UAP 5224—Planning Methods and Technologies

Tom Sanchez, Professor (tom.sanchez@vt.edu)
Day/Time/Location: Tuesday, 7:00-9:45 pm, Computer Lab/Zoom
Office: Zoom, by appointment
Zoom for class or meetings: https://virginiatech.zoom.us/my/tomwsanchez

Course Description and Objectives

The purpose of this course is to develop skills in quantitative analysis and computer-based analysis techniques. Particular focus is on applied descriptive and inferential statistics, including cross-tabulations, correlation, and also on computer tools useful in urban planning analysis. The course consists of lectures/discussions, weekly readings/videos, exercises, and a class project. The course has three objectives: (1) to demonstrate the use of applied quantitative methods for planning and policy analysis, (2) to equip students with skills to analyze and interpret data, and (3) to familiarize students with quantitative methods incorporated into professional planning documents.

Requirements

- Regular attendance and participation in class.
- Completion of four problem sets. This is the primary way of better understanding the techniques. Students are encouraged to work in groups on the problem sets, but solutions are to be written and submitted independently.
- A closed-book midterm exam and a cumulative closed-book final exam.
- A brief, final presentation 3-5 minutes in length with accompanying memo.

Learning Objectives

By the end of the class, the student will:

- Distinguish qualitative and quantitative data, qualitative and quantitative analytical methods in urban planning and analysis
- Identify, retrieve and prepare data for urban and regional planning analysis
- Apply basic qualitative and quantitative techniques to analyze and present data pertaining to urban and regional planning
- Conduct and evaluate survey research
- Identify and distinguish urban and regional planning technologies, such as mapping, crowdsourcing and social networking
- Apply research ethics in data collection, analysis, and reporting

Grading

The final grade will be computed as follows:

Assignments (10 percent each)	40 percent
Midterm Exam	15 percent
Cumulative Final Exam	20 percent
Final Presentation/Memo	25 percent

It is important that exams be taken as scheduled. Please notify me if, for medical or other valid reasons, it is not possible for you to meet an examination or other deadline.

Required Reading
All course reading materials will be posted on Canvas at: https://canvas.vt.edu/courses/

Recommended Reading
Dandekar, H. C. (Ed.). (2019). *The Planner's Use of Information*. Routledge.

Ewing, R., & Park, K. (Eds.). (2020). *Basic Quantitative Research Methods for Urban Planners*. Routledge. (Available as eBook through VT Libraries)

TENTATIVE Schedule (*may change depending on class progress*)

Week	Class	Topic
1	17 Jan 2023	Course Introduction: Objectives, requirements, & student survey
2	24 Jan 2023	Planning Analyses, Data Types, Data Analyses
3*	31 Jan 2023	Descriptive Analysis (Part 1)
4	7 Feb 2023	Descriptive Analysis (Part 2)
5	14 Feb 2023	Correlation
6	21 Feb 2023	Trends and Projections
7	28 Feb 2023	Introduction to AI methods / Midterm
8	8 Mar 2023	Spring Break
9	14 Mar 2023	Data Sources and Manipulation
10	21 Mar 2023	Survey Research (Part 1)
11	28 Mar 2023	Survey Research (Part 2)
12	4 Apr 2023	Graphic Methods
13	11 Apr 2023	Programming in R (Part 1)
14	18 Apr 2023	Programming in R (Part 2)
15	25 Apr 2023	Tableau
16	2 May 2023	Final Presentations
	TBA	Final Exam (Cumulative)

* Denotes class will be on Zoom at: https://virginiatech.zoom.us/my/tomwsanchez

Graduate Honor Code
The tenets of the Virginia Tech Graduate Honor Code will be strictly enforced in this course, and all assignments shall be subject to the stipulations of the Graduate Honor Code as outlined in the Graduate Catalog. For more information on the Graduate Honor Code, please refer to the GHS Constitution, located online at CONSTITUTION OF THE GRADUATE HONOR SYSTEM. Please contact the instructor immediately if you have questions.

Special Accommodations
If you are a student with special needs or circumstances, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible.

Principles of Community
The Virginia Tech Principles of Community will guide all our interactions together this semester; above all, this class should represent an environment in which everyone is treated with respect and encouraged to learn and grow. To that end, the following principles define the basis of our work together:

- We affirm the inherent dignity and value of every person and strive to maintain a climate for work and learning based on mutual respect and understanding.
- We affirm the right of each person to express thoughts and opinions freely. We encourage open expression within a climate of civility, sensitivity, and mutual respect.
- We affirm the value of human diversity because it enriches our lives and the University. We acknowledge and respect our differences while affirming our common humanity.
- We reject all forms of prejudice and discrimination, including those based on age, color, disability, gender, national origin, political affiliation, race, religion, sexual orientation, and veteran status. We take individual and collective responsibility for helping to eliminate bias and discrimination and for increasing our own understanding of these issues through education, training and interaction with others.
- We pledge our collective commitment to these principles in the spirit of the Virginia Tech motto of Ut Prosim (That I May Serve).