

Science, Technology, and Politics
UGS 303 Signature Course (Spring 2018)

Professor: Dr. Rachel Wellhausen
(rwellhausen@utexas.edu but Canvas message preferred)
Office hours: Monday 12-3 (Batts 4.138)

TA: TBD

Lectures: MW 11-12 (PAR 201)
Sections: F 10-11 (PAR 210) (62805)
 F 11-12 (CAL 22) (62810)
 F 12-1 (CAL 221) (62815)

Course Description:

Most fights over contemporary science and technology are rooted in classic political problems of power, scarcity, and the distribution of resources. This course will examine politics in the United States and abroad around issues such as intellectual property rights, health and environmental policy, defense procurement, manufacturing policy, and R&D funding. We will learn and apply foundational theories in political science to understand how voters and politicians understand science and how scientific knowledge is incorporated (or not) into public policy. What are the limits of the government in making optimal decisions about science and technology?

This course relies heavily on several core articles from the social sciences as well as contemporary readings from a variety of academic and journalistic sources. All of the readings are available on Canvas. We reserve the right to change readings based on our progress during the semester. Please reference the course's Canvas page for the latest updates. Canvas emails from the professor and TA will be the primary form of communication during the semester.

Signature Course Mission and Course Essentials:

The Signature Courses at the University of Texas at Austin will connect students with distinguished faculty members in unique learning environments. By way of this rigorous intellectual experience, students will develop college-level skills in research, writing, speaking, and discussion through an approach that is interdisciplinary, collaborative, experiential, and contemporary.

The course will address the Signature Course essentials in the following ways:

- Writing (60% of grade)
 - 3-page Essay 1: First draft (10%), Peer review (2%), and final draft (8%)
 - 3-page Essay 2: First draft (10%), Peer review (2%), and final draft (8%)
 - Take-home Essay Final (20%)

- Oral communication (25% of grade)
 - Small group oral presentation (15%)
 - Discussion (10%): Mandatory attendance and participation in section. *Absences from section and/or attendance without participation will negatively affect the grade.*
- University Gem (5% of grade): Short report on museum exhibit.
- Information Literacy (5% of grade): Short assignment on research strategy.
- University Lecture Series (5% of grade): Attend one lecture and complete an assignment.

Grading Policy:

Absolutely no alternate exam arrangements will be made nor late assignments accepted, with four possible exceptions.

Exception 1: A university-approved function. The student must inform the professor and TAs, with proper documentation, well before the deadline or scheduled exam time, so that the TAs can work on alternative arrangements.

Exception 2: Religious Holidays. By UT Austin policy, the student must notify the professor of the pending absence at least fourteen days prior to the date of observance of a religious holy day. If the student must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, the student will be given an opportunity to complete the missed work within a reasonable time after the absence.

Exception 3: Disability Accommodations. Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities (SSD: ddce.utexas.edu/disability; 512-471-6259). Students registered with SSD are required to follow the SSD procedures, which include providing accommodation requirements to the professor (usually in a letter) and then meeting with the professor in office hours to discuss and commit to the approach that will be taken in the course. The professor asks that students registered with SSD be proactive: please raise issues with the professor immediately should we make a mistake in providing accommodations. **Students are encouraged to register with SSD and notify the professor as soon as possible. The professor does not make SSD accommodations retroactively.**

Exception 4: Student Emergency. Any student facing severe difficulties during the semester should take advantage of Student Emergency Services, which helps to coordinate between the student and the student's professors. (SES: deanofstudents.utexas.edu/emergency; 512-471-5017; 24/7 Behavior Concerns Advice Line [BCAL]: 512-232-5050) Once a student meets with SES, SES will contact the student's professors on the student's behalf. Thus, students do not need to provide explanations or doctor's notes, etc. to individual professors. Professors rely on SES as an intermediary, because we are not trained to provide students with appropriate services nor evaluate

what services would be most useful. There are many staff members at SES – and throughout UT Austin – whose training and focus are exactly in these areas. Thus, students getting in touch with us directly about severe difficulties will be referred to SES. That said, you are welcome to lean on us when seeking motivation in contacting SES; we are happy to talk, to the extent our positions allow us; and we can connect students to available services. **However, note that SES involvement puts the professor under no obligation to provide special accommodations for a student. Thus, we will provide special accommodations for students using SES on a case-by-case basis.**

Grade scale: (final grades rounded to the nearest whole number)

93 and above	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
67-69	D+
63-66	D
60-62	D-
59 and below	F

Extra Credit:

Extra credit opportunities will be announced and available during the semester. Because extra credit will be available, final grades will not be rounded “just a little bit more.” Extra credit already provides you an opportunity to “round” your grade. Thus, no grade changes are available at the end of the semester, and students are advised not to ask for such special dispensation.

Plagiarism and Academic Misconduct:

All violations of university academic conduct guidelines, including plagiarism, will be referred to the Dean of Students and will result in a zero on the assignment or exam in question. Plagiarism is the use of others’ ideas or work without credit and/or presenting derivative work as one’s own. This includes, but is not limited to, cutting and pasting from someone else’s work or an internet source, failing to identify exact quotes, failing to cite a source for information that is only available from that source, failing to cite a source for an idea or argument you borrowed from that source, and turning in work that is not your own. When in doubt, cite.

University Honor Code:

The core values of the University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity and responsibility. Each member of the University is

expected to uphold these values through integrity, honesty, trust, fairness and respect towards peers and community. Behavior Concerns Advice Line (BCAL): 512-232-5050.

Disability Accommodations:

Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities (512-471-6259, ddce.utexas.edu/disability). Students seeking accommodations are asked to inform the professor *as early as possible*.

Emergency Evacuation Policy:

Occupants of buildings on The University of Texas at Austin campus are required to evacuate buildings when a fire alarm is activated. Alarm activation or announcement requires exiting and assembling outside. Familiarize yourself with all exit doors of each classroom and building you may occupy. Remember that the nearest exit door may not be the one you used when entering the building. Students requiring assistance in evacuation shall inform their instructor in writing during the first week of class. In the event of an evacuation, follow the instruction of faculty or class instructors. Do not re-enter a building unless given instructions by the following: Austin Fire Department, The University of Texas at Austin Police Department, or Fire Prevention Services office. Link to information regarding emergency evacuation routes and emergency procedures can be found at: utexas.edu/emergency.

Schedule, Assignments, and Readings:

**** Please get in the habit of bringing your laptop to Section (if possible) ****

INTRODUCTION

W 17 Jan – Introduction: Normative v. positive

Assignment: UT “Gem” Report (due on Canvas, by 10 AM on 26 Jan)

Assignment: University Lecture Series (due on Canvas, by 10 AM on 20 Apr – though you are strongly advised to submit it directly after the lecture)

F 19 Jan (Section) – How does the US government use science?

Readings:

Gallagher, Kelly Sims. “How Does a US President Settle on Science Policy?” *Scientific American*: 5 Jan 2017. (<http://tinyurl.com/hshtse2>)

M 22 Jan – Science and politics

Readings:

Pielke, Jr., R.A. 28 March 2002. “Policy, Politics, and Perspective.” *Nature* 416: 367-368. (Available on Canvas)

Case Study: Energy Star program. (<https://tinyurl.com/y7vdlo8v>)

THEORY

Why Government Gets Involved

W 24 Jan – Externalities

Readings:

Coase, Ronald. 1960. “The Problem of Social Cost.” *Journal of Law and Economics* 3:1-44. (Available on Canvas)

F 26 Jan (Section) – Assigning property rights

Due: University “Gem” short report (due on Canvas, by 10 AM)

Readings:

Will Wilkinson. 9 November 2017. “Atlas Shrubbed.”

(<https://tinyurl.com/ybn8gkwp>)

Barragan, James. 30 July 2015. “Neighbors sue Terry Black’s over barbecue smoke.” *Austin American-Statesman*. <https://tinyurl.com/y7hcqzrs>

M 29 Jan – Tragedy of the commons

Readings:

Hardin, Garrett. 1968. “The Tragedy of the Commons.” *Science* 162(3859): 1243-1248. (Available on Canvas)

How Policies Change (or Not)

W 31 Jan – Collective action

Readings:

Olson, Mancur. 1982. "Chapter 2: The Logic." In *The Rise and Decline of Nations*. New Haven: Yale University Press. (Available on Canvas)

F 2 Feb (Section) – Collective action game

M 5 Feb – Free riding

Assignment: Essay 1 (due on Canvas, by 10 AM on 16 Feb; bring paper or electronic copy to Section)

Readings:

"The Free Rider Problem." *Stanford Encyclopedia of Philosophy*. 21 May 2003. (<http://plato.stanford.edu/entries/free-rider/>)

How Government Deals with Uncertainty

W 7 Feb – Precautionary principle

Readings:

Summary of "Late Lessons from Early Warnings: Science, Precaution, Innovation." European Environment Agency: 23 January 2013. Read pp 1-12. Skim pp 13-32. Read pp 33-42. (Available on Canvas)

F 9 Feb (Section) – Case study: Human subjects

Video: The Research Clinic. Office of Research Integrity, US Department of Health and Human Services. (<http://ori.hhs.gov/TheResearchClinic>)

Reading: Tuskegee experiments. (<https://tinyurl.com/y7ymfedv>)

M 12 Feb – Science-based precaution?

Readings:

Weiss, Charles. 2006. "Can There Be 'Science-Based Precaution'?" *Environmental Research Letters* 1: 1-7. (<http://tinyurl.com/j72gryt>)

SCIENCE AND TECHNOLOGY APPLICATIONS

Climate Change

W 14 Feb – Overview

Readings:

Selections, Mann, Michael E. and Tom Toles. *The Madhouse Effect* (2016). (On Canvas)

Monastersky, Richard and Nick Sousanis. 24 November 2015. "Comic: The Fragile Framework." *Nature*. (<http://tinyurl.com/ph6dpw3>)

F 16 Feb (Section) – Peer review

Due: Essay 1 First Draft (by 10 AM, bring paper or electronic copy to Section)

Assignment: Essay 1 Final Draft (due on Canvas, by 10 AM on 23 Feb)

*** If you will miss this Section, you must arrange with the TA in advance to do your peer review.*

M 19 Feb – International relations: Paris agreement and US climate policy

Readings:

Read several pieces from a political science blog at the *Washington Post*, covering the Paris Accord and recent international and US government policies on climate.

Paris negotiations (<http://tinyurl.com/zzv3da8>)

What is the Paris agreement? (<https://tinyurl.com/ycm6mgyo>)

Interpreting US withdrawal (<https://tinyurl.com/y9v8tvah>)

What's next for the Paris agreement? (<https://tinyurl.com/yaff3olf>)

International climate finance (<https://tinyurl.com/ycco4x2h>)

W 21 Feb – Subnational action on climate change

Readings:

Subnational action on climate change in the US (<https://tinyurl.com/yc3tshfv>)

Read the series of articles in the New York Times here:

<https://www.nytimes.com/series/changing-climate-changing-cities>

F 23 Feb (Section) – Climate change and persuasion

Due: Essay 1 Final Draft (due on Canvas, by 10 AM)

Readings:

Who thinks climate change is real? (<https://tinyurl.com/yc7mmmxz>)

Security

M 26 Feb – Overview

Readings:

Wolfe, Audra. 25 September 2015. "When Scientists Do What Diplomats Can't." *The Atlantic*. (<http://tinyurl.com/pbskvh5>)

W 28 Feb – Dual-use technology

Readings:

Selgelid, Michael J. 2009. "Governance of Dual-use Research: An Ethical Dilemma." *Bulletin of the World Health Organization* 87: 720-723.

(<http://tinyurl.com/jy32336>)

F 2 Mar (Section) – Researching controversy

In-section Assignment: Information literacy

**** Please bring laptop to Section (if possible)**

**** If you will miss this Section, you must arrange with the TA in advance to do an alternative assignment.**

M 5 Mar – Iran deal

Readings:

Read several blog posts:

“The Iran Deal is Pretty Damn Attractive Given the Alternatives.”

(<http://tinyurl.com/hrm9fnk>)

Public opinion (<https://tinyurl.com/y75kysfr>)

Proliferation (<https://tinyurl.com/yc9oyg63>)

Iran perspective (<https://tinyurl.com/y97eqwtz>)

Staying in (<https://tinyurl.com/yd8zf593>)

US cheating? (<https://tinyurl.com/yarfjkrh>)

Assignment: Essay 2 (Due on Canvas, by 10 AM on 23 Mar; bring paper or electronic copy to Section)

W 7 Mar – Library session (**Meet in PCL, Details TBD**)

**** Please bring laptop (if possible)**

F 9 Mar (Section) – *SECTION IS CANCELLED*

(Spring Break)

Intellectual Property

M 19 Mar – Overview

Readings:

Besen, Stanley M. and Leo J. Raskind. 1991. “An Introduction to the Law and Economics of Intellectual Property.” *The Journal of Economic Perspectives* 5(1): 3-27. (Available on Canvas)

W 21 Mar – Development and intellectual property

Readings:

Stiglitz, Joseph E. 5 August 2005. “Intellectual-Property Rights and Wrongs.” *Project Syndicate*. (<http://tinyurl.com/h7g5b3a>)

Hunter, Rod. 17 February 2014. “Intellectual Property and Economic Development.” *Project Syndicate*. (<http://tinyurl.com/z9ccaftp>)

F 23 Mar (Section) – Peer review

Due: Essay 2 First Draft (by 10 AM, bring paper or electronic copy to Section)

Assignment: Essay 2 Final Draft (due on Canvas, by 10 AM on 6 Apr)

**** If you will miss this Section, you must arrange with the TA in advance to do your peer review.**

M 26 Mar – International cooperation on intellectual property

Readings:

“Intellectual property: Protection and enforcement” *Understanding the WTO: The Agreements*. (<http://tinyurl.com/gwcsdhf>)

Explore the website of the World Intellectual Property Organization (WIPO)
(www.wipo.int)

W 28 Mar – In depth: IP and Biology

Readings:

Intellectual Property and Genomics.” National Human Genome Research Institute.
(<http://www.genome.gov/19016590>)

F 30 Mar (Section) – Generics

Readings TBD

Food

M 2 Apr – India’s Green Revolution and GMOs

Audio: Zwerdling, Daniel. 13-14 April 2009. “India’s Farming ‘Revolution’ Heading for Collapse.” *NPR All Things Considered*.

(<http://tinyurl.com/d7wxe3>) and (<http://tinyurl.com/cyeefd>)

Siegel, Robert. 26 March 2004. “Father of ‘Green Revolution’ Derides Organic Movement.” *NPR All Things Considered*.

(<http://tinyurl.com/h95bms9>)

W 4 Apr – Regulating for Health and Safety?

Readings:

Lynch, Diahanna and David Vogel. “The Regulation of GMOs in Europe and the United States: A Case-Studye of Contemporary European Regulatory Politics.” *Council on Foreign Relations* (2001). (<http://tinyurl.com/kzrgjaq>)

F 6 Apr (Section) – Case study: Trans fats

Due: Essay 2 Final Draft (due on Canvas, by 10 AM)

Assignment: Oral presentations

Readings:

Belluz, Julia. 17 June 2015. “Why it took the FDA nearly 40 years to ban trans fats.” *Vox.com*. (<http://tinyurl.com/onq8g3q>)

Dennis, Brady. 16 June 2015. “The 100-year-old scientist who pushed the FDA to ban artificial trans fat.” *The Washington Post*. (<http://tinyurl.com/gpct289>)

Telecommunications

M 9 Apr – Politics of regulation

Readings:

Wu, Irene. 2008. “Who Regulates Phones, Television, and the Internet? What Makes a Communications Regulator Independent and Why It Matters.” *Perspectives on Politics* 6(4): 769-783. (Available on Canvas)

W 11 Apr – Social media and protest

Video: Morozov, Evgeny. 2009. “How the Net Aids Dictatorships.” *TedGlobal*.

(<http://tinyurl.com/gvlboyt>)

Video: Ghonim, Wael. 2011. "Inside the Egyptian Revolution." *TED2011*.

(<http://tinyurl.com/jjmlxpr>)

F 13 Apr (Section) – Net neutrality

Readings:

Lee, Timothy. "Network Neutrality, Explained." Vox.com.

(<http://www.vox.com/cards/network-neutrality>)

Steimle, Josh. 14 May 2014. "Am I The Only Techie Against Net Neutrality?" *Forbes*.

(<http://tinyurl.com/19lpxzc>)

Pai, Ajit. 2017. "Restoring Internet Freedom." (<https://tinyurl.com/ydabp8me>)

Innovation

M 16 Apr – Role of science and technology in US competitiveness

Reading: Pisano, Gary P. and Willy C. Shih. July-August 2009. "Restoring American Competitiveness." *Harvard Business Review*.

(Available on Canvas)

W 18 Apr – US industrial policy

Readings:

Phillips, Kevin P. July-August 1992. "US Industrial Policy: Inevitable and Ineffective." *Harvard Business Review*. (Available on Canvas)

Salam, Reihan. 28 December 2009. "America's New-Old Industrial Policy." *Forbes*.

(<http://tinyurl.com/hx4bck5>)

F 20 Apr (Section) – Case study: Investment incentives

Due: University Lecture Series (due on Canvas, by 10 AM – though you hopefully submitted it a long time ago, directly after the lecture)

Audio: Jensen, Nathan. 28 October 2016. "Racing to the Bottom." *Scholars Strategy Network's No Jargon Podcast*. (<https://tinyurl.com/yd9wpcpx>)

Reading: Jensen, Nathan. September 2016. "Business Location Incentives are Ineffective – So why do they persist in American states and localities?"

(<https://tinyurl.com/y6umd9z5>)

M 23 Apr – Innovation abroad: Case study – Renewables in China

Readings:

Nahm, Jonas and Edward S. Steinfeld. 2014. "The Role of Innovative Manufacturing in High-Tech Product Development: Evidence from China's Renewable Energy Sector." In *Production in the Innovation Economy* (eds Richard Locke and Rachel Wellhausen), MIT Press. (Available on Canvas)

Policing Science

W 25 Apr – Who monitors scientists?

Readings:

Jasanoff, Sheila. 8 April 2013. "Watching the watchers: lessons from the science of science advice." *The Guardian*. (<http://tinyurl.com/p3cjawx>)

Jasanoff, Sheila et al. 7 April 2015. "Human Genetic Engineering Demands More than a Moratorium." *The Guardian*. (<http://tinyurl.com/nwv7oyo>)

F 27 Apr (Section) – **Oral presentations**

M 30 Apr – Ethics in science journalism?

Readings TBD

W 2 May – Wrap-up and Case study: Home-brewed opiates

Reading: Oye, Kenneth, Chappell Lawson, and Tania Bubela. 18 May 2015.

"Drugs: Regulate 'home-brew' opiates." *Nature*.

(<http://tinyurl.com/kzvbuck>)

F 4 May (Section) – **Oral presentations**

Assignment: Take-home Final (due on Canvas, 10 May by 5 PM)

**** TAKE-HOME FINAL DUE SATURDAY 12 MAY BY 4:59 PM ****

The take-home final is due by end of assigned final period. There is no other final for this course.