that this is not a time-series class. We will only spend one week talking specifically about time series; rather than the semester length treatment necessary for a true introductory time series course. In the second half of the class we will tackle multiple types of models for data that vary across both space and time. We begin this discussion with models developed for continuous dependent variables such as fixed-effect, random effects, gls-based models, and models with lagged dependent variables. The final type of models we will consider are those developed for binary dependent variables.

This class takes both a technical and applied approach to the study of methods. Each class will consist of lecture, discussion, and applied activities. The lectures will be a combination of the theoretical and technical components underlying the models and application of the methods to social science research. The term lecture can actually be misleading. I think that the best way for us learn methods is to have a discussion about them. So I encourage questions and conversations about the material we are covering during lectures. We will apply our technical knowledge to the subject matter in two ways. This class does not have a lab section associated with it, so we will devote part of each class to a “Lab” session. In these sessions we will cover general topics about STATA, model specification and presentation of data. We will also go over specific commands related to the models that we discussed in lecture. We will also hold discussions about the methods used in applied research articles. Expectations regarding these discussions are detailed below.

This class is mainly designed for political science students. That is not to say that scholars in other disciplines may not encounter similar data structures and methodological issues; rather, the specific topics and examples we cover will be those that are most familiar to political scientists.

Class Policies And Expectations

Students are expected to come to class prepared and ready to learn. Students should complete the required readings before the class they are assigned for. While I have tired to select assessable readings, some will be challenging and may need to be read multiple times. I recommend that you read the material before class and then again after class. I can guarantee you every time you read the articles you will get something more out of them.

If you are experiencing problems of any sort please talk to me as early as possible. Everyone learns in different ways and has different strengths and weaknesses. I try to develop class activities and ways to assess your progress that accommodate these various learning styles. With that said there may be parts of this class that you will find challenging. If you come and talk with me we can work on those issues to ensure your success in the class. However, if you wait until the day before the exam or an assignment is due it will be too late. So please talk to me as soon as you begin to experience problems.
Shut your cell phones off before coming to class. It is disturbing to me and your fellow students. I reserve the right to confiscate phones if this becomes a problem. The use of laptops are allowed (actually encouraged) during the lab sessions. The use of laptops during the rest of the class is highly discouraged. It will be difficult to take notes on a laptop during lecture and discussion.

All students are expected to work independently on all assignments. Group and collaborative work is not permitted unless specific instructions are given. Proper citations must be used to acknowledge any ideas, concepts, theories, organizational formats, and writing that is not your own. If you are not clear on how to properly give credit to others, please see me before turning in any assignment. All students are required to read and be familiar with the Code of Student Conduct found at [www.lsu.edu/judicialaffairs](http://www.lsu.edu/judicialaffairs) as well as all other university policies and procedures. If you have questions about what constitutes plagiarism see: [http://www.lib.lsu.edu/instruction/plagiarism/html](http://www.lib.lsu.edu/instruction/plagiarism/html). I take this issue very seriously and will check all things turned into me for signs of plagiarism.

Students with disabilities: Reasonable accommodations will be made for any student with documented disabilities to ensure that the student is able to participate in class to the best of their abilities. If you anticipate needing any type of accommodation in this course or have questions about physical access, please tell the instructor as soon as possible. Reasonable accommodations will be made for all students with disabilities, but it is the student’s responsibility to inform the instructor early in the term. It is also the student’s responsibility to register with the disability service office on campus. Do not wait until just before an exam to decide you want to inform the instructor of a learning disability; any accommodations for disabilities must be arranged well in advance.

If you did not attend the first day of class and/or added the class late, all class policies apply equally to you. It is your responsible to find out any information gone over during the class periods you missed. Deadlines will not be adjusted on an individual basis.

### Grading

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### Participation

You will not get much out of this class if you are a passive observer. You should come to class
having read the material and prepared to discuss the different topics. You should always be thinking about how this relates to your research questions and interests. In addition to being an active participant in class, part of the participation grade will be based on presentations of applied readings. Throughout the reading list you will find application readings for some of the topics. You are to select an application reading to read and write a two page summary of the reading and then present the methods and findings. The summaries will be do in class for the day they are listed on the syllabus. While the theory of the paper should be addressed in the summary, the majority of the summary should be about the methods in the paper. You are expected to be an expert on the article you selected for the discussion about the article that day. I will choose someone for each article to start off the discussion. Just because you are not chosen you are still not off the hook. You will be expected to ask questions and contribute to the conversation.

**Homework**
It is impossible to learn methods just by reading and talking about them. As a result we will have a series of homework assignments due throughout the class. The homeworks are noted in the course outline below. Homeworks are due by 4 p.m. the Wednesday after they are assigned. After the first two homework assignments, all homework assignments should be typed. I expect there to be considerable detail and discussion for each of the homeworks. Think of them as the results section of an empirical research paper, but on methods steroids. Your homework should have both technical discussions of the methodical issues and plain language that an average reviewer would be able to understand. Results should be presented in tables and figures. Do not copy and paste your STATA output as your results table. Along with the written portion of your homework turn in your do file associated with the analysis.

**Poster and Paper**
You will be asked to apply the skills that you have acquired throughout the semester by completing a final research paper and poster. The topic of the research paper and poster is up to you, should be related to your substantive area of research, and incorporate the methods used this semester.

Poster sessions are becoming more common at social science conferences. As part of the class we will hold our own mini-poster session during the final class period. We will open the poster session up to all the faculty and graduate students in the Political Science Department. Your grade will be based on the content of the poster and your ability to answer questions of those attending the poster session. Details about poster size and tips on how to create a good poster will be forthcoming.

The paper should be a complete research paper, including a theory and literature review. Your method and results section should be highly detailed. Including figures, graphs, and references, the paper should be 20-30 pages typed, double spaced. Papers should be e-mailed to me as a pdf. You should also include all do files associated with the paper. Papers are
due on December 10th by noon. Late papers will be reduced one letter grade for every 30 minutes it is late.

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**Required Texts**


**Required Software**

Students should have access to a copy of STATA version 10 or higher. You can get discounted version of STATA through the University. There are minor differences between the versions of STATA, so if you end up with one different than what we use in the class we can probably figure out the differences as we go.

**Recommended and Supplementer Texts**


**Tentative Course Outline**

**Thursday, August 25th**

Overview of Class; Good STATA Practices; Start Math Review

Readings:

1Any changes to this schedule will be announced verbally in class. It is the student’s responsibility to note changes and adhere to the new schedule.


**Thursday, September 1**<sup>st</sup> APSA – No class but do the readings and homework on your own. Readings:


Supplemental Readings:


**Thursday, September 8**<sup>th</sup> OLS in Matrix and Review of OLS Readings:


Supplemental Reading


**Thursday, September 15**<sup>th</sup> OLS Review Readings


Supplemental Readings:


**Thursday, September 22**<sup>nd</sup> Time Series Readings

Supplemental Readings:


**Thursday, September 29th** Overview of Pooled Cross Sectional Time Series Reading:


Supplemental Readings:


**Thursday, October 6th** Unit Heterogeneity: Fixed- and Random Effects Models


Supplemental Readings:


• Cameron and Trivedi, Chapter 21


Application Reading (choose 1):


**Thursday, October 13**

**Thursday, October 20** Random, Fixed-Effects, and other topics.


Supplemental Readings:


- Political Analysis 19(2), Spring 2011. Multiple articles on fixed effects with time-invariant variables.

Thursday, October 27th Dynamic Issues in Time-Series Cross-Sectional Data Readings:


Supplemental Readings:

- Cameron and Trivedi, Chapter 22

- Hsiao, Cheng. 2003. Analysis of Panel Data, Chapter 4, sections 1 through 5.


Application reading (choose 1):


Thursday, November 5th More Dynamics Readings:


Supplemental Readings:


Application Reading (Choose 1):


**Thursday, November 10th** Non-Continuous Response Variables Readings:


**Recommended Readings:**

• Cameron and Trivedi Chapter 23


**Application Reading (choose 1):**


**Thursday, November 17th** Paper/Poster Work Day.

**Thursday, November 24th** Thanksgiving Break

**Thursday, December 1st**

• Poster Session

**December 7th** Final papers due at noon.