QUANTITATIVE POLITICAL ANALYSIS
POLI 3P91

Fall 2020

Department of Political Science
Brock University

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Asynchronous Lessons:
See Lessons in course Sakai site https://lms.brocku.ca

Synchronous Online Labs:
W: 1000-1115
Instruction will be in MS Teams at https://teams.microsoft.com
SPSS is available through Brock's virtual lab environment

Guest Presentation:
Wednesday, November 11 at 1000 with Sharon Janzen, Map Library Associate and Geospatial Data Coordinator

COURSE DESCRIPTION

This course provides students with an intermediate-advanced level of proficiency in the statistical analysis of survey data on political behavior, attitudes, opinions and beliefs, as well as an introduction to aggregate data analysis and mapping.

LEARNING OBJECTIVES/OUTCOMES

This course has two overarching objectives: to strengthen your numerical literacy, research and reporting skills, and your ability to critically evaluate whether quantitative analytical methods foster a better understanding of political and social phenomena. Students will learn various methods of descriptive and inferential statistical analysis. Using the SPSS software package, you will learn how to generate statistics from survey data, test hypotheses, and clearly communicate your findings. You will also be introduced to ArcGISonline and data mapping and analysis techniques that allow you to view trends and patterns across geographic areas.

REQUIRED COURSE TEXT, READINGS AND MATERIALS

Agresti, Alan. 2018. *Statistical Methods for the Social Sciences*, 5th edition. Boston, US: Pearson Education Inc. Digital text available for purchase through the Campus Book Store.

Additional required readings as indicated in the schedule with asterisks**. These readings are available in Course Readings on SAKAI: https://lms.brocku.ca/portal/site/e0bdda32-1b4b-4209-98a6-c835e769153d/page/12678e14-2555-4d31-9e1b-a350b0880173?sakai.state.reset=true

A simple, inexpensive calculator is necessary for this course. The calculator on your phone or laptop will be sufficient.

SAKAI

The syllabus, assignments, class resources, announcements and other information will be available on SAKAI at: https://lms.brocku.ca/portal/site/e0bdda32-1b4b-4209-98a6-c835e769153d/page/a31e6390-65de-4dcd-a874-00f9f4883b03

Date for Withdrawal Without Academic Penalty: November 2, 2020. Students will have received notification of 15% of their course grade one week prior to the date for withdrawal without academic penalty.

COURSE REQUIREMENTS

Lab Assignment 1	(September 21, 9am)	10%
Lab Assignment 2	(October 5, 9am)	10%
Lab Assignment 3	(October 26, 9am)	20%
Lab Assignment 4	(November 11, 9am)	20%
Lab Assignment 5	(November 23, 9am)	25%
Lab Assignment 6	(December 9, 9am)	15%

LESSONS

Pre-recorded lessons (lectures) which explain the concepts that will be applied during the synchronous online labs have been uploaded to Lessons on SAKAI. A list of the lessons is available on page 5 of this syllabus. Students are expected to listen to each week's pre-recorded lesson before every online instructor-led lab. Students who do not follow the lessons will find it very difficult to understand the content that is being delivered in the labs. Just as class attendance is expected when lectures are delivered in person, the same applies to preparing for success in an online course. Students who have questions about the lessons and readings should raise them with the instructor or TA, before or during the labs.

REQUIRED READINGS

In order to enhance your academic performance, it is essential that you complete each week's assigned readings prior to the weekly lab. The required digital textbook is available for purchase through the Campus Bookstore. Other required readings are available in Course Readings on SAKAI.

ACCESSING THE VIRTUAL LAB

Brock University's Virtual Lab environment consists of two platforms that provides users with access to various apps. The Windows Virtual Desktop (WVD) platform will provide students with access to the SPSS 26.0 software and datasets that you will use during the weekly instructor-led labs, and to complete your assignments during off-hours. As announced, in order to access the virtual lab, you will need to obtain MFA credentials. Instructions for obtaining MFA credentials are available in Resources on SAKAI (see document "Multi-Factor Authentication Set-up). If you need ITS support, you can submit a ticket or call the Help Desk. Contact information is available at: https://brocku.ca/information-technology/service-catalogue/lab-classroom-and-audio-visual-support/virtual-labs/windows-virtual-desktop/#1598477982840-2b4857c2-1568

You can access the Windows Virtual Desktop (WVD) platform at https://brocku.ca/wvd. Once you have logged in, you will see virtual machines that can be accessed through the VLZ309 Teaching Lab icon and/or the Commons icon. Virtual machines for the VLZ 309 Teaching Lab are **only** available to you starting 5 minutes before the instructor-led lab begins, until 5 minutes before it ends. You will not see virtual machines for this Teaching Lab listed outside of these times. Virtual machines in the Commons are available 24/7 on a first-come, first-served basis. Important information about the availability of virtual machines, signing in to the Virtual Lab environment, connecting to a virtual machine, logging off a virtual machine, signing out and saving your work is available at https://brocku.ca/information-technology/service-catalogue/lab-classroom-and-audio-visual-support/virtual-labs/windows-virtual-desktop/.

LAUNCHING SPSS AND WORKING WITH SPSS FILES

After you have logged into the Virtual Lab through the Teaching Lab or Commons icon, launch IBM SPSS 26.0 software from the Windows start button. A window with an empty spreadsheet will open. Select FILE, then OPEN, then DATA. Select Class Data (P:) from the Look In: dropdown list. Browse to the folder POLI3P91/Tossutti/Spring2020. Select the file the instructor has asked you to open and click Open. The file you have just opened from the P: drive is a read-only file, so you must save it to another location before you can use it. ITS recommends saving it to your OneDrive. Once files are saved in OneDrive, you can make and save changes to them. For instructions on working with SPSS files, see "Working with Class Files in SPSS" in Resources on SAKAI.

You are welcome to confirm your PC, Mac or newer Chromebook can access the lab software at any time.

JOINING THE INSTRUCTOR-LED, ONLINE SYNCHRONOUS LAB

After you have connected to the virtual lab and have launched SPSS, you can join the instructor-led synchronous lab through the MS TEAMS desktop or mobile apps or website. During the Wednesday labs, the instructor will deliver instructions on how to use SPSS to analyze survey-based statistics. Your TA will be

monitoring the session for student questions that may arise. Once the instructor has finished the talk, students will be asked to work on the exercises using the software and data available through the virtual lab. After a pause, we will then reconvene to discuss the results and address student questions.

Consistent lab attendance is critical to your success in this course as the computer skills that are required to complete the lab assignments will be taught during these sessions. This means that you are expected to log into the virtual lab and launch SPSS **before** the beginning of each lab at 10:00 am on Wednesdays. At 10:00am, the TA will record the names of all participants. Students who do not participate in two or more labs during the term without an acceptable explanation for their absence (i.e. medical reasons or personal emergencies) will not receive assistance from the instructor or TA.

GUEST PRESENTATION and ArcGISOnline

On Wednesday, November 11 at 10am, Sharon Janzen, Map Library Associate, Geospatial Data Coordinator, will lead a tutorial on the analysis of aggregate data using ArcGISonline software (AGOL). Every registered student will have access to AGOL via their Brock credentials. Sharon has prepared a helpful youtube video showing how you can sign in using your Brock credentials: https://youtube/GqH4UHTUf2s Please see the step-by-step instructions up to 1:20 of the video.

Attendance is critical, as the final lab assignment is partly based on the information presented in this tutorial Written instructions for using the software to produce the maps and data for the assignment will also be provided in Lessons on SAKAI.

LAB ASSIGNMENTS AND POLICY REGARDING ASSIGNMENT SUBMISSION

All lab assignments are based on the material presented in the lessons, readings, labs and special presentation. Lab time will be devoted to starting work on the lab assignments, but students should not expect to complete these assignments during lab time. You must plan on completing your assignments outside of the scheduled labs. Electronic copies of all assignments will be available in the Assignment folder on SAKAI.

All lab assignments must be submitted to Assignments on SAKAI by the due date. Assignments are considered received when an electronic copy has been uploaded to Assignments. Assignments will be assessed a penalty of five per cent for each day late. Lab assignments will not be accepted after Friday 4pm of the week the assignment is due. Extensions of due dates are granted only in circumstances that are beyond the student's control, such as health issues or personal emergencies.

LESSONS, READINGS, LABS AND ASSIGNMENT DUE DATES

LESSON DATES:	LESSON TOPICS	READINGS	LAB DATES AND EXERCISES	ASSIGNMENTS
Sept. 9, Lesson 1	Introduction to Quantitative Analysis	Chapters 1,2	Sept. 9: Introduction to SPSS, Surveys and Codebooks	#1 Due September 21 at 9 am
Sept. 16, Lesson 2	Measuring Variables and Descriptive Statistics	Chapter 3 (pp. 29-46)	Sept. 16: Measures of Central Tendency and Dispersion	
Sept. 23 Lesson 3	The Normal Probability Distribution	Chapter 4	Sept. 23: Z scores (calculators required)	#2 Due October 5 at 9am
Sept. 30, Lesson 4	Statistical Inference: Estimation	Chapter 5 (pp. 103-114)	Sept. 30: Confidence Intervals and Confidence Levels (calculators required)	
October 7, Lesson 5	Statistical Inference: Hypothesis Testing	-Chapter 6 (pp. 139-142, pp. 155-158) -Chapter 8 (pp. 215-225)	October 7: Chi Square Significance Test	#3 Due October 26 at 9am
October 21, Lesson 6	Hypothesis Testing	-Chapter 7 (pp. 179-193) -Chapter 12 (pp. 358-362)	October 21: T-test and ANOVA Significance Tests	
October 28, Lesson 7	Bivariate Analysis: categorical variables	-Keith Archer and Loleen Berdahl, Chapter 17 (pp. 290-312) in *Explorations: Conducting Empirical Research in Canadian Political Science***	October 28: Measures of association for categorical variables	#4 Due November 11 at 9am
Nov. 4, Lesson 8	Multivariate Analysis	Chapter 10	November 4: Testing causal hypotheses through statistical controls	
Nov. 11 Lesson 9	Aggregate Data Mapping Tutorial led by Sharon Janzen, Map Library Associate and Geospatial Data Coordinator	-Robin Jacob, "Using Aggregate Administrative Data in Social Policy Research"** -POLI 3P91 AGOL Tutorial (see Lessons Folder)	Aggregate Data Mapping and Analysis using ArcGISonline software	
Nov. 18, Lesson 10	Bivariate Analysis: interval variables	Chapter 3 (pp. 52-54)	November 8: Measures of association for interval variables	#5 Due November 23 at 9am
November 25 Lesson 11	Linear Regression	-Chapter 9 -Chapter 11 (pp. 307-325, 331-339)	November 25: Multiple Linear Regression with Quantitative Predictors	#6 Due December 9 at 9am
December 2 Lesson 12	Regression with Categorical Predictors	-Chapter 12 (pp. 351-355) -Chapter 13 (pp. 387-401)	December 2: Multiple Linear Regression with Categorical Predictors	

Academic Policies

Academic Integrity:

Academic misconduct is a serious offence. The principle of academic integrity, particularly of doing one's own work, documenting properly (including use of quotation marks, appropriate paraphrasing and referencing/citation), collaborating appropriately, and avoiding misrepresentation, is a core principle in university study. Students should consult Section VII, "Academic Misconduct", in the "Academic Regulations and University Polices" entry in the Undergraduate Calendar, available at http://brocku.ca/webcal to view a fuller description of prohibited actions, and the procedures and penalties.

Intellectual Property Notice:

All slides, presentations, handouts, tests, exams, and other course materials created by the instructor in this course are the intellectual property of the instructor. A student who publicly posts or sells an instructor's work, without the instructor's express consent, may be charged with misconduct under Brock's Academic Integrity Policy and/or Code of Conduct, and may also face adverse legal consequences for infringement of intellectual property rights.

Academic Accommodation:

As part of Brock University's commitment to a respectful work and learning environment, the University will make every reasonable effort to accommodate all members of the university community with disabilities. If you require academic accommodations related to a documented disability to participate in this course, you are encouraged to contact Services for Students with Disabilities in the Student Development Centre (4th floor Schmon Tower, 905-688-5550, ext. 3240). You are also encouraged to discuss any accommodations with the instructor well in advance of due dates and scheduled assessments.

Academic Accommodation due to Religious Obligations:

Brock University acknowledges the pluralistic nature of the undergraduate and graduate communities such that accommodations will be made for students who, by reason of religious obligation, must miss an examination, test, assignment deadline, laboratory or other compulsory academic event. Students requesting academic accommodation on the basis of religious obligation should make a formal, written request to their instructor(s) for alternative dates and/or means of satisfying requirements.

Medical Exemption Policy:

The University requires that a student be medically examined in Health Services, or by an off-campus physician prior to an absence due to medical reasons from an exam, lab, test, quiz, seminar, assignment, etc. The Medical Certificate can be found at: http://www.brocku.ca/health-services/policies/exemption