POLI 328: Statistical Analysis

Instructor: Mike Barber
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Office: 724 SWKT
Office Hours: T: 9-11am, 6-8pm; TH: 10am-noon, or by appointment

Lectures: T/TH, 1:35– 2:50pm B124 MARB, 3:00-4:15pm B124 MARB
Labs: Fridays, 9am, 10am, 11am (check which section you are enrolled in)

TAs:

To be determined…

328 TA Office Hours Location: 122 SWKT
328 TA Office Hours: See Learning Suite

Course Overview

In this course, you will learn the basics of using statistics to do data-driven research on political, economic, and social issues.

Statistical research in the social sciences requires several technical skills: an understanding of some basic probability and statistical theory, knowledge of how to apply that theory to different kinds of data and different kinds of issues, and basic computer skills necessary to obtain and analyze data.

Doing statistical research requires other skills as well: formulating a well-defined question, surveying previous research on the topic, generating original ideas and insights supported by evidence and careful arguments, and effectively communicating your analyses and results to others through written reports and creative data visualizations.

During the regular class meetings, we will cover some basic probability and statistical inference, and then use that foundation to understand the rationale for a variety of applied statistical methods. In the lab you will learn how to work with data sets and statistical software, and experience the process of doing empirical social science research.

Announcements

I regularly make announcements, clarifications, further instructions, etc., in class and by email and Learning Suite. You are responsible for all of these, even if you do not attend class. You are also responsible for keeping your email up to date at my.byu.edu. (You should let me know if your email changes during the semester.) I suggest that you exchange phone numbers and/or e-mail addresses with other students in the class.

Office Hours

I will hold office hours on Tuesdays (9am – 11am) and Thursdays (10am – noon). I am also available at other times if you make arrangements with me. I encourage you to come by to talk about assignments in the class, suggestions for improving the class, politics and current events, the perils of student life, or for any other reason.

The TA office is located in 122 SWKT. The names and contact information for each TA are listed above. Here are some guidelines for working with the TAs during office hours (many suggested by students in past course evaluations):

- Come to the TAs with specific questions, having already worked on the problems.

- Do not ask TAs to re-teach a missed lecture or lab. Instead, get a copy of the notes from another student, look at the slides, read the book, and then ask the TAs questions about things you do not understand.
- Do not monopolize a TA's time (> 10 minutes) during office hours if there are other students waiting.
- Do not ask TAs to explain the whole assignment.
- Do not ask, "Is this answer right?" Instead, ask how to solve problems.
- If you want to ask, "I don't know where to start this problem," do not ask that on the morning the assignment is due.

Learning Outcomes

This course explores the fundamental concepts of empirical analysis in political science, with a heavy emphasis on regression analysis. This course is designed to help you

- Analyze political and social behavior using statistical skills.
- Learn how to read and interpret statistical evidence.
- Produce your own rigorous statistical arguments that you explain carefully and clearly.

Each course at BYU has developed a set of expected student learning outcomes. These will help you understand the objectives of the curriculum in the program, including this class. In the parlance of the Political Science department's learning outcomes, this course helps you develop the skills of:

- Employ Rigorous Research Methods
- Write and Speak with Originality and Clarity
- Think Critically and Analytically about Politics

This course also fulfills the General Education Languages of Learning requirement. As noted in that requirement's Foundation Document, this course prepares students "to use numerical tools to explain the world in quantitative terms, interpret numerical data, and evaluate arguments that rely on quantitative information and approaches (Aims of a BYU Education)." Students should be able to use the fundamental principles of and fluency in quantitative language as used in modern practical problem-solving situations. As a General Education course, this class also fulfills University Core Learning Outcomes:

- Knowledge
- Communication
- Sound Thinking and Problem Solving
- Life-long Learning

Prerequisites

Political Science 200 is a prerequisite for this course. Political Science 200 teaches basic statistical concepts, as well as writing and research techniques. This course builds on those concepts and assumes you know those techniques; without the prerequisite, it will be difficult to succeed in this course. If you have not taken Political Science 200, take this course after you have. (You may **not** enroll concurrently in Political Science 200.)

Requirements

A Chinese proverb (supposedly) says, "I hear and I forget, I see and I remember, I do and I understand." This philosophy drives the requirements of the class.

Weekly Assignments	35%
Participation	5%
Pre-class quizzes	10%
Midterm Exam	15%
Final Exam	35%

All weekly assignments are due on Thursdays at 1:30 p.m. both on paper in the Political Science Assignment Drop Box (located outside the entrance to the department office at 745 SWKT) **and** electronically on the Learning Suite. If you have some sort of emergency, make sure you turn in your assignment electronically (email it to the instructor if you need to), after which you will turn in a hard copy as soon as possible.

I will not accept late assignments. Do not ask for exceptions. The primary reason for no late assignments is so that we can discuss the assignment in class immediately after it is turned in.

Since everyone has difficulties at one time or another, I will drop the one lowest assignment for the semester. I strongly suggest that you do not plan to drop an assignment. If you have a bad week, you would be better off turning in that assignment partially completed than dropping that assignment. You will need to know that material for the exams, so you will need to learn the material in the assignment later if you miss. Every semester, students who have already dropped an assignment early in the semester for convenience ask to drop another assignment later in the semester because of a real problem out of their control, such as illness, car accident, funeral, computer crash, fire alarm, etc. My answer is that I will drop the assignment for the real problem, but not drop the assignment dropped earlier for convenience.

Weekly Assignments

To understand statistics, you must **use** statistics. Each week you will be required to complete assignments that will include a variety of activities ranging from statistical theory problems to analyzing data and interpreting statistical results. Part of each assignment is explaining concepts and results to a lay audience. Generally, weekly assignments will be posted on Learning Suite after class on Tuesday. (We will record scores on assignments, pre-class quizzes, and exams in Learning Suite as well.)

You may work together on these assignments in groups of two or at most three, but you must write up your answers separately. The reason I limit group size is that students have a greater opportunity to learn and understand the material when they work in smaller groups. (Conversely, it is easier to mistakenly think you know the material when you work in larger groups.)

I give much more detailed instructions on how to report your work together in the Academic Honesty section below. Generally, if you use other persons' work, or make changes to your own work without inquiring or understanding what you did incorrectly, then you are trying to get a grade using someone else's knowledge. Giving or receiving answers in this manner is not permitted in this course. If you do not learn how to analyze or solve problems on your own, you will have difficulty on the exams. As a regular practice, on each problem, state with whom you worked. If you worked alone, state that you worked alone.

Each of the assignments will be divided into various parts. For the paper version, you will need to staple each part separately one from another. You will need to turn in your assignments with precise identification information. Most importantly, pay attention to the instructions at the beginning of each assignment. Your name, Poli 328, course section, lab instructor name, assignment #, and part # should clearly be indicated at the top of each document. For example:

Your name
Political Science 328
Dr. Barber

Your section (1, 2, 3, 4, 5, 6, 7, or 8)
Lab instructor: Smith, Jones, etc.
Assignment # Part #
Answers begin here...

Pre-class Quizzes

As much as possible, we will work on solving problems together in class. This requires students to read the material before class. To encourage students to read before class, there will be a quiz before each class on the reading material for the upcoming class period. The quiz will usually

consist of 5 multiple-choice questions on Learning Suite. This is an open book quiz, but you may not consult with anyone else on the quiz. You must finish the quiz by 1:30 p.m. on the day of class. I will drop the 3 lowest-scoring quizzes. You will have the opportunity to drop 2 more quizzes if you turn in the course evaluations (from BYU and from me) at the end of the semester.

Exams

There is a midterm and final exam. Both exams will be take-home exams that you will have a week to complete. They will require you to solve problems similar to the weekly assignments, using any personal notes and public resources. There is no class during the midterm or final exam. **While you may use notes, books, and any online resources for the exam, you are not allowed to consult with anyone on these exams.**

How to Succeed in this Course

The course is graded on a modified curve, using statistical principles that will be explained in more detail in the course. The basic idea is that I will look for natural breaks between students and assign grades accordingly. Thus, I do not assign a set number or percentage of As, Bs, and Cs.

Unlike many other classes at BYU, the points you receive do not correspond to percentage of the material learned, or to particular letter grades. In other words, a 75 (out of 100) does not mean that you understand 75% of the material, nor does it mean you have a C. It means you scored higher than anyone that received a 74 or lower, and scored lower than anyone that received a 76 or higher.

I will award the higher of two grades:

1. your overall point total
2. your point total doubling the weight of the final exam

To use #2, you must **complete** at least 11 of the 12 weekly assignments, at least 22 of the 25 pre-class quizzes, and the midterm exam. (Note: Turning in a sheet of paper with your name on it is not completing the assignment. Completing an assignment means working on each part of the assignment.) This allows students who take longer to get the material to still do well in the class. However, if you do not work on the weekly assignments, you will not do well on the final exam.

I include the following information from the BYU 2015-2016 Undergraduate Catalog, which guides how I grade and determine workload:

> "The grade given in a course is the teacher's evaluation of the student's performance, achievement, and understanding in that subject as covered in the class. The following adjectives indicate the meaning of the letter grades:

A	Excellent
B	Good
C	Satisfactory
D	Minimum passing
E	Unacceptable

> "Hence, the grade **A** means that the student's performance, achievement, and understanding were excellent in the portion of the subject covered in the class.
> "There are prerequisites that qualify students to be admitted to the more advanced classes offered by a department. A senior has added experience, understanding, and preparation and, consequently, progresses in courses that would have been impossible when the student was a freshman. The level of performance, achievement, and understanding required to qualify for each grade that carries credit (any grade other than E, UW, I, IE, or WE) is higher in a more advanced class than in those classes that precede it, and the student is prepared to work at this higher level" (cite).
> "The expectation for undergraduate courses is three hours of work per week per credit hour for the average student who is appropriately prepared; much more time may be required to achieve excellence" (cite).

Putting these statements together, the university expects an "average student" to work "much more" than 12 hours a week to receive an 'A' (= "excellence") in a 4 credit-hour course. This is my expectation as well.

As in many other subjects, learning statistics requires that you are exposed to it multiple times. Do not expect to understand everything in the book the first time you read it. Do not expect to master the material after coming to a single lecture. It takes reading, hearing, and applying the material to grasp the concepts.

Students who have succeeded in this course have the following characteristics. They

- Read the material before coming to class.
- Come to class with questions.
- Attend office hours and ask the TAs questions regularly
- Do not text/email/Twitter/Facebook/etc. in class.
- Study in groups to make sure they understand the material.
- Spread work on the weekly assignments across the week.
- Seek feedback from others.

Readings

All readings should be read before class for full understanding of the subject material.

The required texts for the course are:

- James H. Stock and Mark W. Watson. 2011. *Introduction to Econometrics*, 3rd ed. Boston: Addison-Wesley.
- Alan c. Acock. 2016. *A Gentle Introduction to Stata*, 5th ed.

We use Stock and Watson (SW) because it is the least technical textbook that covers the material of the class. The 3rd edition has some improvements over the 2nd edition, and rearranges some of the material. You could probably get away with using a 2nd edition if you did not mind consulting a classmate's textbook when necessary. (You can also use the updated 3rd edition, published July 2014.) Do not use the 1st edition. The book has a web site where you can download data sets and replication files here: Stock and Watson Student Resources.

In 328, we use the statistical program Stata extensively. The Acock book is your guide to Stata. The TA lab sessions will also explain how to implement different commands in Stata, but if you want an independent source of information on how to use Stata in context of 328, this is an excellent book.

There will be other readings from time to time available through Learning Suite.

Lectures and Labs

Identical classes will be presented at 1:35 p.m. and 3:00 p.m. on Tuesdays and Thursdays in B124 MARB. We will also have in-class learning exercises. I actively encourage questions and comments germane to our discussion. I urge--indeed, I expect--you to take advantage of the chance to talk with the Teaching Assistants and me during office hours. I do not care which lecture you attend. However, if there is not enough seating in a particular lecture, I will give preference to those who are registered for that lecture.

Regrettably, a handful of students occasionally demonstrate insensitivity to other students and to instructors by disrupting classes unnecessarily. Arriving late for class, reading newspapers in class, packing up bags prior to the end of class, and cell phone use are all disruptive activities. Browsing the internet, checking email, and playing games on laptops are also inappropriate in class because you should be listening and participating.

Certainly, taking notes on a laptop is appropriate, but do not waste your time or mine by getting distracted by other activities on the web. Moreover, I will not tolerate incivility of one opinion to another. It is exciting and healthy to exchange a diversity of opinions, but in no case should anyone demean another because of his or her viewpoint. In a statistics class, many concepts are difficult to grasp and student understanding is not uniform across the class. If students ask questions that you feel others should already know, this should never be cause for frustration or otherwise being impatient. You might find yourself on the other end with a different concept. If you have any questions about what classroom civility entails, please contact me.

On Friday mornings, there will be six computer labs in 102 SWKT (first lab on the left in the FHSS Computer Center),105 SWKT (second lab on the left in the FHSS Computer Center) and 112 SWKT (fishbowl at the back). There are labs at 9 a.m., 10 a.m., and 11 a.m., and are assigned according to registration. These labs are led by the Teaching Assistants. **You should attend your assigned lab each week.** Please arrive in the Computer Lab **before** class starts to sign in and have everything ready to go when class starts.

In the labs you will learn how to do basic and advanced statistics in Stata. Each week, the lab will cover the commands necessary to do the weekly assignments. The labs will also go over previous weekly assignments and sample exam problems.

You may find it useful to purchase your own copy of Stata. If you do not purchase your own copy, you need to plan ahead to use the computers in SWKT. Since some data sets we use have more than 1200 observations, you will need to purchase Stata/IC or Stata/SE. However, you can do all of the work necessary for this class in the SWKT labs.

Early in the semester, the FHSS Research Support Center will hold Stata workshops. Attending the workshops will give you a leg up as you begin your work with Stata this semester. However, these meetings are not required. The times and locations for the Stata workshops are:

Stata Intro
Topics: Importing data, variable naming/labeling/creating/recoding/formatting, combining data sets, reshaping, Stata help menu/shortcuts
Tuesday September 12, 3-4pm, SWKT 102
Monday September 18, 4-5pm, SWKT 112

Stata Intermediate
Topics: Descriptive stats, reliability, correlations, t-tests, ANOVA, linear regression, macros and loops, Stata help menu/shortcuts
Wednesday September 13, 3-4pm, SWKT 103
Thursday September 21, 4-5pm, SWKT 112

Each workshop is identical. The Research Support Center is another resource available throughout the semester for any questions relating to Stata or statistical analysis or research.

Academic Honesty and Plagiarism

From the Academic Honesty section of the BYU Honor Code: "The first injunction of the BYU Honor Code is the call to `be honest.' Students come to the university not only to improve their minds, gain knowledge, and develop skills that will assist them in their life's work, but also to build character. `President David O. McKay taught that character is the highest aim of education' (The Aims of a BYU Education, p. 6). It is the purpose of the BYU Academic Honesty Policy to assist in fulfilling that aim."

"BYU students should seek to be totally honest in their dealings with others. They should complete their own work and be evaluated based upon that work. They should avoid academic

dishonesty and misconduct in all its forms, including but not limited to plagiarism, fabrication or falsification, cheating, and other academic misconduct" (cite). Read the full version here.

A colleague (Mitch Sanders, former professor at Notre Dame) has already explicated these issues specifically for political science. Please read here.

In this class, you need to acknowledge the contributions of others toward your assignments. I have taken the following guidelines from MIT's Unified Engineering class. I have changed and added various words where appropriate:

"The fundamental principle of academic integrity is that you must fairly represent the source of the intellectual content of the work you submit for credit. In the context of [Poli 328], this means that if you consult other sources (such as fellow students, TA's, faculty, literature) in the process of completing homework [(or Stata codes)], you must acknowledge the sources in any way that reflects true ownership of the ideas and methods you used."

"Doing homework helps to engage with the concepts and material taught in class on a deeper level. To enhance the learning process we strongly suggest that you first try to solve the problems by yourself and then discuss challenges in groups or in office hours if necessary. Discussion among students and in office hours to digest the material and the homework problems or to prepare for [exams] is considered useful in the educational process. COLLABORATION ON HOMEWORK IS ALLOWED UNLESS OTHERWISE DIRECTED AS LONG AS ALL REFERENCES (BOTH LITERATURE AND PEOPLE) USED ARE NAMED CLEARLY AT THE END OF THE ASSIGNMENT. Word-by-word copies of someone else's solution or parts of a solution handed in for credit will be considered cheating unless there is a reference to the source for any part of the work which was copied verbatim. FAILURE TO CITE OTHER STUDENT'S CONTRIBUTION TO YOUR HOMEWORK SOLUTION WILL BE CONSIDERED CHEATING."

"Study Group Guidelines"

"Study groups are considered an educationally beneficial activity. However, at the end of each problem on which you collaborated with other students you must cite the students and the interaction. The purpose of this is to acknowledge their contribution to your work. Some examples follow:

1. You discuss concepts, approaches and methods that could be applied to a homework problem before either of you start your written solution. This process is encouraged. You are not required to make a written acknowledgment of this type of interaction.
2. After working on a problem independently, you compare answers with another student, which confirms your solution. You must acknowledge that the other student's solution was used to check your own. No credit will be lost due to this comparison if the acknowledgment is made.
3. After working on a problem independently, you compare answers with another student, which alerts you to an error in your own work. You must state at the end of the problem that you corrected your error on the basis of checking answers with the other student. No

credit will be lost due to this comparison if the acknowledgment is made, and no direct copying of the correct solution is involved.

4. You and another student work through a problem together, exchanging ideas as the solution progresses. Each of you must state at the end of the problem that you worked jointly. No credit will be lost due to this cooperation if the acknowledgment is made. [You must still write up your solutions individually, not jointly.]
5. You copy all or part of a solution from a reference such as a textbook. You must cite the reference. Partial credit will be given, since there is some educational value in reading and understanding the solution. However, this practice is strongly discouraged, and should be used only when you are unable to solve the problem without assistance.
6. You copy verbatim all or part of a solution from another student. This process is not considered academically dishonest if the acknowledgement is made. However, you will receive no credit for verbatim copying from another student as you have not made any intellectual contribution to the work you are both submitting for credit.
7. VERBATIM COPYING OF ANY MATERIAL WHICH YOU SUBMIT FOR CREDIT WITHOUT REFERENCE TO THE SOURCE IS CONSIDERED TO BE ACADEMICALLY DISHONEST."

Unfortunately, some students still profess ignorance of or attempt to find loopholes in the previous guidelines. As a result of sad experience, I repeat the following guidelines and add clarifications:

- You may work together on the weekly assignments in groups of two or at most three, but you must write up your answers separately. Starting with a group document and then giving copies of that document to members of the group is **not** writing up answers separately, even if individuals make various changes to the original document. **You must start with separate, individual answers.** If you find yourself emailing or copying files having to do with weekly assignments, you are violating this policy. If a group is working on a single computer to conduct analyses, which are then recorded and shared, then the group is violating this policy. If you work together on one computer, then you need to wait until you have separate computers to write up your answers. The first time I see group work turned in as individual work (even with "worked with" citations), I will take the number of points earned and divide it by the number of people in the group. The next time, the penalty will be -100% (note: not 0, but -100%).
- There is a "student solutions manuals" for Stock and Watson, 3rd ed. that has answers to odd-numbered exercises. You may use it provided you follow the citation guidelines discussed above (for which you only get partial credit). As with most textbooks, there is an "instructor solutions manual." (It has answers to all problems.) You may **not** use this. Like most things, you can find a copy of it on the internet, perhaps by sending money by PayPal to something equivalent to an essay mill, or downloading from some BitTorrent site, etc. If you find yourself searching for something like "Stock and Watson instructor solution manual," then you are well on your way to violating the Honor Code. If you have used this, I will refer you to the Honor Code Office.
- A good shorthand for violating the Honor Code is knowing something is wrong and doing it anyway. Anytime I find a student attempting to deceive me in any way, I will refer that student to the Honor Code Office.

- If you have any questions about these guidelines, please ask me. Do not attempt to exploit loopholes.

Discrimination

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. The act is intended to eliminate sex discrimination in education. Title IX covers discrimination in programs, admissions, activities, and student to student sexual harassment. BYU's policy against sexual harassment extends not only to employees of the university but to students as well. If you encounter unlawful sexual harassment or gender based discrimination, please talk to your professor; contact the Equal Employment Office at 422-5895 or 367-5689 (24 hours); or contact the Honor Code Office at 422-2847.

Brigham Young University is committed to providing a working and learning atmosphere which reasonably accommodates qualified persons with disabilities. If you have any disability which may impair your ability to complete this course successfully, please contact the University Accessibility Center (2170 WSC, 422-2767). Reasonable academic accommodations are reviewed for all students who have qualified documented disabilities. Services are coordinated with the student and instructor by the SSD office. If you need assistance or if you feel you have been unlawfully discriminated against on the basis of disability, you may seek resolution through established grievance policy and procedures. You should contact the Equal Employment Office at 422-5895, D-282 ASB.

References: Most of this syllabus came from a combination of Jay Goodliffe's 328 syllabus and Matthew Incantalupo's Econ 204 syllabus.

Class Schedule

Date	Lecture	Reading	Problem Set
5 Sep	1 – Intro	Why learn statistics? http://www.nytimes.com/2009/08/06/technology/06stats.html	
7 Sep	2 – Probability	Devore and Berk - 2.1 - 2.3	
8 Sep	Lab 1		
12 Sep	3 – Conditional Probability	Devore and Berk - 2.4 - 2.5	
14 Sep	4 – Bayes Theorem	Devore and Berk pg. 79-81, Cato Article	**PS0** – using Stata, reading the syllabus, policies
15 Sep	Lab 2		
19 Sep	5 – Centrality	SW pg. 14 - 21 Quartz Artcle: http://qz.com/260269 Gini Article: https://goo.gl/f3RQ5S	
21 Sep	6 – Variance	SW pg. 21 - 25 AF 3.3 - 3.6	**PS1** – Probability, Conditional Probability
22 Sep	Lab 3		
26 Sep	7 – Distributions	SW 2.4 Distributions Article: https://goo.gl/fe6iC9 AF 4.1 - 4.5	
28 Sep	8 – LLN CLT	SW 2.5 - 2.7 AF 4.5 - 4.7 Khan video 1: https://goo.gl/2CdUuH Khan video 2: https://goo.gl/e3XQDi	**PS2** – Means, Median, Mode, Variance, Standard Deviation
29 Sep	Lab 4		
3 Oct	9 – Interval Hypothesis Testing	SW 3.1-3.3	
5 Oct	10 – Randomized Experiments	SW 3.4 - 3.5, Cambridge Ch. 2,	**PS3** – Distributions, LLN, CLT
6 Oct	Lab 5		
10 Oct	11 – Bivariate Distribution	SW pg. 31-35 https://goo.gl/omoQE5 https://goo.gl/JxD4G2	
12 Oct	12- Simple Regression	SW 4.1 - 4.2	**PS4** - Hypothesis testing, Randomized Experiments

13 Oct	Lab 6		
17 Oct	13 – Simple Regression Fit	SW 4.3 Bailey dummy variables	
19 Oct	14 – Simple Regression Uncertainty	SW 4.4	**PS5** - Bivariate Distributions, Simple Regression
20 Oct	Lab 7		
24 Oct	15 – Simple Regression Assumptions	SW 4.5, 5.1 - 5.3	
26 Oct	16 – Multiple Regression, Midterm Exam Review Sessions	SW: 6.1 - 6.5	**PS6** - Simple Regression
27 Oct	Lab 8	Review for Midterm	**Midterm period opens at 5:00pm**
31 Oct	*Class Cancelled for Midterm*		
2 Nov	17 – Collinearity	SW 6.7	**Midterm period ends at 1:30pm**
3 Nov	Lab 9		
7 Nov	18 – Interaction Variables	SW: 8.3 - 8.5 Bailey interaction	
9 Nov	19 – Squared Terms	SW: 8.1, Bailey polynomial	**PS7** - Multiple Regression and Collinearity
10 Nov	Lab 10		
14 Nov	20 – Logged Variables	SW 8.2	
16 Nov	21 – Heteroskedasticity	SW 5.4	**PS8** - Interactions and Squared terms
17 Nov	Lab 11		
21 Nov	Friday Instruction		
23 Nov	*Thanksgiving Holiday – no class*		
24 Nov	*Thanksgiving Holiday – no lab*		
28 Nov	22 – Panel Data 1	SW 10.1 - 10.4 Bailey f.e.	
30 Nov	23 – Panel Data 2	SW 10.5 - 10.7	**PS9** - Logs and Heteroskedasticity
1 Dec	Lab 12		

5 Dec	24 – Logistic Regression	SW 11.1 - 11.2	
7 Dec	25 – Logistic Regression Final Exam Review Sessions	SW 11.3	**PS10** - Panel Data and Logistic Regression
8 Dec	Lab 13	Review for Final Exam	**Final Exam period opens at 5:00pm**
12 Dec	*Class cancelled for Final Exam*		
14 Dec	*Class cancelled for Final Exam*		**Final Exam due at 5:00pm**
15 Dec	Reading Day		