URBAN AFFAIRS AND PLANNING PROGRAM
School of Public and International Affairs

UAP 5224 PLANNING METHODS AND TECHNOLOGIES

Fall, 2019
Architecture Annex Room 1
Tuesday 2:00 PM to 3:15 PM
Thursday 2:00 PM to 3:15 PM

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Office hours: by appointment

COURSE DESCRIPTION

The successful practice and research in urban and regional studies require integration of data, measurement and analytical skills in a coherent fashion in order to describe facts, and more often, derive inferences about the issues under study. Unfortunately, the pedagogical pathways for acquiring and mastering these elements are often diverse and divergent. Student may learn fairly simple data manipulation in some of their courses, however, it is uncommon to find courses that discuss data collection, dataset creation, cleaning, and data analysis, pertinent to the field of urban planning.

UAP5224: Planning Methods and Technologies is to introduce different quantitative and qualitative methods pertaining to the profession of urban and regional planning. The topics range from fairly fundamental approaches for describing data, probability distribution, and making inferences about the central tendency, to more complex multiple relationships. This course also explores a variety of data that one is likely to employ in urban and regional planning practices with an emphasis on data manipulation, merging, and restructuring. Students will learn how to work with census data and other public domain datasets. In addition, this course introduces emerging technologies for urban planning and analysis, as well as ethics in planning methods.

This course emphasizes computer implementations of the techniques introduced in the lecture. We will concentrate on using software – EXCEL, SPSS, GIS - to collect, prepare, summarize, and visualize data, and to derive meaningful inferences out of the initial datasets. This course places heavy emphasis on "learning by doing." Students are expected to get familiar with the software through in class exercises, homework assignments, and class projects.

In summary, the goal of UAP5224 is to equip students with data acquisition, data cleaning, and fundamental data analysis skills required for urban planning practices. It also lays a firm foundation upon which to build an understanding of more complex datasets and analysis strategies that are critical for the successful researcher in urban and regional planning.

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

RECOMMENDED BOOKS

Note: We DO NOT have required textbooks. Lecture notes and support reading materials will be made available to students. The following books are recommended to supplement the assigned readings.

Schutt, Russell K. (2014). *Investigating the Social World: The Process of Practice of Research* (8th ed.). New York: SAGE Publications. Pp. 688. (Older or newer editions work too!)

Agresti, Alan & Barbara Finlay (2007). Methods for the Social Sciences (4th ed.). Upper Saddle River, NJ: Pearson Prentice Hall. Pp. 609. (Older or newer editions work too!)

Law, Michael, and Collins, Amy**.** 2013 *Getting to Know ArcGIS Desktop (Updated for ArcGIS 10.1.)* ESRI Press, Redlands, CA. (ISBN-13: 978-1589483088)

Lo, C.P. and Yeung, A.K.W. 2006. *Concepts and Techniques of Geographic Information Systems* (2nd Edition), Prentice Hall, Upper Saddle River, NJ. (ISBN: 0-13-149502-X) (Older or newer editions or similar books work too)

SOFTWARE PACKAGE

All data analysis will be conducted using MS EXCEL, SPSS and ESRI ArcGIS software package. These are available in the classroom, as well as the campus computer laboratory. Students need day to day access to this software since it will be used throughout the whole semester, for exercises, homework assignments and examinations.

COURSE REQUIREMENTS AND GRADING

The course grade will be determined by as follows:

Class Participation/online discussion	25%
Individual Assignments	30%
Group Assignments	45%

Class Participation/Discussion. Discussion questions will be posted on Canvas. Students will post their responses. There are no right or wrong answers to these questions. They are to encourage students to explore more and in some cases, do some deep diving on the concepts and

issues introduced in the class.

Individual Assignments (2). There will be 2 individual assignments throughout the semester. They are used as a means to assess student's comprehension of the materials covered in this course. Students are expected to finish the assignment independently.

Group Assignments (2). There will be 2 group assignments throughout the semester. Students will work in a team environment on two semi-structured projects. These are used to develop students' ability to work effectively on a team including designing and framing a question, delegating tasks, coordination, and conflict resolution skills.

COURSE POLICIES

You are required to read the syllabus and understand all policies and dates of submission for all assignments. Late assignments will result in a deduction of 5 points each day past the due day. There will be no extra-credit assignments allowed for individuals who wish to improve their grades because such extra-credit requests are unfair to the other students who take responsibility for their education.

AMERICANS WITH DISABILITIES ACT (ADA)

The ADA is a federal anti-discrimination statute that provides comprehensive civil rights protections for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have any emergency medical information that the course instructor should know about, or you need special accommodation, please consult Virginia Tech Services for Students with Disabilities (SSD) at 231-0858 or email ssd@vt.edu.

Please also notify the instructor during the first week of class of any accommodations needed for the course. Late notification may cause the requested accommodations to be delayed.

ACADEMIC INTEGRITY

As students at Virginia Tech, you are expected to understand academic integrity, specified in the Virginia Tech Honor System. The Undergraduate Honor System (http://www.honorsystem.vt.edu/) and the Graduate Honor System (http://ghs.grads.vt.edu/index.html) provide official definitions of scholastic dishonesty and acts that are characterized as scholastically dishonest. These include acquiring information from an unauthorized source, providing information when not authorized to, plagiarism, conspiracy, and fabrication of information, violation of department or college rules and falsification of information.

We do not wish to discourage legitimate interchange and learning between students. You are encouraged to work in a collaborative manner on homework assignments and in class exercise. But you should work on the questions on your own initially. Then, you may consult

others for comments and suggestions. You must, however, submit your own work for grading. Plagiarism or other forms of violations of the Virginia Tech Honor System will not be tolerated.

CANVAS SITE

We use the Canvas Course Management System to manage the course materials (https://canvas.vt.edu/). Class lectures, assignments, special announcements, and reading materials will be posted on the Canvas site. You are expected to check in the class site regularly. You are responsible for any announcement or assignments posted on the site, regardless of whether the announcement or assignment was discussed in class, so check Canvas often!

Please Note: I reserve the right to alter the weekly course plan and the grading scheme should the need arise. I will however discuss these alterations with the class. You are welcome to meet me during the office hour and can contact me any time via email.

WEEKLY TOPICS

WEEK 1 (08/26 to 08/30)

Course Outline, Objectives, Requirements

Introduction to Data and Data Analysis

WEEK 2 (9/2 to 9/6)

Data Collection I: Sampling

Data Collection II: Sampling

WEEK 3 (9/9 to 9/13)

Data Collection II: Measurement

Survey Research

Handout Assignment 1

WEEK 4 (9/16 to 9/20)

Describing Data: Tools and Techniques I

Describing Data: Tools and Techniques II

WEEK 5 (9/23 to 9/27)

Working With Census Data (I)

Working With Census Data (II)

Assignment 1 Due in Class
Handout Assignment 2

WEEK 6 (9/30 to 10/4)

American Community Survey (ACS)

Exercise: Describing Local Areas Using Census Data

WEEK 7 (10/7 to 10/11)

Geographic Information Systems Intro

Working with census data in GIS (I)

WEEK 8 (10/14 to 10/18)

Working with census data in GIS (II)

"State of Region" Poster Session, How to make an effective poster or presentation?

Assignment 2 due in class

WEEK 9 (10/21 to 10/25)

Neighborhood Mapping – Collaborative GIS

Handout Assignment 3

WEEK 10 (10/28 to 11/1)

GIS Applications in Planning

GIS Applications in Planning

WEEK 11 (11/4 to 11/8)

Making inferences from data: Inferential Statistics (I)

-- Estimation based on data samples

WEEK 12 (11/11 to 11/15)

Making inferences from data: Inferential Statistics (II)

--Identify relationships between variables

WEEK 13 (11/18 to 11/22)

Making inferences from data: Inferential Statistics (III)

--Simple linear regression

Assignment 3 presentation

Handout Assignment 4

WEEKS 14 (11/25 to 11/29)

☺ Thanksgiving Break, No Class ☺

WEEK 15 (12/2 to 12/6)

Introduction to Graphic Design and Adobe Programs

Adobe InDesign Tutorials

WEEK 16 (12/9 to 12/11)

Class recap

Assignment 4 due