Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
• Submit original form and attach a course syllabus.

1. This request is submitted by the Department of Political Science

2. Course prefix, number and complete title of course: POLS 607 Advanced Research Methods for Political Scientists II

3. Course description (not to exceed 50 words):
Advanced techniques for specialized problems in empirical political analysis, including voter choice models, longitudinal data, elite interviewing, problems of formal theory and others. May be taken up to three times as content varies.

4. Prerequisite(s): POLS 601, POLS 602

5. Is this a variable credit course? □ Yes ☑ No  If yes, from _______ to _______

6. Is this a repeatable course? ☑ Yes □ No  If yes, this course may be taken ______ times.
Will this course be repeated within the same semester? ☑ Yes □ No

7. Has this course been taught as a 489/689? □ Yes ☑ No  If yes, how many times? ______
Indicate the number of students enrolled for each academic period it was taught.

8. This course will be:

a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)

b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography) Ph.D. in Political Science

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix Course # Title (excluding punctuation)
POLS 607 Advanced Research Methods II

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<th>Lect.</th>
<th>Lab</th>
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<th>CIP and Fund Code</th>
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Approval recommended by:_________________________ Date: 9/25/05

Head of Department

Head of Department (if cross-listed course) Date: __________________________

Submitted to Coordinating Board by:_________________________ Date: _______ Effective Date: _______

Associate Director, Curricular Services

Questions regarding this form should be directed to Sandra Williams at 845-8201.
Curricular Services – 11/07

1 of 12 C12
Political Science 607
Hierarchical Linear Modeling
Spring 2009
Class in 2064 Allen 9:00-12:00 Monday

Instructor:
Dave Peterson
dave@polisci.tamu.edu
845-06783

Office Hours:
Monday, Wednesday 1-2
2037 Allen

The best way to get a hold of me is through email. Please keep in mind that I am unlikely to check my email much later than 8:00 PM on any given night. If you try to contact me after that time, assume that I will not read my mail until the next morning.

Description: Hierarchical, or multi-level, models are techniques designed to handle data that are collected at two or more levels. In this class of models, the dependent variable is measured at one level of analysis and at least some of the independent variables are measured at some higher level of aggregation. The classic example is school settings, where some student level measure is believed to be a function of some individual characteristics (e.g. race or gender), some class level (teacher), some school level (principal), some district level (superintendent) and some state level measures. This type of data produces several difficulties that make standard linear models (OLS or any other OLS derivative such as logit/probit) inappropriate. While lots of data in political science fit this description, there has been little use of the appropriate models to analyze them. Some of this is due to the lack of sound statistical theory, some due to the absence of software, and some due to the limitations of computation. In the past decade all of these problems have been more or less solved.

Books: I have ordered one book for the class:
I am also recommending the following book:

Computing: Computing is an essential part of modern statistical data analysis. In advanced methods classes such as this one, the standard point and click techniques available in most stats packages are not the best way to learn the material. If you really want to understand what is going on in the models you are running, you will need to specify the models carefully. The text you are assigned uses R and WinBUGS to handle the estimation of the models. I expect you to do the same. It is possible to do some of the things in this class via narrowly tailored stats packages like HLM (which will be made available to you) or though more general programs like Stata or even SPSS. These programs are less powerful and make too many decisions for you. I want you to learn the material and learn how to implement what you need to know. R is the best way to do that.

Prerequisites POLS 601 and POLS 602.

Assignments and Grades
Your grade in this class will be based on four things:
1. Homework (30 percent) There will be a series of homework assignments that combine technical problems in HLM and some questions that revolve around statistical theory.

2. Paper (35 percent) The paper will ask you to do some original research using HLM to answer a substantive problem. You need to get the topic approved by me and you should do this early in the semester.

3. Final (35 percent) I will be giving you an open note final modeled after questions I would ask for the methods prelim. Grades will be based on the standard scale:
   - 90-100 is an A
   - 80-89 is a B
   - 70-79 is a C
   - 60-69 is a D
   - less than 60 is an F

Schedule

Week 1 Introduction/logistics
  Reading GH Chapters 1, and 2

Week 2 Regression
  Reading GH Chapters 3, 4, and 7

Week 3 Regression
  Reading GH Chapters 5 and 6

Week 4 Multilevel structures and concerns
  Reading GH Chapter 11

Week 5 Random Intercept model
  Reading GH Chapter 12

Week 6 Random Slope Model and other complexities
  Reading GH Chapter 13

Week 7 HGLM
  Reading GH chapters 14 and 15

Week 8 Fitting the models
  Reading GH chapters 16 and 17

Week 9 Inference and computation
  Reading GH chapter 18

Week 10 Debugging and convergence
  Reading GH chapter 19

Week 11 Understanding and summarizing
Reading GH chapter 21

Week 12 Missing Data
Reading GH chapter 25

Week 13 Causal Inference
Reading GH chapter 23

Week 14 Model Checking
Reading GH chapter 24

Additional Reading In addition to the required readings, we will draw upon some of the following readings, or portions thereof, throughout the course:


- Gelman, Andrew, and Iain Pardoe. 2007. Average Predictive Comparisons for Models with Nonlinearity, Interactions, and Variance Components. Sociological Methodology (Forthcoming).


• Park, Jong Hee, and Nathan Jensen. 2007. Electoral Competition and Agricultural Support in OECD Countries. AJPS (Forthcoming, April).


• Wilson, Sven, and Daniel M. Butler. 2007. A Lot More to Do: The Sensitivity of Time-Series Cross-Section Analyses to Simple Alternative Specifications. Political Analysis (Forthcoming).


Legal stuff

I expect that all students will conduct themselves in a manner that is consistent with the Aggie Code. Any lying or cheating in this class will be handled in accordance with university policy.

ADA Statement As commonly defined, plagiarism consists of passing off as one's own the ideas, words, writings, etc., which belong to another. In accordance with the definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you should have the permission of the person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the
trust among colleagues without which research cannot be safely communicated. If you have any questions regarding plagiarism, please consult the latest issue of the Student Rules, under the section "Scholastic dishonesty."
-----Original Message-----
From: James R. Rogers
Sent: Wednesday, September 24, 2008 10:15 AM
To: Guy Whitten
Subject: FW: Request for letter of support for new course in Political Science

E-mail communicating approval from Ed Psych.

James R. Rogers, Ph.D., J.D.
Associate Professor & Interim Department Head Editor, Journal of Theoretical Politics
Department of Political Science Texas A&M University
4348 TAMU
College Station, TX 77843-4348
979 845 8833
Fax 979 847 8924

-----Original Message-----
From: James R. Rogers
Sent: Tuesday, February 26, 2008 9:59 AM
To: 'esd@psyc.tamu.edu'; 'Oliver, Larry'
Cc: 'Powell, Yvonne'
Subject: FW: Request for letter of support for new course in Political Science

Emily and Larry,

Below is the approval e-mail from Ed Psych for the proposed methods course. I haven't yet heard from Stats.

Best,

-- Jim

James R. Rogers, Ph.D., J.D.
Associate Professor
Director of Graduate Studies & Co-editor, Journal of Theoretical Politics Department of Political Science Texas A&M University
4348 TAMU
College Station, TX 77843-4348
979 845 2905
Fax 979 847 8924
From: Benz, Mike [mailto:mbenz@tamu.edu]
Sent: Friday, February 22, 2008 6:31 PM
To: Patricia Hurley
Cc: Ernest Goetz
Subject: RE: Request for letter of support for new course in Political Science

Dear Dr. Hurley:

I've consulted the Research, Measurement, and Statistics faculty in my department regarding your proposed course. We have no objections to the course that you have proposed.

Mike

From: Patricia Hurley [mailto:PAT_HURLEY@politics.tamu.edu]
Sent: Thursday, February 21, 2008 4:06 PM
To: Benz, Mike
Subject: Request for letter of support for new course in Political Science

Dear Professor Benz,

The method's faculty in the Department of Political Science have proposed a new methods course for our doctoral students. Our representative syllabus is for a course in hierarchical modeling. Some of our faculty thought it possible that your department might teach a course on related subject matter, so we need to receive your approval before sending the proposed course through university channels.

I've attached the proposed course with the syllabus. Please forward your input at your earliest convenience. (An e-mail is just fine.) Please feel free to contact me if you have any questions.
Thanks so much.

Patricia A. Hurley  
Professor and Head  
Department of Political Science  
Texas A&M University  
4348 TAMU  
College Station, TX 77843-4348  
Phone: 979-845-8833  Fax: 979-847-8924  
mailto:pat_hurley@polisci.tamu <mailto:pat_hurley@polisci.tamu.edu> .edu

http://www-polisci.tamu.edu <http://www-polisci.tamu.edu/>
Hurley, Patricia

From: Guy Whitten [WHITTEN@politics.tamu.edu]
Sent: Monday, September 29, 2008 9:39 AM
To: Hurley, Patricia
Subject: FW: new POLS course

-----Original Message-----
From: James R. Rogers
Sent: Wednesday, September 24, 2008 10:17 AM
To: Guy Whitten
Subject: FW: new POLS course

E-mail regarding approval from Econ for the methods course.

James R. Rogers, Ph.D., J.D.
Associate Professor & Interim Department Head Editor, Journal of Theoretical Politics
Department of Political Science Texas A&M University
4348 TAMU
College Station, TX 77843-4348
979 845 8833
Fax 979 847 8924

-----Original Message-----
From: James R. Rogers
Sent: Wednesday, February 27, 2008 2:15 PM
To: 'Powell, Yvonne'
Cc: 'Oliver, Larry'; 'esd@psyc.tamu.edu'
Subject: FW: new POLS course

Yvonne,

Also, approval from economics (below), for the Methods course.

Best,

-- Jim

James R. Rogers, Ph.D., J.D.
Associate Professor
Director of Graduate Studies & Co-editor, Journal of Theoretical Politics Department of
Political Science Texas A&M University
4348 TAMU
College Station, TX 77843-4348
979 845 2905
Fax 979 847 8924

-----Original Message-----
From: Patricia Hurley
Sent: Wednesday, February 27, 2008 1:35 PM
To: James R. Rogers  
Subject: FW: new POLS course

-----Original Message-----
From: Oliver, Larry [mailto:l-oliver@tamu.edu]
Sent: Tuesday, February 26, 2008 6:39 PM
To: Patricia Hurley
Subject: new POLS course

Pat,

The Economics department has no objection to the course in Advanced Research Methods for Political Scientists II that your department has proposed.

Larry Oliver
Interim Head, Department of Economics
Hurley, Patricia

Subject: FW: Request for support for a new course in Political Science

From: Jennifer South [mailto:jennifer@ad.stat.tamu.edu] On Behalf Of Simon Sheather
Sent: Wednesday, February 27, 2008 1:33 PM
To: Patricia Hurley
Subject: RE: Request for support for a new course in Political Science

Dr. Hurley,

In response to your e-mail below and the attached proposal, Dr. Simon Sheather, Head of the Department of Statistics and Mike Longnecker, Associate Head of the Department of Statistics support your request to teach Advanced Research Methods for Political Scientists II. Please let us know if you require additional information.

Thanks,
Jennifer South
Assistant to Simon J. Sheather
Department of Statistics
Texas A&M University
3143 TAMU
College Station, TX 77843-3143
(979) 845-3191
jennifer@stat.tamu.edu

From: Patricia Hurley [mailto:PAT_HURLEY@politics.tamu.edu]
Sent: Thursday, February 21, 2008 4:09 PM
To: Simon Sheather
Subject: Request for support for a new course in Political Science

Dear Professor Sheather,

The methods faculty in the Department of Political Science have proposed a new methods course for our doctoral students. Our representative syllabus is for a course in hierarchical modeling. Some of our faculty thought it possible that your department might teach a course on related subject matter, so we need to receive your approval before sending the proposed course through university channels.

I've attached the proposed course with the syllabus. Please forward your input at your earliest convenience. (An e-mail is just fine.) Please feel free to contact me if you have any questions.

Thanks so much.

Patricia A. Hurley
Professor and Head
Department of Political Science
Texas A&M University
4348 TAMU
College Station, TX 77843-4348
Phone: 979-845-8833 Fax: 979-847-8924
mailto:pat_hurley@polisci.tamu.edu
http://www.polisci.tamu.edu