Course Objective: This course is intended to instruct students on how to conduct state-level higher education policy research that addresses such questions as how college enrollment rates across states are influenced by the economic and political context of state higher education policy or how college completion rates across states are affected by state governance and the regulation of higher education. Based on their interests, students are instructed on how to design, build, and customize state-level panel datasets. Students will be introduced to, discuss, and may draw from such data sources as the Center for the Study of Education Policy (Grapevine), National Association of State Student Grant and Aid Programs (NASSGAP), National Center for Education Statistics (NCES), Education Commission on the States, U.S. Bureau of Economic Analysis, the U.S. Bureau of Census’ Current Population Survey of State Government Finances, the U.S. Bureau of Labor Statistics, the Washington Higher Education Coordinating Board, the Education Commission on the States, and other sources. The class will use a format that will alternate between seminars and "hands-on" workshops. The course syllabus will be primarily based on the specific interests of the students who enroll in the class. The course will also involve the use of computer and online labs. Students who also have an interest in state higher policy analysis and academic research using quantitative techniques will benefit from this course. Among the areas to be covered in this course are the following:

1. Identifying pertinent sources of state- or national-level secondary data with respect to state higher education policy research;

2. Designing and customizing state- or national-level panel datasets used to address specific research questions with respect to state higher education policy; and

3. Employing appropriate quantitative statistical techniques with panel datasets to address specific state higher education policy questions
Course prerequisite: None

Format. This course will be taught in a seminar and workshop format, which includes discussion and labs. Both discussion and labs are required, as this is a "hands-on" course. Discussions and labs are informal, meant to provide opportunities for questions and answers. Discussions will include the description of state and other higher education policy issues, research questions, available sources of data, and appropriate analyses as well as quantitative techniques. The labs will offer "how-to" experiences in gathering data, and building datasets, and using the statistical software. Although out-of-class work involves reading and working on the policy research paper, the majority of the time that students invest is spent in learning to extract secondary data, building a dataset, using the most pertinent variables, and applying the most appropriate techniques in analyses of research problems. Students taking the course for credit will receive a letter grade. Assignments for class members not receiving course credit will be evaluated on the same scale. Students should plan on spending time during the course period becoming oriented with the various sources of data, databases, learning and conducting analysis, and writing up the results of their findings. The final project will include both a paper and an oral presentation.

Requirements. Minimum requirements include attending all class discussions, completing all short quizzes and assigned readings. Because the course is designed around building pertinent datasets and the application of appropriate quantitative techniques to help inform state higher education policy, all students (including auditors) are expected to complete the assignments, in order to learn how to identify a pertinent data, select the most germane variables, and apply the most appropriate research techniques. If for some reason, students need to be absent from a class, they are still expected to complete the assignments.

The course assignments include, short quizzes, a written proposal for a state higher education policy research paper, and a short presentation to the class (12 minutes), and a written policy research paper of 15-18 pages (excluding tables, figures, and references). Students must work individually on all the assignments, including the policy research paper.

Data. Using secondary sources, students will be responsible for building their own datasets. Class members are welcome to use their own primary data, which they have previously collected, and supplemented from other secondary sources. If you plan to do this, you should discuss it with me to make sure the data are appropriate for use in this course.

Student Responsibilities. Because the pace of the course is fast, students are expected to complete an assignment that requires analysis, interpreting, and writing. It is expected that students will read the assigned material, contribute to the construction of a dataset, and complete any written assignments as well as a final project. Because of the fast pace of the course, requests for extensions on written assignments are discouraged. It is important that students practice the skills covered in lab and master them promptly. The topics and reading assignments listed for each session are approximate, based on the pace we think we will follow, and reflecting the order of topics covered in each session. Although the progression will be the same as listed in the syllabus, the session in which each topic is covered depends, to some extent, on how the course progresses. Reading and written assignment deadlines, however, will not change. Because the assignments are sequential and cumulative, keeping up with the readings and assignment deadlines are critical.
By the end of this course, the instructor expects that students will be able to demonstrate they can:
- identify germane secondary data sources to address state-level higher education policy questions;
- design and customize their own state-level panel dataset; and
- identify and use an appropriate quantitative technique with a pertinent customized state-level panel dataset to address a specific state higher education policy question.

**Instructor Responsibilities**
The instructor for this course has high expectations not only for students in the course but also for himself. Students should expect that the instructor in this course will:
- Be prepared for class, read and return students’ work in a timely manner, and be interested and engaged in students’ projects;
- Remember that each student brings a different experience, and perspective to this course;
- Meet with students individually or in groups upon request and be available in person, by telephone, and by e-mail; and
- Work hard, have fun, and empower students to have a better understanding of topics covered in the course.

**Required texts:**
None

**Other Required Readings:**
On Canvas
Online at the University of Maryland library – Students are responsible for accessing these readings.

**Required software:**
Stata 14.1 (minimum $75.00)

**Recommended text:**

Other Recommended texts: *Statistics – Beginning and intermediate level*
- Baum, C.F. (2006). *An Introduction to Modern Econometrics Using Stata*. College Station, TX: Stata Press. [Note: “Econometrics” is the economist’s term for “statistics”.
- Hamilton, L.C. (2004). *Statistics with Stata*. Belmont, CA: Brooks/Cole – Thomson Learning. [Although it is for an earlier release (Stata version 8), this book provides a good overview of procedures (from data management through time series analysis) and an introduction to programming in Stata.]


**Other Recommended texts: Statistics – Advanced level**

Arellano, M. (2003). *Panel Data Econometrics*. New York: Oxford University Press. [This is a very good but advanced text on using econometric techniques with panel data that are introduced in this course.]

Cameron, A. C. and Trivedi, P. K., (2009). *Microeconometrics Using Stata*. College Station, TX: Stata Press. [This is a comprehensive book on the use of Stata and econometrics.]


Hayashi, F. (2000). *Econometrics*. Princeton, NJ: Princeton University Press. [This is a comprehensive text, covering OLS regression through cointegration analysis, that is very mathematical.]


Woodbridge, J. M. (2002). *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: The MIT Press. [This is a comprehensive that is intended for use in a second-semester graduate level course on micro-econometrics.]

**Recommended Readings**

Students are responsible for accessing all recommended readings.

**Required Statistical Software**

In this course, I use Stata, an econometric software package. I recommend that you purchase the Stata/IC 14.1 student version of Stata (with at least a six-month license for $75). The less expensive versions (Small) of Stata have substantial limitations (e.g., maximum number of observations is 1,200; not designed for parallel processing, etc.). I do not recommend that you purchase the Small version of Stata. If your budget permits and you think you may want to use Stata after you complete the course, you may want to consider purchasing Stata/IC with a
In this class, students there will be some instruction in the use of Stata. In addition, here is a list of useful websites to help you to learn Stata:

http://www.statalist.org/
http://blog.stata.com/
http://www.stata.com/links/
http://www.statalist.org/forums/help
http://www.ats.ucla.edu/stat/stata/

Class Sessions, Schedule, and Assignments:

Session 1  January 25
Introduction and Overview

State Higher Education Policy Issues

Session 2  February 1
Background and context

Required readings:


Discussion of possible topics for the policy research proposal

State Higher Education Policy Research: Theoretical Perspectives and Conceptual Models

Required readings:


**Recommended Readings**


**State Higher Education Policy Questions and Hypotheses: Examples**

**Required readings:**


Lab: Introduction to Stata

**Session 3**

**February 8**

**State Level-Higher Education Policy-Relevant Indicators: Examples**

WICHE - [http://www.wiche.edu/factbook](http://www.wiche.edu/factbook)

An introduction to the use and sources of panel data

**Required readings:**


**Data Sources Used in State Higher Education Policy Research: Examples**
Li, A Y. (undated). Initial State Cuts to Higher Education Appropriations (1980-2013) https://aefpweb.org/sites/default/files/webform/aefp40/Li_state%20cuts.AEFP_.final_.pdf [see Table 1]


David A. Tandberg. (2013). The conditioning role of state higher education governance structures. The Journal of Higher Education, 84(4), 506-543. [see Appendix A] online at the library

Tandberg, D. (2010). Politics, interest groups and state funding of public higher education. Research in Higher Education. 51, 416-450. [read section on Variable Construction and Description & Appendix Table 2] online at the library

Discussion of possible topics for the policy research proposal


Discussion of possible topics for the policy research proposal

Lab: Introduction to Stata (continued) and panel data

Session 4 February 15
An Introduction to Methods Employed in State Higher Education Policy Research
Review of basic statistical concepts - measures of central tendency, sampling distribution, and analysis of variance (ANOVA)

Introduction to Ordinary Least Squares (OLS) Regression Models
Required readings:

Panel Datasets and Heterogeneity
Zhang, L., (2010).[read pp. 311-316], available online at the library

Recommended readings:
Discussion of possible topics for the policy research proposal

Lab: Using Stata to do OLS regression analysis

Session 5  
February 22
Review of Ordinary Least Squares (OLS) Regression Models
**Required reading:**

**Recommended readings:**

**Discussion of the policy research proposal**

Lab: Using Stata to do OLS regression analysis (continued)

Session 6  
February 29
**Quiz 1**

**Required readings:**


Recommended readings:


Discussion of the policy research proposal
Lab: Using Stata to create and analyze panel data

Session 7  March 7
Assignment Due: Topic for policy research proposal (one sentence)

Required readings:


Spring Break-March 14

Session 8  March 21
Assignment Due: Outline of Policy Research Paper Proposal
Panel Data Techniques: Post-Estimation and Other Tests Employed in State Higher Education Policy Research
Quiz 2

Required readings:

Post-Estimation and Other Tests Employed in State Higher Education Policy Research
Testing for cross-sectional dependence

Testing for serial correlation in linear panel-data models

Residual diagnostics for panel-data models

An Introduction to Methods Employed in State Higher Education Policy Research: Other Statistical Models – Two way error-component models

Required readings:
Hausman–Taylor estimator for error-components models: An Introduction

Dynamic fixed-effects panel modeling

Recommended readings:

Lab: Using to Stata to analyze panel data

**Session 9**

**March 28**

An Introduction to Methods Employed in State Higher Education Policy Research: Other Statistical Models (Continued)

**Quiz 3**

Fixed-effects models with spatial autocorrelation: An Introduction

Fixed- and random-effects models with an autoregressive (AR) disturbance: An Introduction

Prais-Winsten regression models with correlated panels and corrected standard errors (PCSEs): An Introduction

**Recommended reading:**

**Lab:** Work on your final project

**Session 10**

**April 4**

Assignment Due - Proposal for the Policy Research Paper

State Higher Education Policy Research: Describing the Methods

**Required readings:**

**Discussion of Student Projects**

**Lab:** Continue work on your final project.
Session 11  April 11  
State Higher Education Policy Research: Reporting Results  
**Required readings:**  

**Discussion of Student Projects**  
**Lab:** Work on your final project.

AERA  April 18 – no class

Session 12  April 25  
State Higher Education Policy Research: Discussing Implications; Presenting Tables and Figures  
**Required readings:**  

**Discussion of Student Projects**  
**Lab:** Continue work on your final project.

Session 13  May 2  
**Assignments Due:** Presentation of Policy Research  
Draft of Policy Research Paper

Session 14  May 9  
**Assignment Due:** Final Policy Research Paper

If you have not already done so, please complete the course evaluation.
Quizzes (3) – (5% each) = 15% of final grade
You are expected to complete three short (timed) quizzes. The quizzes will be used to access your understanding of the material the instructor presents in class. Each quiz will be submitted via Canvas.

Class participation = 15% of final grade
You are expected to attend and to be actively engaged in the class. You are also expected to participate in discussions in a manner that demonstrates an understanding of the subject matter. To do so, you must complete the readings that are assigned for each session of the class prior to attending that class session. Participation in class also includes contributing to the building of a customized database.

Proposal for the Policy Research Paper = 20% of final grade
Working individually, students are expected to produce a proposal for the state higher education policy research. The proposal should include the following: problem, context, background; purpose of the study; theoretical framework or conceptual model; research design (research questions; description of the data, list of variables, and description of the quantitative method); limitations and; possible implications for policy. The proposal for the policy research paper should include references and be no more than two pages or 1,000 words (excluding references) and submitted via Canvas. The format of the proposal should be double-spaced, using 12-point Times New Roman font.

Student Presentation = (10% of final grade) Working individually, students are expected to develop and present a 12 minute presentation of their final state higher education policy research paper. A copy of the presentation must be submitted, via Canvas, to the instructor.

Policy Research Paper = (40% of final grade) Working individually, you are expected to complete a state higher education policy research paper. The topic for the final paper must be submitted, via Canvas, to the instructor for approval. For the policy research paper, you will design and complete a quantitative analysis that addresses a state higher education policy-relevant question or set of questions. The results of the analysis are to be presented in an 18-20 page (not including references, figures, and tables) paper that can be submitted for presentation consideration at a professional conference. The policy research paper should reflect the format of a journal article and, therefore, include the following:
1. Abstract (no more than 50 words) – separate page
2. Brief description of the problem, context, and background
3. Purpose of the study
4. Theoretical framework or conceptual model
5. Research design
   a. research question(s)
   b. description of the data
   c. list of the variables and sources
   d. description of the quantitative method
6. Limitations of the study
7. Results
8. Conclusions
9. Implications for policy
10. Recommendations for future research
11. Appendix (if needed)
12. Figures
13. Tables

The policy research paper, the figures and tables should adhere to the most recent APA Publication Manual. I encourage you to work in teams to read and critique each other’s written assignments.
Thoughtful critiques from peers help to provide insight and information as we strive to improve as writers. A draft of the state higher education policy research paper is **due at** the presentation of the project. The draft of the policy paper is to be shared, via Canvas, with one other student in the class and the instructor for discussion and constructive written criticism.

Students should not take the time to conduct a comprehensive literature review. However, if students happen to have knowledge of relevant literature, they should feel free to cite it. The paper will account for 40% of your grade and the in-class presentation will account for 10%.

A copy of the paper is due at the last class session and must be submitted, via Canvas, to the instructor. The format of the paper should resemble articles from scholarly journals, be 18-20 pages (no less than 17 and no more than 25 pages) in length (excluding references), **double-spaced**, 12-point Times New Roman font, and use the most recent APA editorial style. The paper must include a cover page that has a substantive title, your name(s), course, and date. The paper will be evaluated on clarity, cohesion, coherence, and quality of research. Purely descriptive policy papers (e.g., types of state student financial aid) and the use of basic statistics (e.g., totals, percentages, measures of central tendency, or ANOVA) are **not** acceptable. The use of advanced quantitative techniques not covered in this class (spatial regression, multilevel modeling, structural equation modeling, vector-error correction modeling, etc.) is **highly discouraged**.

I will **not** accept the paper after the due date.

**Grading**

This course will follow a plus/minus grading scheme as follows:

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<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A+</td>
<td>100-97</td>
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<tr>
<td>A</td>
<td>96-93</td>
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<tr>
<td>A-</td>
<td>92-90</td>
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<tr>
<td>B+</td>
<td>89-87</td>
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<tr>
<td>B</td>
<td>86-83</td>
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<tr>
<td>B-</td>
<td>82-80</td>
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<tr>
<td>C+</td>
<td>79-77</td>
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<td>C</td>
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<td>C-</td>
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Incompletes will be granted only for exceptional circumstances.

In accord with University of Maryland policy, students will not be penalized because of their religious beliefs and observances. Whenever possible, students will be given reasonable time to make up any academic assignment that is missed due to participation in a religious or secular observance. Students should inform the instructor of any conflicts between the course schedule and religious or secular observances as soon as possible (preferably within two weeks of the start of the semester) so that appropriate arrangements may be made.
ACADEMIC INTEGRITY
All students are expected to abide by the code of academic integrity throughout this course and all other courses offered at the University of Maryland. Academic dishonesty, including cheating, fabrication, and plagiarism will not be tolerated and will be reported to the Dean of the Graduate School (or designee). For specific definitions or examples of academic dishonesty and nonacademic misconduct with possible sanctions, see the University of Maryland Honor and Honor Pledge on the web at: www.jpo.umd.edu/aca/honorpledge.html. Students who have questions about the code, or their obligations under the code, should contact the Honor Council at 301.314.8450.

ACCOMODATIONS FOR STUDENTS WITH DISABILITIES
A student with a documented disability or any other special need who wishes to discuss academic accommodations should contact the instructor as soon as possible. The instructor will then consult with Disability Support Services (http://counseling.umd.edu/DSS/, phone: 301.314.7682), who will make arrangements with the student to determine and implement appropriate academic accommodations.

COURSE EVALUATION
Students are strongly encouraged to complete the course evaluation at the following website: www.courseevalum.umd.edu. Participation in the evaluation of the courses is a responsibility you hold as a student member of the University academic community. Your evaluation is confidential and important to the improvement of teaching and learning at the University.