

**PADM601/PLAN604**

**APPLIED RESEARCH METHODS**

***General Information***

Class meets: Monday 5:30pm-6:45pm\*  
Room: USI (CO) 123  
Semester Hours/Credits: 3

\* The class is listed as an in-person class to be offered over 5:30pm-8:15pm on Mondays. However, the class will follow a hybrid model, with half in-person meetings over 5:30pm-6:45pm on Mondays and another half asynchronous virtual learning.

***Instructor Information***

Office: USI 211  
Office hours: Mondays, 4pm-5:15pm or by appointment  
Email: [sumeizhang@louisville.edu](mailto:sumeizhang@louisville.edu)

Please free to email me at any time. I will respond to email within 24 hours in most cases, 48 hours on weekends or holidays. If you do not receive a response within that time period, please reach out again.

***Teaching Assistant***

Moriah Smith [moriah.smith@louisville.edu](mailto:moriah.smith@louisville.edu)

***Course Overview:***

This course introduces economic and demographic data and the basic analytic methods (e.g. statistical, economic, and demographic methods) that are commonly used by professional planners and public administrators in their daily practice. The course will instruct students in the analytical tools, methods and techniques, their underlying assumptions, strengths and weaknesses, and appropriate use. We will explore popular demographic and economic data sources to understand the usefulness and limitations of different data and different methods. The overall goal is to foster an awareness of the use of data and analysis methodologies, with an emphasis on translating results into policy implications understandable by non-technical readers and meaningful for the public. This course is required for students in the MPA and the MUP program.

## *Course Objectives:*

### MPA Students

The Network of Schools of Public Policy, Affairs and Administration (NASPAA) is the national accrediting body for MAP programs. As an accredited program, we must demonstrate that our MPA graduates have five university competencies identified by NASPAA. They are:

- Lead and manage in public governance;
- Participate in and contribute to the public policy process;
- Analyze, synthesize, think creatively, solve problems and make decisions;
- Articulate and apply public service perspectives; and
- Communicate and interact productively with a diverse and changing workforce and citizenry

The courses that comprise your MPA program support these competencies. Some courses are more directly linked to the competency. This course supports multiple competencies, especially to analyze, synthesize, think creatively, solve programs, and make decisions and to contribute to the public policy process.

### MUP Students

The Planning Accreditation Board (PAB) is the national accrediting body for MUP programs. As an accredited program, we shall offer a curriculum that teaches students the essential knowledge, skills, and values central to the planning profession. The course is designed to meet the following PAB learning requirements:

- Knowledge 1.a. Purpose and meaning of planning: why planning is undertaken by communities, cities, regions, and nations, and the impact planning is expected to have.
- Knowledge 1.e. The future: relationships between past, present, and future in planning domains, as well as the potential for methods of design, analysis, and intervention to influence the future.
- Skills 2.a: Research: tools for assembling and analyzing ideas and information from prior practice and scholarship, and from primary and secondary sources.
- Skills 2.b: Written, Oral and Graphic Communication: ability to prepare clear, accurate and compelling text, graphics and maps for use in documents and presentations.
- Skills 2.c: Quantitative and Qualitative Methods: data collection, analysis and modeling tools for forecasting, policy analysis, and design of projects and plans.
- Values and Ethics 3.a: Professional Ethics and Responsibility: key issues of planning ethics and related questions of the ethics of public decision-making, research, and client representation (including the provisions of the AICP Code of Ethics and Professional Conduct, and APA's Ethical Principles in Planning).

- Values and Ethics 3.e: Growth and Development: economic, infrastructure, social, and cultural factors in urban and regional growth and change.

***Desired Learning Outcomes:***

After completing the course, students are expected to:

- (1) Know how to formulate a research question to better understand a social or policy issue;
- (2) Know major data sources, including data shortcomings and problems of comparability;
- (3) Understand basic statistical concepts;
- (4) Know popular demographic and economic analysis methods;
- (5) Be able to analyze population and economic characteristics and trends of regions (city, county, state, or the nation);
- (6) Be able to make population and employment projections;
- (7) Be able to select an appropriate method to evaluate a public program; and
- (8) Be able to appropriately deliver results to non-technical public.

***Course Texts:***

I recommend, but not require, the following books.

Wang, Xinhao and Rainer vom Hofe. (2007). *Research Methods in Urban and Regional Planning*. Springer Berlin Heidelberg New York and Tsinghua University Press, Beijing.

Klosterman, Richard E. (1990). *Community Analysis and Planning Techniques*. Roman and Littlefield Publishers. Savage: Maryland.

Meier, Kenneth J., Brudney, Jeffrey L., and Bohte, John. (2014). *Applied Statistics for Public and Nonprofit Administration*. Cengage Learning.

These books cover different subject of the course. You are not required to buy these books.

I will provide you online readings from the SoftChalk system. These readings are required.

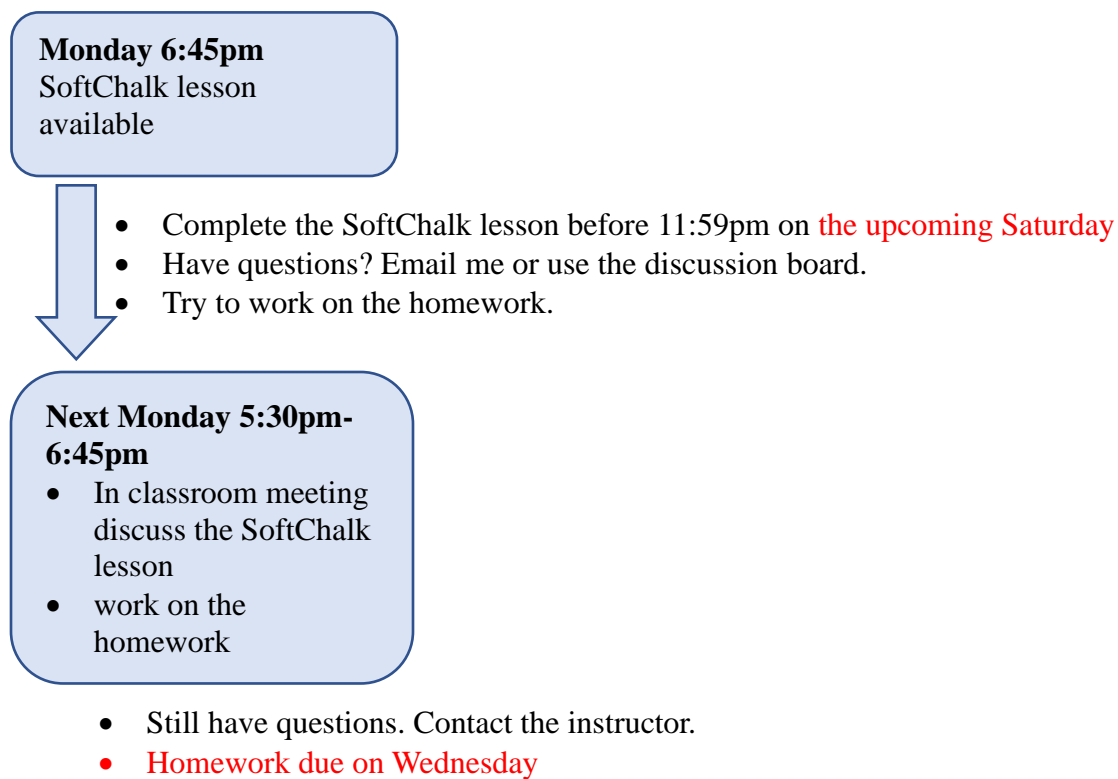
***Course Format:***

The course will follow a hybrid model, with traditional lectures on Mondays over 5:30-6:45 and virtual sessions at a time that work for students. Students will be required to do

periodic homework assignments that are aimed at providing practice at working with the tools and techniques presented in the distance learning materials.

A learning session, as showing in the following diagram, typically starts with an asynchronous SoftChalk lesson on a Monday. You can access the Softchalk learning material and complete it at a time that works for you. This SoftChalk learning assignment is due at 11:59pm on the upcoming Saturday.

I will review your SoftChalk learning activities during the weekend. During the in-person meeting on the following Monday, we review the SoftChalk learning, discuss case studies, and work on homework assignments.



### *Communications*

#### Announcements

I will regularly post announcements in the ANNOUNCEMENTS section. You can find this section on the left side of your dashboard after you login into the Blackboard and come to the course section. Please check this section regularly for any important information about upcoming projects or any concerns.

#### Email

In this course, I will email you either directly or through the blackboard system. If I send email through the blackboard system, the email topic starts with course number. Please do not ignore such emails.

### Discussion Board

I encourage you to raise any questions related to the course, for example clarification about project assignments, lecture materials, or assessments. To do so, please go to the discussion section, where you can find your access to the course discussion board. Discussion board is a tool for you to engage and interact with other students in the learning process. You are encouraged to post questions and/or give answers to help each other. In each lesson module, you will find a link to its corresponding Discussion Board.

### In-person Meeting

We meet in-person on Mondays. Please participate in in-class discussions and raise questions whenever you have them.

### Office Hours

I hold regular office hours on Mondays, between 4pm and 5:15pm. Please take advantage this. If this time does not work for you, please contact me and we schedule a meeting at another time.

### ***Required Tasks and Point Values:***

Grades will be calculated with the following weights:

SoftChalk Learning Assignments (13)	42 points
Homework Assignments (11)	33 points
Two exams (2)	19 points
Participation	6 points
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Total possible points	100 points

Grading will be on a straight point system (i.e., no curve):

A+ = 98-100%	A = 95-97%	A- = 90-94%	B+ = 86-89%
B = 81-85%	B- = 75-80%	C+ = 70-74%	C = 68-69%
C- = 66-67%	D+ = 64-65%	D = 62-63%	D- = 60-61%
F = below 60%			

### Software

You will use Excel for conducting analysis. Excel may be the most common data-processing software used by local governments. UofL students have free access to the Microsoft Office software. If you currently do not have a copy of Excel on your computer, please visit this website for the instructions to get a copy:

<http://louisville.edu/email/office-365-proplus-for-students>

### Softchalk Assignments

Softchalk assignments are distance learning materials. There are quiz questions embedded within your reading materials. A SoftChalk lesson will be available on a Monday and is due on the upcoming Saturday.

### Homework Assignments

11 homework assignments will be assigned on Mondays together with SoftChalk lessons. Most of these assignments are scenario-based and focus on Kentucky counties or 311 request activities in Kentucky. You need to identify clients, interpret the tasks, select methods, conduct your analyses, and report the results. A homework assignment is always due on a Wednesday.

### Exams

There are two exams. The coverages of these exams are not cumulative, and will be announced in class at least one week before the exams.

### Class Participation

Weekly class attendance and participation between 5:30pm and 6:45pm is required. Students are encouraged to discuss any circumstances that might affect the performance before they have the chance to affect the course grade, including physical or intellectual challenges, illness, or any events of which the instructor should be aware. Specific needs will be addressed on a case-by-case basis between the student and the instructor. Student rights, responsibilities, and code of conduct at UofL apply to this class.

### Title IX/Clary Act Statement

Sexual misconduct (including sexual harassment, sexual assault, and any other nonconsensual behavior of a sexual nature) and sex discrimination violate University policies. Students experiencing such behavior may obtain confidential support from the PEACC Program (852-2663), Counseling Center (852-6585), and Campus Health

Services (852-6479). To report sexual misconduct or sex discrimination, contact the Dean of Students (852-5787) or University of Louisville Police (852-6111). Disclosure to University faculty or instructors of sexual misconduct, domestic violence, dating violence, or sex discrimination occurring on campus, in a University-sponsored program, or involving a campus visitor or University student or employee (whether current or former) is not confidential under Title IX. Faculty and instructors must forward such reports, including names and circumstances, to the University's Title IX officer. For more information, see the Sexual Misconduct Resource Guide (<http://louisville.edu/hr/employeerelations/sexual-misconduct-brochure>).

The University of Louisville is committed to providing access to programs and services for qualified students with disabilities. If you are a student with a disability and require accommodation to participate and complete requirements for this class, notify me immediately and contact the Disability Resource Center (Stevenson Hall 119, 502-852-6938) for verification of eligibility and determination of specific accommodations.

### Content of Course (Tentative)

Abbreviations: SL – SoftChalk Lesson; **IL: In-person learning**

Week	Date	Activities	Methods	Data	Assignment	Due dates
1	Aug. 22	<b>IL1 – Introduce the course</b> SL1—Introduce data, data source, and data presentation	Data aggregation and disaggregation; Data presentation methods	Census geographical hierarchy	HW1: Pivot table analysis	SL1 due at 11:59pm on Aug. 27 (Saturday)
2	Aug. 29	<b>IL2 – □ Effective data presentation, and professional ethics;</b> <b>□ Work on HW1</b> SL2—Describing the community 1 (Statistics I)	Descriptive statistics  Frequency table	Decennial Census, American Community Survey	HW2: Descriptive analysis of 311 Calls	HW1 due at 11:59pm on August 31 (Wednesday) SL2 due at 11:59pm on September 3 (Saturday)
3	Sep. 5	Happy Labor Day!				
4	Sep. 12	<b>IL3 – □ Common community boundaries</b> <b>□ Work on HW2</b> SL3—Describing the community 2	Measures of growth, Population Pyramid	The Census Data Portal	HW3: Population pyramid analysis	HW2 due at 11:59pm on September 14 (Wednesday) SL3 due at 11:59pm on September 17 (Saturday)
5	Sep. 19	<b>IL4 – □ Select proper comparisons</b> <b>□ Work on HW3</b> SL4— Sampling of urban activities (Statistics II)	Popular sampling methods		HW4: Sampling	HW3 due at 11:59pm on September 21 (Wednesday) SL4 due at 11:59pm on September 24 (Saturday)
6	Sep. 26	<b>IL5 – □ Sampling Methods revisited</b> <b>□ Work on HW4</b> SL5—Research Design (Statistics III)	Experiment Design		HW5: Do low income neighborhoods make more 311 request?	HW4 due at 11:59pm on September 28 (Wednesday) SL5 due at 11:59pm on October 1 (Saturday)
7	Oct. 3	Midterm Break				



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Week	Date	Activities	Methods	Data	Assignment	Due dates
8	Oct. 10	IL6 – □ Experiment design in urban research □ Work on HW5 SL6—Demographic Analysis I	Trend analysis		HW6: Kentucky County Population Trend Analysis	HW5 due at 11:59pm on October 12 (Wednesday) SL6 due at 11:59pm on October 15 (Saturday)
9	Oct. 17	IL7 – □ Select the right trend □ Work on HW6 SL7— Demographic Analysis II	Cohort-component analysis; Error assessment		HW7: Jefferson County Population Project	HW6 due at 11:59pm on October 19 (Wednesday) SL7 due at 11:59pm on October 22 (Saturday)
10	Oct. 24	IL8 – □ CC analysis revisited □ Work on HW7 SL8—Economic Analysis I	Economic base analysis	County Business Pattern	HW8: Jefferson County Economic Analysis (you have two weeks to work on this)	HW7 due at 11:59pm on October 26 (Wednesday) SL7 due at 11:59pm on October 29 (Saturday)
11	Oct. 31	IL9 – Exam 1 SL9—Economic Analysis II	Shift-share analysis and Input-output analysis	IO National Tables		SL10 due at 11:59pm on November 5 (Saturday)
12	Nov. 7	IL10 – □ Economic analyses revisited □ Work on HW8 SL10— Probability Theory (Statistics IV)			HW9: Application of Probability Theory in Cities	HW8 due at 11:59pm on November 9 (Wednesday) SL10 due at 11:59pm on November 12 (Saturday)
13	Nov. 14	IL11 – □ Probability theory revisited □ Work on HW9 SL11— Hypothesis testing (Statistics V)	T-test		HW10: Do low income neighborhoods make more 311 request revisited?	HW9 due at 11:59pm on November 16 (Wednesday) SL10 due at 11:59pm on November 19 (Saturday)

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Week	Date	Activities	Methods	Data	Assignment	Due dates
14	Nov. 21	IL12 – <input type="checkbox"/> Hypothesis test revisited <input type="checkbox"/> Work on HW10 SL12— Regression analysis (Statistics VI)	T-test		HW11: Do low income neighborhoods make more 311 request? – A regression analysis	HW10 due at 11:59pm on November 23 (Wednesday) SL12 due at 11:59pm on November 26 (Saturday)
15	Nov. 28	IL13 – <input type="checkbox"/> Regression analysis revisited <input type="checkbox"/> Work on HW11 SL13—Qualitative analysis				SL13 due at 11:59pm on December 3 (Saturday)
16	Dec. 5	IL13 – Conclusion of the course Exam 2				