Course Name: Science and Politics
Course Number: PS 476_400
Credits: 4
Instructor name: Jonathan (Jon) Ruff
Instructor email: ruffjo@oregonstate.edu
Teaching Assistant name and contact info: None.

Course Catalog Description

Relationship between science and the political system in political ideas and history, in bureaucratic politics of science policy, and in contemporary scientific disputes.

Extended Course Overview

In recent years there has been an increasing emphasis among decision makers, interest groups, and citizens alike on the importance of more science-based public policy at local, regional, national, and international levels of governance. Many have normative expectations that this can improve the quality of complex public policy decisions. The assumption is that scientists can and should facilitate the resolution of public policy decisions by providing objective scientific information to policymakers, the public, and by becoming more involved in policy arenas.

There are others, however, who suggest that science is used for less desirable policy purposes such as rationalizing and legitimizing decisions made by elites. This latter view has been supported by postmodern perspectives in the sociology of science, which argue that the authority of science and scientific "narratives" is socially constructed by scientists and users of scientific information and is not inherent to science *qua* science. This model posits the following: science and scientists are considered just one of many sources of authority concerning natural resources management issues; scientific information may itself be biased; and other types of policy actors, information, and values are more important in arriving at sensible public choices.

This course examines the role of science and scientists in the political and policy process from multiple perspectives. It connects historical and current dilemmas between the scientific community and the publics of the United States and European countries. A specific focus is placed on the prevalent role that power plays in determining scientific and technological outcomes.

Communication

Please post all course-related questions in the Q&A Discussion Forum so that the whole class may benefit from the conversation. Please contact me privately for matters of a personal nature. I will reply to course-related questions within 24-48 hours. I will strive to return your assignments and grades for course activities to you within seven days of the

due date.

Course Credits
This course combines approximately 120 hours of instruction, online activities, and assignments for 4 credits.

Technical Assistance
If you experience any errors or problems while in your online course, contact 24-7 Canvas Support through the Help link within Canvas. If you experience computer difficulties, need help downloading a browser or plug-in, or need assistance logging into a course, contact the IS Service Desk for assistance. You can call (541) 737-8787 or visit the IS Service Desk online.

Learning Resources
First, a warning, many of the readings in this course are quite disturbing because they document egregious, unethical, authoritarian, and horrifying abuses of science and technology. As we proceed through the readings, let's keep in mind how we can adopt policies and practices to guard against such abuses and conduct science in an ethical manner to the benefit of society at large (e.g. enforcement of Nuremberg Code, Human Subjects training and regulations).

Required Textbooks
Some may be available **electronically** through the OSU Library, OSU Bookstore, or other provider:

1. Jasanoff, Shelia. (2007). *Designs on Nature: Science and Democracy in Europe and the United States.* Princeton: Princeton University Press.

   This book compares the politics and policy of the life sciences (biotechnology, cloning, stem cells, GMOs, etc.) in Britain, Germany, the United States, and in the EU as a whole.

2. Hornblum, Allen. (1999). *Acres of Skin: Human Experiments at Holmsburg Prison.* New York: Routledge.

   This book provides an overview of the use of prisoners for medical research at Holmesburg Prison. Students may also be interested in reading Rebecca Skloot's *The Immortal Life of Henrietta Lacks.*

3. Tyson, Neil deGrasse and Lang, Avis. (2018). Accessory to War: The Unspoken Alliance Between Astrophysics and the Military. New York: W. W. Norton & Company

   Neil deGrasse Tyson and writer-researcher Avis Lang examine how the methods and tools of astrophysics have been enlisted in the service of war.

Additional reading and video resources can be found in Canvas Modules.

Note to prospective students: Please check with the OSU Bookstore for up-to-date information for the term you enroll (OSU Bookstore Website or 800-595-0357). If you purchase course materials from other sources, be very careful to obtain the correct ISBN.

Canvas

This course is delivered via Canvas, where you will interact with your classmates and your instructor. You will access the learning materials within the course site, such as the syllabus, class discussions, assignments, projects, and quizzes.

Measurable Student Learning Outcomes

Students in this course will meet and be evaluated on both department specific and Bacc Core learning outcomes, see below.

Political Science Outcomes:

1. Comprehend the basic structures and processes of government systems and/or theoretical underpinnings.
2. Analyze political problems, arguments, information, and/or theories.
3. Analyze and think critically about the role power plays in science and politics globally.

Bacc Core Outcomes:

This course fulfills the Baccalaureate Core requirements for the Science, Technology, and Society category. Students in Science, Technology, and Society courses shall:

4. Analyze relationships among science, technology, and society using critical perspectives or examples from historical, political, or economic disciplines.
5. Analyze the role of science and technology in shaping diverse fields of study over time.
6. Articulate in writing, a critical perspective on issues involving science, technology, and society using evidence as support.

Evaluation of Student Performance

Activity	# of Occurrences	Points Per Occurrence	Total Points	% of Final Grade	Learning Outcomes
Discussion Posts	9	5	45	45	1-6
Narrated PowerPoint	1	14	14	14	1-6
Policy Papers	3	12	36	36	1-6

Activity Descriptions:

A. **Discussion Posts (45% of final grade):** There are 9 graded discussion board assignments beginning in Week 1. Each week students will be required to write an original post that responds to the prompt by using course material, relevant observations, and critical thinking. In addition, everyone will be required to respond to 2 classmates' posts (at minimum). The responses should be thought provoking and expand the discussion. Feel free to ask your classmates questions or respond to posts in which you may disagree. Responses such as "I agree" or "great post" will not receive full credit. Rubrics for each assignment can be found under the corresponding assignment tab in Canvas.
   a. Initial posts are due every Wednesday by 11:59pm PST.
   b. Response posts are due every Friday by 11:59pm PST.

B. **Narrated PowerPoint (14% of final grade):** Each student is required to create ONE individual video/narrated PowerPoint presentation with a length of 7-12 minutes to be posted as a Canvas Discussion in weeks 4-9. At the beginning of the term, students will sign up (via Google Doc) for a week and subsequent topic. Students are also responsible for identifying their case study selection at the time of sign-up.

   o Students are expected to respond to the question(s) in the weekly discussion board AND present their case study.
      ▪ Ideally, this will be well-planned and flow together, rather than being segmented parts of the presentation.
   o Case studies may be any topic related to the week's module content so long as there is sufficient and reliable information available.
   o Presenters should conduct a short research/case study (from the internet, newspaper, academic articles, etc.) and provide references/citations.
      ▪ NOTE: do not duplicate a case study topic that has already been selected by another student.
   o At week 3, you should submit a one-or-two-page outline of your presentation plan (i.e. introduction, relation to course materials, case study, conclusion, references).
      ▪ The presentation outline should help you plan your presentation.
      ▪ This also gives me an opportunity to provide feedback on your topic and sources.

- o Video presentation should be your voice and screen recording of your PowerPoint (Please see "Tools & Technology" section below for more detailed instruction and tutorials). Please be as concise as possible, **do not exceed 12 minutes**. The video should be posted on Canvas on Wednesday of weeks 4-9 under the weekly Canvas Discussion. Please talk to me as soon as possible if you have a concern about recording.
- o If you are not presenting in the week, you are expected to participate in the discussion by posting your original post by Wednesday and two responses (comment/question) on two different video presentations/written responses by Friday of weeks 4-9.
- o All presenters should respond to non-presenters' comments and questions by Sunday of the corresponding weeks.
- o The comments, questions, and responses from both presenters and non-presenters will be graded as Canvas weekly discussion*.*

  a. PowerPoints posted to Discussion Board due Wednesday by 11:59pm PST.
  b. Classmates questions/comments to PPT due Friday by 11:59pm PST.
  c. Responses to classmates' questions on your PPT Sunday by 11:59pm PST.

C. **Policy Papers (39% of final grade):** There will be 3 policy response (PR) papers in this course. Each paper should be 5-6 pages (single spaced, 12 point, Times New Roman, 1 inch margins) that distills the essential elements of the assigned readings, PowerPoints, and additional web-based materials. For the purposes of this class, these essential elements are defined as:

   a. **Introduction:** Each PR should have an introduction that provides an overview of the readings covered by the assigned syllabus topics, and a statement of how you organize and approach the topics and questions. Note: this is a single introduction section that synthesizes all material covered in the following questions. DO NOT write an introduction for each separate question.

   b. **Analysis:** Each PR will have you think and write critically about the role of science and technology in society covered for the assigned syllabus topics. You should identify the key scientific institutions and policies that individuals and groups might encounter and how individuals and groups may be impacted.

   c. **The Role of Power:** Discuss how science and technology can reinforce power relationships or lead to political and social conflict (either domestic or international). What are the institutional and policy opportunities and barriers for effective citizen participation in scientific and technology issues? How can people be protected from the abuse of these processes? What can society do to ensure that citizens benefit from science and technological innovations and are not harmed?

   d. **Brilliant Insights or Thoughts:** This category is the only reason you should go over 5-6 pages. As to what you right here, well…hard to say: it should be brilliant though! No more than one additional page.

e. **Be sure to cite appropriately and include a reference page (this page will not be counted against your page limit). See the APA Style Guide for formatting.**

Introduction	3
Analysis	4
Role of Power	4
References & Citations	1
On-time submission	1
Total Points	**13**

Grading Scale

Letter Grade	Percent Range
A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	0-59

** Decimal percentages will always be rounded up to the next point. (Ex. 89.2 → 90)

Course Content

Week	Topic	Reading Assignments	Learning Activities
1	Introduction to Science and Politics	B.S. Steel, "Introduction," B.S. Steel (ed.) *Science and Politics: An A-to-Z Guide to Issues and Controversies* (Sage, 2015). Wolters & Steel, "Introduction," When Ideology Trumps Science (Praeger, 2018).	Review Syllabus and Canvas course website. "Introduce Yourself" post **AND** Discussion Post #1 due Wednesday, 11:59pm PST (or asap for late registration). **AND** Response posts (2) due by Friday, 11:59pm PST.
2	Government, Universities, Science, and Funding	John Krige, *American Hegemony and the Postwar Reconstruction of Science in Europe*, pp. 1-56. Hans J. Morgenthau, "Modern Science and Political Power," *Columbia Law Review* 64 (1964): 1386-1409. E. Press and J. Washburn, "The Kept University," *The Atlantic Monthly* (March 2000): 39-54. Various webpages	Discussion post #2 due Wednesday, 11:59pm PST. **AND** Response posts (2) due Friday, 11:59pm PST. **AND** Sign up for Presentation topic due Friday, 11:59pm PST.

Week	Topic	Reading Assignments	Learning Activities
3	Science & Defense	Tyson & Lang, (2018): pgs. 161-162 Aaron Friedberg, "Science, the Cold War, and the American State," *Diplomatic History* 20:1 (Winter 1996): 107-118. General Eisenhower, "Scientific and Technological Resources as Military Assets," (1946), reprinted in Seymour Melman, *Pentagon Capitalism: The Political Economy of War* (New York: McGraw Hill Book Company, 1970): 231-234. Wim A. Smit, "Science, Technology, and the Military: Relations and Transition," in Sheila Jasanoff, Gerald E. Markle, James C. Peterson, and Trevor Pinch, eds., *Handbook of Science and Technology Studies* (California: SAGE Publications, 1995): 598-626.	Discussion post #3 due Wednesday, 11:59pm PST. Response posts (2) due Friday, 11:59pm PST. **AND** PR paper #1 due Sunday, 11:59pm PST.
4	Defense & Space	Mike Wall, "Presidential Visions for Space Exploration: From Ike to Trump." Slideshow. Tyson & Lang, "Accessory to War: The Unspoken Alliance between Astrophysics and the Military," Chapters 1, 6, 7, 8, 9. News articles & videos.	Discussion post #4 due Wednesday, 11:59pm PST. **AND** Response posts (2) due Friday, 11:59pm PST. **AND** Narrated PPT Presentation Outline due Wednesday, 11:59pm PST.
5	AI, ML, & Robotics	Michael Press, (2017). "Of Robots and Rules: Autonomous Weapons Systems in the Law of Armed Conflict." Georgetown Journal of International Law, 48: 1337-1366. Ronald Arkin, (2008). "Governing Lethal Behavior: Embedding Ethics in a Hybrid	Discussion post #5 due Wednesday, 11:59pm PST. **AND**

Week	Topic	Reading Assignments	Learning Activities
		Deliberative/Reactive Robot Architecture" (Sections 2 & 6). Technical Report. Georgia Institute of Technology. Margot Kaminski, (2015). Robots in the home: What will we have agreed to? Idaho Law Review Vol 51. pp. 661-677. News articles & videos.	Response posts (2) due Friday, 11:59pm PST.
6	Biotechnology I	Sheila Jasanoff, (2005). *Designs on Nature.* Princeton: Princeton University Press. Chapters 1-6. Sang Yup Lee, (2016). Biotechnology: what it is and how it's about to change our lives. World Economic Forum: Annual Meeting of the Global Future Councils. Kolata, G. & Belluck, P., (2018). Why Are Scientists So Upset About the First Crispr Babies? (Links to an external site.)Links to an external site. The New York Times. Video Supplemental Reading: Amy Gutmann and Jonathan D. Moreno, (2018). Keep CRISPR Safe: Regulating a genetic revolution. Foreign Affairs. Hollingsworth, J. & Yee, I. (2019). Chinese scientist who edited genes of twin babies is jailed for 3 years (Links to an external site.). CNN World.	Discussion post #6 due Wednesday, 11:59pm PST. **AND** Response posts (2) due Friday, 11:59pm PST. **AND** PR paper #2 due Sunday, 11:59pm PST.
7	Biotechnology II	Sheila Jasanoff, (2005). *Designs on Nature.* Princeton: Princeton University Press. Chapters 7-11. Al Mauroni, (2018). Synthetic Biology: The promise and peril of a new dual-use technology. War on the Rocks. Video	Discussion post #7 due Wednesday, 11:59pm PST. **AND** Response posts (2) due Friday, 11:59pm PST.

Week	Topic	Reading Assignments	Learning Activities
8	Health	Allen M. Hornblum, *Acres of Skin*, entire book. News articles and videos.	Discussion post #8 due Wednesday, 11:59pm PST. **AND** Response posts (2) due Friday, 11:59pm PST.
9	Climate Change	O'Riordan, T., & Jäger, Jill. (1996). Politics of climate change: A European perspective (Global environmental change series). New York: Routledge. (Chapters 1, 6, 12) Weber, E. (2010). What shapes perceptions of climate change? Wiley Interdisciplinary Reviews: Climate Change, 1(3), 332-342. News articles and videos.	Discussion post #9 due Wednesday, 11:59pm PST. **AND** Response posts (2) due Friday, 11:59pm PST. **AND** PR paper #3 due Sunday, 11:59pm PST.
10	Can Science Ever be Apolitical?	Brown, M. (2009). *Science in democracy expertise, institutions, and representation.* Cambridge, Mass. ; London: MIT Press (OSU Ebook, Chapter 8) News articles and videos.	Discussion post #10 due Wednesday, 11:59pm PST. **AND** Response posts (2) due Friday, 11:59pm PST.

Week	Topic	Reading Assignments	Learning Activities
Finals Week			Extra Credit Discussion Post #11 Due Wednesday, 11:59pm. (No response posts)

Course Policies

Discussion Participation

Students are expected to participate in all graded discussions. While there is great flexibility in online courses, this is not a self-paced course. You will need to participate in discussions on at least two different days each week, with your first post due no later than Wednesday evening, and your second and third posts due by Friday (or Sunday for PPT responses).

Late Work Policy

In response to a number of requests for late submissions on papers and other assignments, I have determined that we should use a new method of scoring. Though my syllabus is quite sternly worded, I am loath to give zeros on assignments. So we will make the following adjustments to scoring late assignments.

- Discussions:
    - Discussions will be open until Sundays at 11:59pm. (We cannot keep them open longer as discussions require a back and forth between students).
        - The current rubric sufficiently captures punctuality in the score (2.5 points)
            - 1.5 points for an on time original discussion post:
                - -.5 for a half-day late.
                - -1 for a full day+ late.
                - -1.5 if posted after Friday (or not at all).
            - 1 point for on-time response posts.
                - - .5 if after Friday.
                - -1 if not posted at all.
- Policy Response papers
    - The due date for policy response papers will not change. However, I will keep them "open" for submission up to four (4) days after the due date. (i.e. Until Thursday after the due date).
        - If submitted on time, you'll receive +1 extra point to your score in "Brilliant insights"
        - If submitted late by one day, you'll receive +.5 extra points in "Brilliant insights"

- If submitted late by more than one day, you'll receive no extra points.
- If you MUST submit later than the "close" date (4 days after the due date), you need to reach out to me individually so we can sort something out.
  - Typically, this will result in us determining a 10-25% penalty on your score.
- Narrated power points
  - Narrated power points are meant to supplement the weekly material provided in discussions. I am not keen to allow late submissions there.
    - However, under extenuating circumstances there are options to submit your work later. If you are running late on submitting the narrated power point, please reach out to me as soon as possible for us to set up an approach that will work for both you and the class. Though, this may result in a 10-25% penalty on your score depending on how late your work is submitted.
  - If you are the presenter for a week, you will have until the Sunday of that week to post your responses to questions/comments about your video.

Incompletes

Incomplete (I) grades will be granted only in emergency cases (usually only for a death in the family, major illness or injury, or birth of your child), and if the student has turned in 80% of the points possible (in other words, usually everything but the final paper). If you are having any difficulty that might prevent you completing the coursework, please don't wait until the end of the term; let your instructor know right away.

Guidelines for a Productive and Effective Online Classroom

Students are expected to conduct themselves in the course (e.g., on discussion boards, email) in compliance with the university's regulations regarding civility. Civility is an essential ingredient for academic discourse. All communications for this course should be conducted constructively, civilly, and respectfully. Differences in beliefs, opinions, and approaches are to be expected. In all you say and do for this course, be professional. Please bring any communications you believe to be in violation of this class policy to the attention of your instructor.

Active interaction with peers and your instructor is essential to success in this online course, paying particular attention to the following:
- Unless indicated otherwise, please complete the readings and view other instructional materials for each week before participating in the discussion board.
- Read your posts carefully before submitting them.
- Be respectful of others and their opinions, valuing diversity in backgrounds, abilities, and experiences.
- Challenging the ideas held by others is an integral aspect of critical thinking and the academic process. Please word your responses carefully and recognize that others are expected to challenge your ideas. A positive atmosphere of healthy debate is encouraged.

Statement Regarding Students with Disabilities

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval, please contact DAS immediately at 541-737-4098 or at http://ds.oregonstate.edu. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Accessibility of Course Materials
All materials used in this course are accessible. If you require accommodations, please contact Disability Access Services (DAS).

Additionally, Canvas, the learning management system through which this course is offered, provides a vendor statement certifying how the platform is accessible to students with disabilities.

Expectations for Student Conduct
Student conduct is governed by the university's policies, as explained in the Student Conduct Code. Students are expected to conduct themselves in the course (e.g., on discussion boards, email postings) in compliance with the university's regulations regarding civility. To ensure compliance with this rule, discussion posts cannot be edited once posted. If you wish to edit, you may reply to yourself with your edits/missing text. This creates a permanent record of all activity/discussion in Canvas in the event that an issue requiring disciplinary action arises.

Academic Integrity
Students are expected to comply with all regulations pertaining to academic honesty. For further information, visit Student Conduct and Community Standards, or contact the office of Student Conduct and Mediation at 541-737-3656.

OAR 576-015-0020 (2) Academic or Scholarly Dishonesty:
a) Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another.
b) It includes:
   i) CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using prohibited materials and texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.
   ii) FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.
   iii) ASSISTING - helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone's grades or academic records, taking a test/doing an assignment

for someone else by any means, including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114).

    iv) TAMPERING - altering or interfering with evaluation instruments or documents.

    v) PLAGIARISM - representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

c) Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University's Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.

TurnItIn

Your instructor may ask you to submit one or more of your writings to Turnitin, a plagiarism prevention service. Your assignment content will be checked for potential plagiarism against Internet sources, academic journal articles, and the papers of other OSU students, for common or borrowed content. Turnitin generates a report that highlights any potentially unoriginal text in your paper. The report may be submitted directly to your instructor or your instructor may elect to have you submit initial drafts through Turnitin, and you will receive the report allowing you the opportunity to make adjustments and ensure that all source material has been properly cited. Papers you submit through Turnitin for this or any class will be added to the OSU Turnitin database and may be checked against other OSU paper submissions. You will retain all rights to your written work. For further information, visit [Academic Integrity for Students: Turnitin – What is it?](#)

Tutoring and Writing Assistance

[NetTutor](#) is a leading provider of online tutoring and learner support services fully staffed by experienced, trained and monitored tutors. Students connect to live tutors from any computer that has Internet access. NetTutor provides a virtual whiteboard that allows tutors and students to work on problems in a real time environment. They also have an online writing lab where tutors critique and return essays within 24 to 48 hours. Access NetTutor from within your Canvas class by clicking on the Tools button in your course menu.

The Oregon State [Online Writing Lab (OWL)](#) is also available for students enrolled in Ecampus courses.

Student Evaluation of Courses

The online Student Evaluation of Teaching system opens to students the Monday of dead week and closes the Monday following the end of finals. Students receive notification, instructions and the link through their ONID. They may also log into the system via Online Services. Course evaluation results are extremely important and used to help improve courses and the online learning experience for future students. Responses are anonymous (unless a student chooses to "sign" their comments, agreeing to relinquish anonymity) and unavailable to instructors until after grades have been posted. The results of scaled

questions and signed comments go to both the instructor and their unit head/supervisor. Anonymous (unsigned) comments go to the instructor only.