Course description & goals
This course will introduce you to how political scientists attempt to apply the scientific method and scientific reasoning to the study of political phenomena. We will begin briefly considering the development of political research as a social science and then move through the social scientific method, applying what we learn to everyday political events.

A critical tool in social science is the statistical analysis of quantitative data. We will therefore discuss ways of using statistical tools to describe data, relationships, and make inferences about the world. Classes will be largely lecture-based, with some group work designed to provide practice in the concepts introduced. By the end of this course you will be exposed to basic statistical computation and graphics in the open-source software package $\mathcal{R}$.

Expectations
I expect that you will come to class ON TIME and prepared, having already read the assigned readings for that class meeting. If it becomes apparent that individuals are repeatedly coming to class late or unprepared, I reserve the right to administer brief quizzes.

In return, you can expect that I will come to class prepared with a clear agenda and a lecture. I will also return all on-time assignments within a week, barring special circumstances.

This syllabus is only a guide. I reserve the right to modify the syllabus throughout the semester.

Course materials
Required:
- Periodic readings on the course website
- Regular access to a computer with a copy of Microsoft Excel and the $\mathcal{R}$ statistical computing environment
- Lecture notes posted to the course website
a note on course sections and computing

Course sections will primarily focus on computing and working through problem set exercises, but they are also a time for you to ask clarification questions of the TA. If you have a laptop computer I strongly suggest you bring it to section meetings.

We will begin by showing you some computational tools in the Excel spreadsheet program, but we will rapidly move to a more advanced platform called \( \mathcal{R} \). \( \mathcal{R} \) is a free, open source statistical computing environment. You can download and install the most recent version of \( \mathcal{R} \) from CRAN at \url{http://cran.r-project.org/}. While \( \mathcal{R} \) is at the cutting edge of statistical software, it can be a little difficult to master. We will do our best to help you along. By the end of the course you will know how to load data into \( \mathcal{R} \) and use it to produce some cool graphics and conduct simple statistical analysis. After this class you can mention on your resume that you are a proficient user of \( \mathcal{R} \).

Other recommended books and resources
- Cleveland, William S. *Visualizing Data*
- Lave & March. 1993 *An Introduction to Models in the Social Science*.

Administrative policy

Assignments & grading

There will be four unit exams, and a final exam. The exams will focus on knowing and retaining basic definitions and facts as well as evaluating scientific arguments. Problem sets will require you to actually “do the math.”

Your grade will be composed of the following components:
- 54% Unit exams: There will be four unit examinations. The lowest exam score will be dropped. The remaining three exams will be weighted equally.
- 20% Final exam: comprehensive final exam given on Sunday, May 13 at 2:45PM.
- 20% Problem Sets: There are five problem sets. Your lowest scoring problem set will be dropped. Your remaining four problem sets will be equally weighted.
- 6% Participation and attendance.

Grades will be assigned as follows:

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<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>100-92</td>
<td>A</td>
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<tr>
<td>87-91</td>
<td>AB</td>
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<td>81-86</td>
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<td>69-75</td>
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<td>60-68</td>
<td>D</td>
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<td>&lt; 60</td>
<td>F</td>
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Exams

You are expected to be present for all exams at the beginning of the exam period. For exams occurring during the regular semester, students will be allotted the entire class period for the exam. For final exams, students will be allotted the entire final exam period that the University has appropriated. A ten-minute grace period will apply for the beginning of all exam periods. After the initial ten minutes have expired, students will be penalized 10 points for every 5 minutes late. Absences or late arrivals for exams will only be excused for participation in formally sanctioned University events, or extraordinary events if they are accompanied by sufficient (i.e. Health Services Excuse Forms) documentation within two calendar days of the absence or late arrival. The instructor reserves the right to determine what constitutes an extraordinary circumstance as well as what shall be considered sufficient documentation. If they have been excused for their absences, students will have five working days to make up a missed exam. If there are extraordinary circumstances which would prevent the student from making up the exam in five working days, the instructor must be informed of this fact prior to the expiration of the five day period. The instructor reserves the right to administer makeup exams in any format (multiple choice, short answer, essay), which may not necessarily correspond to the original exams format. If a student misses an exam and does not have an excused absence, the student will receive a zero for the exam.

Submitting written work

Problem sets will involve a combination of math, written interpretation, and computation. **Written work must be typed and submitted electronically via the course drop-box.** Math can be hand written and submitted in hard copy in class but must be legible. Any required computer code or files must also be submitted electronically along with your written responses. **All written documents must be submitted as .pdf or .txt files.** No proprietary software (.docx, etc.)!

Late work

I expect all work to be turned in by the beginning of the class period in which it is due. Any work submitted after that time period will be discounted at the exponential rate of \(2.2ge^{-d}\) where \(g\) is the score you get and \(d\) is the number of days (or majority portion thereof) late your assignment is. Any work submitted after the initial collection of assignments is considered to be 1 day late.

Extra credit

Ain’t none.
Grade disputes

If you believe I have made an error in grading your assignment, you may petition me to change your grade. If you choose to do so, you must write a 1-page typed memo describing EXACTLY what error you believe I made AND what grade you think you deserve. I will not entertain grade disputes beyond seven days from the date I initially returned the graded assignment.

Incomplete grades

No incomplete grades will be given unless there is an agreement between the instructor and the student PRIOR TO the end of the course. The instructor retains the right to determine legitimate reasons for an incomplete grade.

Office Hours

I have office hours each week. This is your opportunity to talk with me in small groups or 1-on-1. This is time I reserve for you, so please take advantage of it. If you feel like you’re falling behind or are having trouble in the course, come see me immediately! The semester moves quickly. Note that undergraduates get priority for my Monday office hours. Graduate students get priority during Thursday office hours.

Email & website (Learn@UW) policy

I will be using email and the course website regularly to communicate with the class. You should feel free to contact me via email. I will do my best to respond to email queries within 12 hours during the week and 24 hours on weekends. Please do NOT expect me to be at your beck and call on Sundays.

If you have comments, questions, or concerns about the course that you do not feel comfortable bringing to me personally there is a link on the course Learn@UW site from which you can send me anonymous email.

The course website will contain important course information, including readings, details on assignments, and announcements.

Policy on class announcements

I encourage you to be an active an participatory citizen in class and in the larger community. I will allow students to make short announcements to call attention to student groups.
or off-campus activities so long as (1) you are not advocating for violence and (2) all announcements are completed by the official beginning of the class meeting.

**Academic honesty**

I take academic honesty seriously and will not tolerate plagiarism or other forms of cheating or dishonesty. Students in this class have the right to expect that their fellow students are upholding the academic integrity of this University. You may work together for homework assignments but the write up and analysis must be your own work. All analytic work is expected to be your own. You will appropriately recognize and cite all sources of data or information you use. If you are unsure how to do this, please see me in office hours or ask in class. If you are unsure what constitutes plagiarism, please see UW’s academic honesty policy here: [http://students.wisc.edu/saja/misconduct/UWS14.html](http://students.wisc.edu/saja/misconduct/UWS14.html).

**Students with Disabilities**

Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student Disability Resource Center; (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first two weeks of class. For more information about services available to students with disabilities, contact McBurney Center 702 W. Johnson St.; 608-263-2741; mcburney@studentlife.wisc.edu; [http://www.mcburney.wisc.edu/](http://www.mcburney.wisc.edu/)

**The Plan**

- Mon, Jan 23: Intro
- Wed, Jan 25: Asking questions, solving puzzles

**Unit 1: Science, Theory, and Causation**

- Mon, Jan 30: Political science? KW Chapter 1 pgs. 1-14
- Wed, Feb 1: The art of theory building KW Chapter 1 pgs. 15-19
- Mon, Feb 6: Your hypothesis KW Chapter 2 pgs. 22-31
- Wed, Feb 8: Thinking formally KW Chapter 2 pgs. 31-43
- Mon, Feb 13: Causality KW Chapter 3 pgs. 45-65; Wired article (online).
- Wed, Feb 15: Review.
- Mon, Feb 20: **Unit 1 exam**
Unit 2: Measurement and Descriptive Statistics

- Wed, Feb 22: Research design I  KW Chapter 4 pgs. 67-77
- Mon, Feb 27: Research design II  KW Chapter 4 pgs. 77-84
- Wed, Feb 29: Measurement I  KW Chapter 5 pgs. 86-91; Best chapter (online).
- Mon, Mar 5: Measurement II  KW Chapter 5 pgs. 91-102
- Wed, Mar 7, Descriptive statistics:  KW Chapter 6 pgs. 104-118
- Mon Mar 12, Review
- Wed Mar 14, **Unit Exam 2**

Unit 3: Inference and Hypothesis Testing

- Mon Mar 19: Populations and Samples/Statistical Inference  KW Chapter 7 pgs. 120-132
- Wed Mar 21: $\chi^2$ tests  KW Chapter 7 pgs. 134-45
- Mon, Mar 26: Correlation  KW Chapter 8 pgs. 150-156 (n.b., this is out of order)
- Wed, Mar 28: Difference of Means  KW Chapter 8 pgs. 145-150

*****SPRING BREAK*****

- Mon, April 9: Review
- Wed, April 11–**Unit Exam 3**

Unit 4: Regression

- Mon, April 16: Bivariate regression I  KW Chapter 9 pgs. 159-165
- Wed, April 18: Bivariate regression II  KW Chapter 9 pgs. 165-177
- Mon, April 23: Multiple regression I  KW Chapter 9 pgs. 177-188
- Wed, April 25: Multiple regression II  KW Chapter 9 pgs. 188-200
- Mon, April 30: Dummy Variables and Logit Models I  KW Chapter 11 pgs. 202-212
- Wed, May 2: Dummy Variables and Logit Models I  KW Chapter 11 pgs. 212-220
- Mon, May 7: Review
- Wed, May 9: **Unit Exam 4**

Sunday, May 13  Final Exam@2:45 PM