**Department of Government**

**Dartmouth College**

**Government 10**

**Quantitative Political Analysis**

**Spring 2015**

***Professor:*** Amy Semet

**Class Times:** MWF, 10am-11:05am; x hour, Thursday, 12pm-12:50pm, 1 Rockefeller

***Office Hours*:** I would like to get to know you all, and hope you will come see me during office hours or by appointment. My official office hours will be Tuesday 3-5. I am also available anytime most class days so please email me to set up a time. My office is 304 Silsby.

***Phone:* 215-767-0041 (cell)**

***Email:*** Amy.Semet@dartmouth.edu; semet@post.harvard.edu

***Course Objective***: In this course, students will learn the skills required in order to critically analyze data in the social sciences.  Students will acquire a basic understanding of research design, data analysis and data presentation.  By the end of this course, students will be able to: 1) interpret statistical evidence; 2) analyze a political science problem using statistics; and 3) present research results in a clear and precise manner.  Topics to be covered include: research and survey design; descriptive statistics; confidence intervals and hypothesis testing; regression analysis and diagnostics; and ANOVA (analysis of variance).

***Prerequisites***: The course requires no prior experience with statistics, mathematics or computing.

***X hours*:** The x hour is on Thursday, 12-12:50. We will use a few of the x hours early in the semester to build up time when students are less busy.

***Course Organization/Grading***: Students will be evaluated according to the following:

**Homework/Problem Sets** (20%): In order to properly master the material for this course, it is vitally important that students work interactively to apply what they learn in lecture to real-world issues and problems.  As such, students will learn how to use the statistical program STATA to conduct data analysis.  I will hold training sessions on how to use STATA.  You will not be able to learn the material if you do not actively do the homework and read the textbook. Please refer to the Stata Help link on Canvas for directions on how to download and use Stata.

There will be two types of problem sets: in class and out of class problem sets.

In class problem sets: We will do short in class problem sets each week six times throughout the term. I would like to encourage students to at least try the problems in advance at home before class so as to maximize class time. As such, students who turn in a good faith effort at the problems before class on the day they are due will receive at least a 10% bump of their homework grade for that week. You will not be graded on whether you got the problem right or not; you will get the points if you show that you made a good faith attempt at solving the problem; if you are not sure how to solve it you can do as much as possible and then you can write down the questions you have and we can address the issue in class. You may work in groups of 4-5 students and each student must submit their own homework to get the credit. Turning in the in class problems in advance is optional but is strongly recommended.

Out of class problem sets: Throughout the semester, students will do required problem sets/exercises six times.  Students may work on the problem sets in groups of 4-5 people, but each student must turn in his or her own work. Students must submit hard copies of their work, unless there are extenuating circumstances.  Please write the names of the people in your group on your homework.  Points will be deducted for late homework. Students will be able to drop their lowest problem provided they made a good faith effort to complete all problems and Stata exercises on all six problem sets.

**Attendance and Active Participation in Class** (10%):Attendance is mandatory except in the case of illness, family emergencies, out of area athletic events or other extenuating circumstances. Attendance will be used as a tiebreaker if you are in between grades, as is frequently the case. Students are also expected to be actively engaged during class, and use electronics and computers only for classroom-related exercises or notetaking. You will also be required to attend a paper presentation on the afternoon of June 1.

**Midterm** (20%): There will be a midterm on Wednesday, April 29 (Estimated). The exams will closely mirror the homeworks.

**Group Paper** (20%): Students will be required to write in a group of 4-5 people a research paper analyzing an issue of their choosing using the quantitative skills acquired during the course of the semester.  I will make available data sets, such as the General Social Survey and the American National Election Study, so that students can choose a research issue of interest to them.  Students are also free to use other data sets or compile their own data sets.

Students will submit their paper proposal on Monday, May 4. The proposal must include a description of the proposed project as well as the type of statistical analysis proposed to be undertaken. Students must also submit how they propose to divide up the work and all students in the group must sign the document signifying their agreement for each group member to perform the assigned task. During the week of May 18, students will have time during class or the x hour to meet with their groups and to propose next steps. On Friday, May 22, each group will submit an update of their progress. The proposal and update are worth 10% of the group paper grade. Final papers are due on June 1. On June 1, we will also have our paper presentations in Hinman Forum.

**Final Exam** (30%): There will be a final exam on Friday, June 5 at 8AM.

***Books***

Primary Textbook (available at Dartmouth Bookstore & Wheelock as well as online):

Agresti, Alan and Barbara Finlay. 2009.  Statistical Methods for the Social Sciences.  4th Ed.  Pearson.

*Recommended Books*

I recommend that each study group purchase one book that will help them use the computer program Stata. I list recommended books below, and I also placed these books on reserve in the library.

Longest, Kyle. 2015. Using Stata for Quantitative Analysis, 2nd edition. Sage Press. I ordered copies of this book at Dartmouth and Wheelock bookstores because this book was the cheapest of the three.

Pollack, Philip H.  2015.  A Stata Companion to Political Analysis. CQ Press. Either the 2nd or 3rd edition is fine.

Hamilton, Lawrence C.  2013. Statistics with STATA. Cengage. Any edition using Stata 10, 11, 12 or 13 is acceptable.

I also placed several other statistics books and Stata books on reserve on in the library. If you are having difficulty understanding a concept, sometimes reading multiple descriptions of the assigned topic can help you understand it better.

***Grading Politics:*** Students must take the midterm and final as scheduled unless the student receives advanced permission based on an extenuating personal circumstance or illness. The research paper is due at the start of class on the assigned due date.  Points will be deduced for a late paper. Out of fairness to all students in the class, there will be no extensions except in the case of extenuating circumstances.

***Study Groups*:** There will be a study group at the Academic Skills Center. Online signups begin on Thursday, April 2 at noon with study groups starting meetings the following week.

***Statistical Consultant***: Dartmouth has a statistical consultant who can help you with the commands for Stata. Please email Jianjun.Hua@dartmouth.edu. He will have office hours each week as well.

***Electronic Device Policy***: Students may also use electronic devices and laptop computers for classroom-related notetaking and exercises. Other use of electronic devices will result in a lower attendance/participation grade.

***Academic Honor Principle*:** Students are responsible for understanding Dartmouth’s academic integrity rules. Explanations of the integrity rules and principles can be obtained at <http://www.dartmouth.edu/~uja>.  Ignorance of the Academic Honor Principle will not be considered an excuse if a violation occurs.  Beyond any penalties imposed as a consequence of an Academic Honor Principle investigation, any student found to have cheated or plagiarized on homework, tests or the research project will receive a failing grade in the class.  Details on citing sources are available at http://www.dartmouth.edu/~sources.

***Students with Disabilities*:** Students with learning, physical or psychiatric disabilities enrolled in this course that may need disability-related classroom accommodations are encouraged to make an appointment to see me as soon as possible.

***Religious Observances*:** Should you have a religious observance that conflicts with your participation in the class, please speak with me to discuss appropriate accommodations.

**Course Outline**

**Mon., Mar. 30: Introduction: Why Study Social Science Quantitatively?**

**Wed., Apr. 1: Conceptualization, Operationalization and Measurement of Variables**

 - Chapters 1, 2

 - Download Stata to computers (Instructions available on Canvas)

 - Optional Stata Books: Longest, Chapters 1-3; Hamilton, Chapters 1-2; Polluck, Chapters 1,3

**Thurs., Apr. 2 (x hour), Fri., Apr. 3, Mon., Apr. 6 (In Class Problem Set #1): Descriptive Statistics**

* Chapter 3
* Optional Stata Books: Longest, Chapter 4; Hamilton, Chapter 2; Polluck, Chapters 2, 4

**Out of Class Problem Set #1 Due Wed., Apr. 8**

**Mon., Apr. 6, Wed., Apr. 8: Probability Distributions**

* Chapter 4

**Thur., Apr. 9 (x hour), Fri., Apr. 10, Mon., Apr. 13 (In Class Problem Set #2), Wed., Apr. 15: Confidence Intervals**

* Chapter 5
* Optional Stata Books: Longest, Chapter 5; Hamilton, Chapter 5; Polluck, Chapter 6

**Out of Class Problem Set #2 Due Wed., Apr. 15**

**Wed., Apr. 15, Thur., Apr. 16 (x hour), Fri., Apr. 17 (In Class Problem Set #3), Mon., Apr. 20: Hypothesis Testing/Significance Tests**

* Chapter 6
* Optional Stata Books: Longest, Chapters 5-6; Hamilton, Chapter 6; Polluck, Chapter 6

**Wed., Apr. 22, Fri., Apr. 24: Comparison of Two Groups; Discussion on How to Conduct Surveys**

* Chapter 7

**Out of Class Problem Set #3 Due Fri., Apr. 24**

**Mon., Apr. 27: Midterm Review Session**

**Wed., Apr. 29: Midterm Exam (Estimated)**

**Thur., Apr. 30 (x hour), Fri., May 1, Mon. May 4 (In Class Problem Set #4): Chi Square and Association between Categorical Variables**

* Chapter 8.2, 8.3
* Optional Stata Book: Longest, Chapter 5; Hamilton, Chapter 5; Polluck, Chapter 7

**Paper Proposal Due, Mon., May 4**

**Mon., May 4, Wed., May 6, Thur., May 7 (x hour), Fri., May 8, Mon., May 11 (In Class Problem Set #5): Linear Regression**

* Chapters 9, 10 (skim), 14.1-14.3
* Optional Stata Book: Longest, Chapter 7; Hamilton, Chapter 7; Polluck, Chapters 8-9

**Out of Class Problem Set #4 Due Wed., May 6**

**Mon., May 11, Wed., May 13: ANOVA**

* Chapter 12, 13.1-13.4 (skim)
* Optional Stata Book: Longest, Chapter 6; Hamilton, Chapters 6

**Out of Class Problem Set #5 Due Wed., May 13**

**Fri., May 15: Green Key Weekend**

**Mon., May 18, Wed., May 20, Fri., May 22, Wed., May 27 (In Class Problem Set #6): ANOVA/Other Models in Statistical Analysis; Group meetings will occur this week to discuss the projects during the regular class time or x hour.**

* Chapter 15.1, 15.2, 16.1, 16.2, 16.3, 16.5
* Optional Stata Book: Hamilton, Chapter 3 (Graphing); Polluck, Chapter 4-5, 8

**Fri., May 22: Submission of Group Paper update**

**Mon., May 25: Memorial Day**

**Fri., May 29: Exam Review Session**

**Out of Class Problem Set #6 Due Fri., May 29**

**Mon., June 1: Poster Session; Research Papers Due**

**Mon., June 1: Paper presentation for Quantitative Social Science Program**

**Fri., June 5, 8AM: Final Exam**