**Instructor Information**

Instructor: Dr. J. Richter  
Email: jrichte4@asu.edu  
Office Location: Wilson Hall, Room 250  
Office Hours: By Appointment and via Skype.

**Course Description:**

This course discusses the foundational ideas and theories regarding policies for science and engineering innovations in a complex and changing world. The course examines how science policy is created, how new innovations interact with existing policies, and suggestions for critical social, political, environmental, and economic factors that should be considered when developing, proposing, and implementing new policies. The foundation of this online course is comprised of talks and presentations given by policy-makers, scientists, engineers, and researchers in Washington D.C. This course offers many different points of view on how to responsibly govern new technologies and innovations, and provides students with insights into the conversations happening around policy-making.

**Course Objectives:**

- To introduce students to the fundamental theories linking the creation of public policies to the underlying scientific, technological, and political drivers, establish a solid understanding of these constructs, and apply these concepts to practical real-life experiences and examples on local, national, and international scales of governance.

- To develop understanding about the complex ways that science, technology, and engineering co-produce risk and solutions for modern social problems.

- To develop critical thinking skills and encourage students to question how scientific and technological relationships exist on local, state, regional, national and international levels, and how they originate in disparate cultural value systems.

- To develop student’s skills in oral and written communication, through group discussions, weekly assignments, and individual projects, in order to increase efficacy of student’s communication and understanding of political, scientific, and technological principles.

- To learn practical and practicable ideas and theories about engineering goals and scientific practices as they pertain to concepts of public policy.
Course Requirements:

Readings: All required readings are posted on Blackboard in the “Weekly Modules.” Please read the required readings prior to each class and have a basic understanding of the key concepts and conclusions from the readings, and be prepared to discuss them on the discussion boards and essay assignments.

Assignments:
In order to do these assignments well you must read the work closely and ask yourself questions about the work (take nothing for granted) and your comprehension of the work (don’t skip over that which you don’t immediately understand—puzzle over the material). Your ability to write well demonstrates a capacity for careful, critical reading. These necessary skills are foundational for subsequent work in analysis, synthesis, and critique—skills essential for success in college and life.

Discussion posts:
Each week, students are required to submit posts to the discussion board. There will be a question posed to the class, and your first response (of about 200 words) is due by Wednesday of that week. A follow-up post in response to another student (of about 100 words) is required by Friday.

Written Assignments:
There are several writing assignments for this course, including a weekly writing assignment consisting of a 2-page essay, and four longer papers, 4-5 pages each, during the course of the semester. All papers are formal academic papers including citations and references, and will require outside research. The quarterly papers will build on the weekly posts.

Grades: There are 350 total points in this class. The breakdown is as follows:
- Initial post to Hallway Conversations = 10 pts.
- Discussions: 10 pts each x 10 = 100 pts.
- Weekly Post: 15 pts each x 12 =120 pts
- Essays: 4 essays x 30 points each = 120 pts.

This syllabus is subject to further change or revision, as needed, to best realize the educational goals of the course. Necessary revisions will be announced with fair prior notice.

Grading scale: 87-89% B+ 73-76% C
98-100% A+ 83-86% B 70-72% C-
93-97% A 80-82% B- 60-69% D
90-92% A- 77-79% C+ 0-59% E

Course Schedule: The current schedule for the course can be found on Blackboard. This schedule includes topics and due dates. It may change, however, at the discretion of the instructor. Any changes will be announced in class and on Blackboard, and a revised schedule will be posted.

Special Accommodations: To request academic accommodations due to a disability, please contact the ASU Disability Resource Center (480.965.1234/ TDD 480. 965.9000) as soon as possible. A letter from the office will then be issued requesting specific academic accommodations be made.

Ethical Standard for the Course: Academic honesty is expected of all students in all examinations, papers, laboratory work, academic transactions and records. The possible sanctions include, but are not limited to, appropriate grade penalties, course failure (indicated on the transcript as a grade of E), course failure due to
academic dishonesty (indicated on the transcript as a grade of XE), loss of registration privileges, disqualification and dismissal. For more information, see http://provost.asu.edu/academicintegrity.

**Plagiarism:** A paper or project that bears your name is assumed to be your own original work. There is a conventional distinction between scholarship and plagiarism. *You may use words written by others in their publications or websites (for certain assignments), but only with proper attribution.* If you are quoting from a published source or a website, and the quotation is short (1-2 sentences), place it in quotation marks and cite the source in a footnote or parenthetically (a bibliography or works cited page is also a necessity). If your quote is longer, indent the quote, use single spacing, and cite the source in a footnote or parenthetically.

**SafeAssign:** The SafeAssign tool will be used on all written work to ensure that no plagiarism has occurred and that all sources are cited properly. Keep in mind this includes assignments submitted for other courses.

**Cheating:** Exams are intended to reflect your own individual comprehension of the main points and key concepts from the course. Cheating is unacceptable and will result in serious consequences, including failure of the assignment, dependent on university guidelines.

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**HSD 598 Course Schedule**

**UNIT 1: Introduction to Science Policy**

**Week 1: What is Science Policy and Why Does it Matter?**

*View:* Intro to Science Policy (Drs. Dave Guston and Dan Sarewitz)

*Readings:*


**Week 2: Governing Innovation**

*View:* The Citizen between Science and Policy: Innovation in Governance and Climate Change Resilience

*Readings:*


**Week 3: Pathways of Technology**

*View:* The Challenge of Path Dependency and the Need for Anticipatory Governance (Dr. Jamison Wetmore)

*Readings:*


**Week 4: Paper #1 due!**
UNIT 2: Engaging the Public

Week 5: Public Values and the Practice of Science

View: What If You Can’t Measure What Matters? Public Value Mapping of Science and Innovation (Dan Sarewitz) or Reinventing Climate Change

Readings:

Week 6: The Public as Part of Policy-Making

View: From Asteroid to Oceans: Using Public Engagement to Inform Policy Decisions (Ira Bennet)

Readings:
2) The Public Informing Upstream Engineering: A Participatory Technology Assessment of NASA’s Asteroid Initiative (Dave Guston)

Week 7: The Public on the Role of the Public

View: Self-Critical Public Science: How to Integrate Creativity and Responsibility (Erik Fisher)

Readings:

Week 8: Paper #2 due!

UNIT 3: Responsible Innovation

Week 9: Sociotechnical Systems and Energy Production

View: Designing Transitions in Energy Systems: The Human Dimensions (Clark Miller)

Readings:
**Week 10: Genetics and the Human Body**

*View:* Reframing the Debate Around CRISPR and Genome Editing (Emma Frow)

*Readings:*


**Week 11: Managing Risk**

*View:* Why We Need Risk Innovation (Andrew Maynard)

*Readings:*

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**Week 12: Paper #3 Due!**

**UNIT 4: International Ramifications**

**Week 13: Human Rights and Foreign Aid**

*View:* Should U.S. Foreign Assistance Be Tied to Human Rights? And Technology and Development in a Conflict Zone: War as a Prioritizing Tool (Gary Grossman)

*Readings:*


**Week 14: Science Diplomacy**

*View:* Science Diplomacy: How Can Science Help With Diplomacy - and Diplomacy Help With Science?

*Readings:*

**Week 15: Governing New Technologies on a Global Scale**

*View:* Drones and Aerial Observation: New Technologies for Property Rights, Human Rights, and Global Development

*Readings:*


Week 16: Paper #4 due!

Other Course Information and Resources:

Academic Integrity
All students are responsible for reviewing and following ASU’s policies on academic integrity: http://provost.asu.edu/academicintegrity. If you fail to meet the standards of academic integrity in any of the criteria listed on the university policy website, sanctions will be imposed by the instructor, school, and/or dean. Academic dishonesty includes borrowing ideas without proper citation, copying others’ work (including information posted on the internet), and failing to turn in your own work for group projects. Please be aware that if you follow an argument closely, even if it is not directly quoted, you must provide a citation to the publication, including the author, date, and page number. If you directly quote a source, you must use quotation marks and provide the same sort of citation for each quoted sentence or phrase. You may study for exams with other students and discuss your research paper, however, all writing that you turn in must be done independently. If you have any doubt about whether the form of cooperation you contemplate is acceptable, ask the TA or the instructor in advance of turning in an assignment. Please be aware that the work of all students submitted electronically can be scanned using SafeAssignment, which compares them against everything posted on the internet, online article/paper databases, newspapers and magazines, and papers submitted by other students.

Incompletes:
A mark of "I" (incomplete) is given by the instructor when you are otherwise doing acceptable work but are unable to complete the course because of illness or other conditions beyond your control. You are required to arrange with the instructor for the completion of the course requirements. The arrangement must be recorded using the form at http://students.asu.edu/forms/incomplete-grade-request. Students should be proactive and discuss this with their instructor and TA before the end of the semester.

Late Assignments:
No late assignments are accepted without prior consent of instructor. Advanced written or e-mailed notice that you will have to turn in an assignment late could help your cause.

Student Standards
Students are required to read and act in accordance with university and Arizona Board of Regents policies, including: The ABOR Code of Conduct: Arizona Board of Regents Policies 5-301 through 5-308: http://www.azregents.edu/policymanual/default.aspx

Student Support and Disability Accommodations
ASU offers support services through Counseling (http://students.asu.edu/counseling), the Student Success Center (https://studentsuccess.asu.edu/), and the Disability Resource Center (http://www.asu.edu/studentaffairs/ed/drc/). If you are a student in need of special arrangements we will do all we can to help, based on the recommendations of these services. For the sake of equity for all students, we cannot make any accommodations without formal guidance from these services.

Campus Resources
As an ASU student you have access to many resources on campus. This includes tutoring, academic success coaching, counseling services, financial aid, disability resources, career and internship help and many opportunities to get involved in student clubs and organizations.

• Tutoring: http://studentsuccess.asu.edu/node/24
• Financial Aid: http://students.asu.edu/financialaid
• Major/Career Exploration: http://uc.asu.edu/majorexploration/assessment
• Career Services: http://students.asu.edu/career
• Student Organizations: https://students.asu.edu/clubs/tempe