Class Syllabus for Polisci 209 -905 and 209-906

Instructor:

Professor Florian M. Hollenbach

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Office Hours: Monday, Wednesday, & Friday: 10:40am - 11:45am or by appointment

Teaching Assistant:

John Niehaus

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Office: 2044 Allen Building

Office Hours: Tuesday 11am - noon & Thursday 9:00am - 10am.

Class Meeting Time:

Monday, Wednesday, Friday: - Section 905: 8:35 am – 9:25 am - Section 906: 9:45 - 10:35am

Class Location: Bush Academic Building West 1015 (Unless otherwise noted or announced)

COURSE DESCRIPTION:

> "I keep saying that the sexy job in the next 10 years will be statisticians, And I'm not kidding."

Hal Varian, chief economist at Google

> "Without data you're just another person with an opinion."

W. Edwards Deming

Data and data analysis are becoming more and more important for us as citizens in the modern nation state, the modern work place, and as consumers of increasingly complex information. At the same time, the understanding of statistical fundamentals is as pertinent as ever to read any political science research. This class serves two main purposes. First, it will help you understand the basic statistics that are necessary to read modern political science research. Second, you will gain an understanding of basic methods of data analysis and the underlying concepts of probability. We will also cover some introductory programming, so that you will be able to write code for basic statistical functions and plots in R.

LEARNING OUTCOMES:

At the end of the semester, after completing this course, students are expected to:

- Understand the concept of causality and experimental designs
- Be able to do simple programming in R, such as:
- plot and interpret histograms, scatterplots, boxplots
- run simple statistical models

- simple mapping
- Explain and understand simple descriptive, univariate, and bivariate statistical concepts, such as: – mean – (co)variance, correlation – measurement – Central Limit Theorem – bivariate linear regression – multivariate linear regression
  - hypothesis tests

COURSE STRUCTURE & REQUIREMENTS:

The class will meet three times a week on Monday, Wednesday, and Friday. Classes will not simply be lecture based. We will cover programming, examples, or go over problem sets. This class will cover a variety of (complicated) concepts. Generally concepts will first be covered in the readings and we will go over specific applications and your questions on these concepts in class. It is therefore important that you do the required reading before each class period. For most weeks, the readings & topics covered can be quite technical and challenging, which means it is even more important that you try to understand the material before coming to class. If you do not understand part of the readings, it is important to **raise questions in class**. That is the whole purpose of class time. I guarantee you will not be the only one that has trouble with the material and by asking questions, you are providing a service to your classmates. There will be regular homework and practice assignments. The assignments are for you to deepen your understanding of the material and study for the exam. Some of the assignments will be quite hard. It is, however, important for your own progress that you at least attempt to solve each problem on your own first, before seeking help. If you are stuck, I encourage you to seek help from your classmates, the TA, or myself.

You are expected to do all readings prior to class, participate in class discussions, submit all assignments on time, and take exams as scheduled.

GRADING & RESPONSIBILITIES:

Your grade will be based on two exams (40 % combined) at the middle and end of the semester, class attendance, participation, and exercises (30% combined), and three written assignments (30% combined). All assignments are due before class on the day they are listed on the syllabus.

I expect you to do the assigned readings for each class before the lecture, participate in class discussions, and come prepared with questions. Specifically, you will be graded on:

- homework assignments/review exercises: 20% of class grade
  - homework assignments and review exercises will be graded on pass/fail, i.e. your grade will be the percentage of exercises you passed. You are allowed to miss two exercises unexcused, i.e. if there are 20 total assignments your grade will be the number of passed assignments divided by 18 (maximum 100%).
- class attendance/participation: 10% of class grade
  - Attendance will be marked at the beginning of each class. You are allowed to have two free absences. After two absences, I will deduct one point from the 10 possible attendance points for each absence. Excused absences do not deduct from your free absences. I will decide what counts as excused on a case-by-case basis, but in general absences will only be excused for good reasons. You must contact me **before** class. If you have more than 15 unexcused absences, you will receive an F in the course. Similarly, while unexpected events can cause tardiness, if you repeatedly arrive late to class, I reserve the right to mark late arrivals as absences. Should you arrive to class late, be sure to let me know after class so that I can mark you as present.
  - I expect all students to participate in class discussion, ask questions, listen to their fellow students, and be attentive. If you repeatedly fail to pay attention (e.g. fall asleep or play on your cell phone), I may deduct points from your participation/attendance grade.
- Three writing assignment: 30% of class grade (10% each)

  - The writing assignments in this class will be short memos (each 700 words) and are supposed to prepare you for real world work assignments. They will involve work with data in R. The writing assigments will be structured with the requirements of the modern work place in mind. For each of the three assignment you will provide a first draft to a fellow student, who will provide comments. You will incorporate the comments and will then be graded on the final version. Your comments to your fellow students will be graded pass/fail as a homework exercise. **The final version of the written assignments are to be submitted via Turnitin on eCampus prior to class on the day they are due.**
- Exam 1: 15% of class grade
  - The first exam will cover the first half of the semester and will be worth 15% of your class grade. The exams focus on all of the material covered up to the exam, includng the readings, lectures, and exercises. The assigned exercises should serve as excellent preparation for the exams
- Final Exam (cumulative): 25% of class grade
  - The final exam will cover the material from the whole class and will be worth 25% of your class grade.

The grading scale (in %) used in this class for all written assignments, exams, and the overall class grade will be the following:

- A= 89.5
- B= 79.5–<89.5
- C= 69.5–<79.5
- D= 59.5–<69.5
- F=<59.6

Given that this course is an official writing course, you **must pass the writing** part of the class to receive graduation credit. As noted on the website of the Texas A&M Writing Center: "If you complete a course with a passing grade but have not passed the W or C portion of the course, you will not get the graduation credit for that W or C course."

WRITING HELP:

The University Writing Center (UWC), located in 214 Evans Library and 205 West Campus Library, offers one-on-one consultations to writers. UWC consultations are highly recommended but are not required. Help is available with brainstorming, researching, drafting, documenting, revising, and more; no concern is too large or too small. UWC consultants will also help you improve your proofreading and editing skills. If you visit the UWC, take a copy of your writing assignment, a hard copy of your draft or any notes you may have, as well as any material you need help with. To find out more about UWC services or to schedule an appointment, call 458-1455, visit the web page at writingcenter.tamu.edu, or stop by in person.

ACADEMIC HONESTY:

All students should follow the highest standards of academic integrity. Cheating or plagiarism will not be tolerated in any way. If you are unsure what entails plagiarism, come talk to me. For more info, see: http://student-rules.tamu.edu/aggiecode & http://aggiehonor.tamu.edu. "An Aggie does not lie, cheat or steal, or tolerate those who do."

Regarding group work: Unless explicitly otherwise specified, your homework and assignments are not to be done in groups and should be done alone. If you get stuck on a problem, you can discuss it in general terms with your fellow students, however, all solutions ought to be based your own work. Before asking for help from your fellow students, the TA, or myself, make sure you at least attempt to solve the problem yourself, otherwise you are only hindering your own learning.

READINGS & SOFTWARE:

We will primarily use one book, which is available in the Texas A&M bookstore. Unfortunately the book is quite pricey, but you should be able to find cheaper versions (used) online. I would strongly encourage you to acquire the hard copy of the **fourth edition**. All references will be made with respect to the **fourth edition** of the book. If you do decide to get a different version, it will be your responsibility to make sure you are reading the correct parts and doing the correct exercises.

Required book: Freedman, David, Robert Pisani, and Roger Purves. 2007. Statistics. 4th Edition. W. W. Norton and Company. New York. ISBN: 0393929728.

You should have the book within the first week of class.

For part of this class we will be working on the computer with statistical software. We will use the statistical programming language **R**. R is available for download here:. I would recommend you download R-Studio, which is a software (a set of integrated tools) that makes the use of R much easier. You can download R-Studio here:. Both R and R-Studio are free. I would encourage you to install R-studio and play around with it for a bit.

You will also need a pocket calculator. You can buy a cheap one for at Walmart for about $3. Graphing calculators will not be allowed on the exams, so if you have any questions, please ask. Here is an example from Amazon for a calculator you could use. You should have your calculator by the Friday September 1st.

CLASSROOM BEHAVIOR, PARTICIPATION, & ELECTRONIC DEVICES:

We will usually meet three times a week during the semester. You can expect me to be prepared, give lecture, and answer questions. As outlined above, when you come to class, I expect you to be prepared as well and have the reading done before class. Remeber, class is a resource to you. The exams will be based on all lectures, readings, homework, and the discussions in class. Thus, only doing the required readings or only attending class will not be sufficient.

I have decided that for the first time, laptops will not be allowed in class unless specifically announced. Laptops have been shown to be a distraction not only to the students using them but also fellow class mates. A recent study has found that not having laptops in class can have a similar effect as hiring a SAT tutor

I may make exceptions to this rule, but only if you have good reasons for why you need to use a computer. If you believe you warrant an exception, please contact me within the first week of class.

In addition, please make sure your cell phones are on silent mode and refrain from using them during class time. If you are repeatedly on your phone, I may deduct points from your participation/attendance grade.

EXAM ABSENCES & LATE POLICY:

Make-up exams will be permitted only in the case of university-excused absences. To be eligible for a make-up exam, you will have to present original written documentation of legitimate circumstances that prevented you from taking the exam on time. Except in the case of observance of a religious holiday, to be excused, the student must notify his or her instructor in writing (acknowledged e-mail message is acceptable) prior to the date of absence. In cases where advance notification is not feasible (e.g. accident or emergency) the student must provide notification by the end of the second working day after the absence. This notification should include an explanation of why notice could not be sent prior to the class. Accommodations sought for absences due to the observance of a religious holiday can be sought either prior or after the absence, but not later than two working days after the absence. Legitimate circumstances include religious holidays, illness (verified by a doctor), serious family emergencies and participation in group activities sponsored by the University, etc. See http://student-rules.tamu.edu/rule07 for additional information. Please note that I do not accept Xeroxed copies of medical excuses from students.

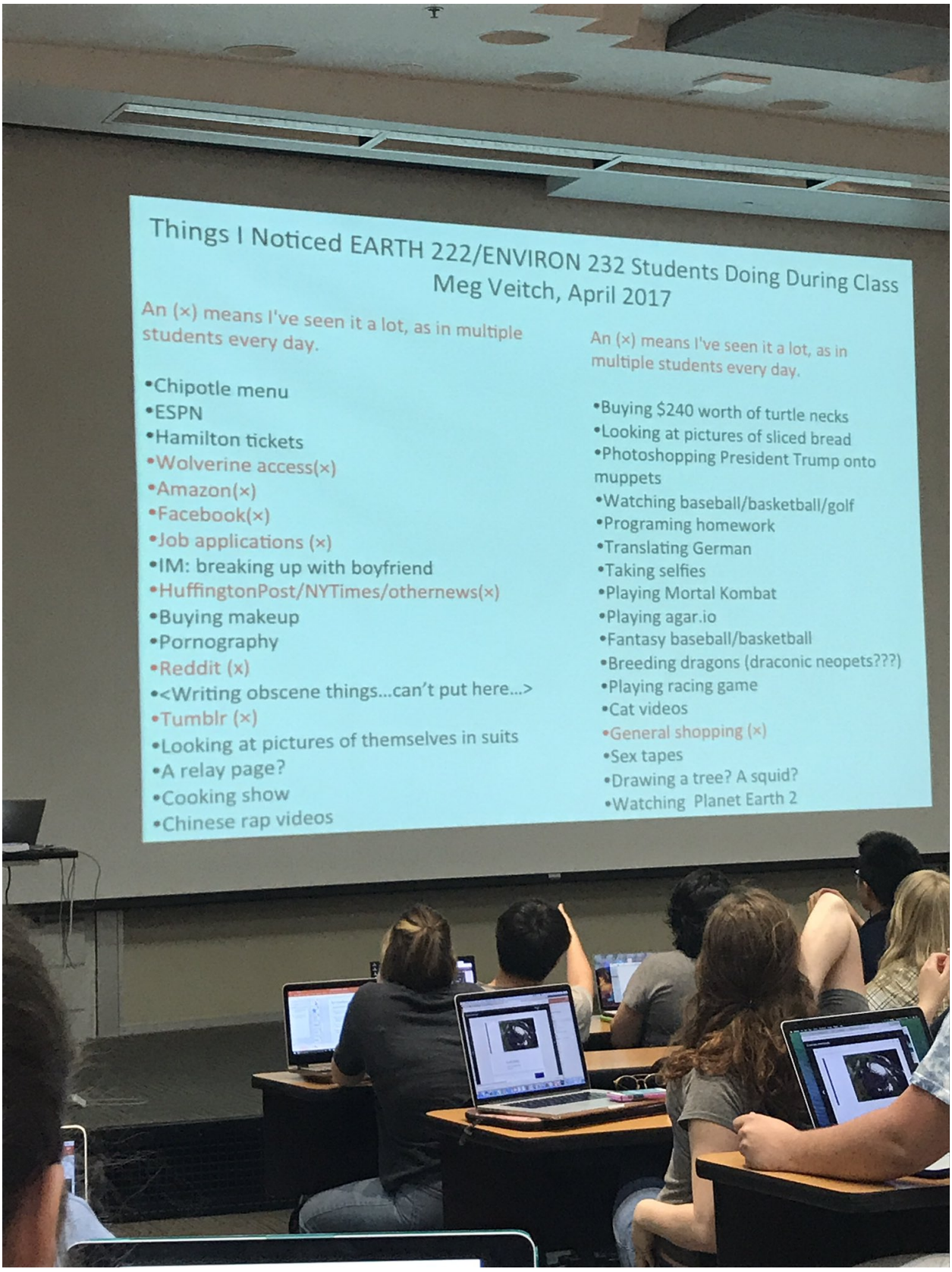

Figure 1: Laptops as distraction

Unexcused absences from either exam will result in a score of 0 for the exam. Unexcused late work will be penalized by a 7.5 percentage point deduction for each day your work is late. For example, if you hand in the a writing assignment on the same day it is due, but after class, your maximum score will be 92.5%. If you hand in your assignment the next day, your maximum score will be 85%, and so on. Late work will be excused only in the case of university-excused absences. **There will be no exceptions to these rules.**

RE-GRADING POLICY:

Students that want to appeal a grade received on an exam or assignment must submit a regrading request in written form (no email). This request has to be turned in within five working days after the graded exams or assignments are returned to the class. The written statement must explain exactly why the student believes the current grade is incorrect. I will then regrade the entire assignment or exam extra carefully. NOTE, as a consequence your grade may go up or down.

COMMUNICATION:

The best place to ask questions is in the classroom. If your question is not related to class material or relevant to other students, we can discuss it after class. I encourage you to visit my office hours to discuss any difficulties with the readings or homeworks. Again, however, you should at least attempt to solve the problem on your own first.

You can expect me to reply to emails within 24 hours during the work week. I will not reply to emails on the weekend, except for urgent matters. As with all business related correspondence, please include an appropriate salutation, identify yourself, and write in complete sentences.

DISABILITY:

All discussions will remain confidential. University policy is in accordance with the Americans with Disabilities Act Policy Statement. The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection 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 believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit http://disability.tamu.edu.

Reasonable accommodations will be made for all students with disabilities, but it is the student's responsibility to inform the instructor early in the term. Do not wait until just before an exam to decide you want to inform the instructor of a learning disability; any accommodations for disabilities must be arranged well in advance.

DIVERSITY POLICY:

The Department of Political Science supports the Texas A&M University commitment to diversity, and welcomes individuals from any racial, ethnic, religious, age, gender, sexual orientation, class, disability, and nationality. (See http://diversity.tamu.edu/. In the spirit of this vital commitment, in this course each voice in the classroom has something of value to contribute to all discussions.

Everyone is expected to respect the different experiences, beliefs and values expressed by fellow students and the instructor, and will engage in reasoned discussion that refrains from derogatory comments about other people, cultures, groups, or viewpoints.

Changes to Syllabus

I reserve the right to update/modify/clarify the syllabus with advance notification.

Class Schedule

Week 1

Monday, August 28th: What are we doing in this class?

- Read Syllabus
- Think of introduction of yourself
- Buy book
- Buy calculator

Wednesday, August 30st: Questions

- Review notes on Questions

Friday, September 1st: Models

- Review notes on Models

Week 2

Monday, September 4ht: Getting started in R

- Review notes on starting in R
- Complete Assignment 1

Wednesday, September 6th: Causal Inference

- Read chp. 1-2 of FPP

Friday, September 8th: Loading data into R & Histograms

- Review notes on loading data in R
- Read ch. 3 of FPP
- Complete Assignment 2

Week 3

Monday, September 11th: Histograms in R + Average and SD

- Read notes on Histogram
- Read ch. 4 of FPP.
- Complete Assignment 3

Wednesday, September 13th: Boxplots and Densities in R

- Read notes on Boxplots

Friday, September 15th: Starting Writing Assignment 1

- **Meeting in Lab today**
- Bring laptop if you have one
- Complete Assignment 4

Week 4

Monday, September 18th: Average and SD in R + Normal Approximation

- Review Notes on Average and SD in R
- Read ch. 5 of FPP

Wednesday, September 20th: FASB Panel

- **Email Writing Assignmment 1 to peer review partner**

Friday, September 22th: Measurement + Measurement Exercise

- Read ch. 6 of FPP.
- **Send Writing Assignment 1 Comments to peer review partner**
- Complete Assignment 5

Week 5

Monday, September 25th: Scatterplots and Correlation

- Read chs. 7-8 of FPP
- Complete Assignment 6

Wednesday, September 27th: Scatterplots and Correlation in R

- Review Notes on Scatterplots and Correlation in R
- Play this game (web) and track your performance.
- Read ch. 9.5

Friday, September 29th: Regression

- Read chs. 10-11 of FPP
- **Writing Assignment due today**

Week 6

Monday, October 2th: Regression

- Read ch. 12 of FPP
- Complete Assignment 7

Wednesday, October 4th: Regression in R

Friday, October 6th: Review for Exam

Week 7

Monday, October 9th: Exam 1

Wednesday, October 11th: Multiple Regression

- Complete Assignment 8

Friday, October 13th: Multiple Regression (in R)

Week 8

Monday, October 16th: Getting Started on Writing Assignment 2

- **Meet in lab**
- Bring laptop
- Complete Assignment 9

Wednesday, October 18th: Probability, Part 1

- Read ch. 13 of FPP

Friday, October 20th:

Probability, Part 2 - Read ch. 14 of FPP - **Send writing assigment 2 to peer review partner**

Week 9

Monday, October 23rd:

Law of Averages - Read ch. 16 of FPP. - **Send Writing Assignment 2 Comments to peer review partner**

Wednesday, October 25th: Expected Value and Standard Error

- Read ch. 17 of FPP.
- **Writing Assignment 2 due today**
- Complete Assignment 11

Friday, October 27th: Normal Approximation for Probability Histograms

- Read ch. 18 of FPP

Week 10

Monday, October 30: Sample Surveys I

- Read ch. 19 of FPP.
- Complete Assignment 12

Wednesday, November 1st: Sample Surveys II

- Read ch. 20 of FPP.
- Complete Assignment 13

Friday, November 3rd: The Accuracy of Percentages

- Read ch. 21 of FPP

Week 11

Monday, November 6th: Surveys in the Real World

- Read ch. 22 of FPP
- Complete Assignment 14

Wednesday, November 8th: The Accuracy of Averages

- Read ch. 23 of FPP
- Complete Assignment 15

Friday, November 10th: Working on Writing Assingment 3

- **Meet in lab**
- Bring laptop
- Complete Assignment 16

Week 12

Monday, November 13th: Null hypothesis and Significance test

- Read ch. 26 of FFP

Wednesday, November 15th: More Tests for Averages

- Read ch. 27 of FPP
- **Send writing assigment 2 to peer review partner**

Friday, November 17th: Class Canceled, Prof at conference

Week 13

Monday, November 20th: Chi-squared tests

- Read ch. 28 of FPP
- **Send Writing Assignment 2 Comments to peer review partner**
- Complete Assignment 17

Wednesday, November 22nd

Turkey Break!

Week 14

Monday, November 27th: A closer look at significance

- Read ch. 29 of FFP
- **Writing Assignment 3 due**

Wednesday, November 29nd: Getting Twitter data in R

- Read notes on Twitter in R

Friday, December 1st: Reviewing Regression

- Read notes on Reviewing Regression
- Complete Assignment 18

Week 15

Monday, December 4th: Maps in R

- Review notes on Maps in R

Wednesday, December 6th

- Review for exam