Nuclear Policy

Harris School Course #33510
Winter 2022

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Course Description

“With the unleashing of atomic energy, everything has changed save our way of thinking, and thus we drift toward catastrophe beyond comprehension.” Albert Einstein made this observation in 1953, when the United States and the Soviet Union were pitted against each other in the most dangerous arms race in history with the potential, at its peak, to destroy human civilization and lay waste to the planet. At the same time, the United States and the Soviet Union were also developing peaceful uses of nuclear energy for life-saving medical treatments and for generating electricity. While issues arising from technologies that have both military uses and civilian applications are not new, the nearly incomprehensible damage from nuclear weapons focuses the mind as few other dual-use technologies can.

This course will review the development of nuclear energy for both military and civilian uses. We will examine plans for avoiding and fighting nuclear war, as well as the effects on societies of using nuclear weapons. We will briefly review the history of the international proliferation of nuclear technology and material and explore efforts to curtail the spread of weapons. The second part of the course focuses on the development of civilian nuclear power, its benefits and risks, and on efforts to reduce accidents and dispose of nuclear waste materials. Finally, we will consider the role of citizens in policymaking.

The course is organized around in-class and recorded lectures, readings, video and podcasts (to be found on Canvas), and small group discussions in a weekly three-hour format. Each week students will submit short 500-600 word essays in response to queries from the instructor based on the readings and lectures. Essays are due by Wednesday at 5:00 pm CST following the Tuesday seminar.

Course Readings

**Required** (Please purchase the following six books.)


*The Bomb: Presidents, Generals, and the Secret History of Nuclear War*, Fred Kaplan (Simon and Schuster, 2020)
The Button: The New Nuclear Arms Race and Presidential Power from Truman to Trump, William J. Perry and Tom Z. Collina (BenBella, 2020)


Voices from Chernobyl, Svetlana Alexievich. Translated by Antonina W. Bouis (Arum Press, 1999)

Recommended


Midnight in Chernobyl, Adam Higginbotham (Simon and Schuster, 2019)

All other course readings and materials are available on Canvas or on the web and through the University of Chicago online journals library.

Consult these sites for additional information and useful analysis:


Arms Control Today at www.armscontrol.org

International Panel on Fissile Material at http://fissilematerials.org

International Atomic Energy Agency at www.iaea.org


Course Requirements

1. Participation in class discussions will count for 25% of your grade. Attending and preparing for weekly discussions is a priority.

2. Weekly short reflection essays will count for 70% of your grade.

   Each week students will write 500-600 word essays in response to a query by the instructor based on the readings and lectures. Essays will be submitted through Canvas by Wednesday at 5:00 pm CST after our Tuesday session.

3. Meeting with the instructor by zoom at least once during the quarter will count for 5% of your grade.

   The instructor will meet with each student by zoom at a mutually convenient time at least once during the course of the quarter to discuss essays, course material, and answer questions.
Grading

Class participation: 25%
Weekly essays: 70%
Zoom meeting with instructor: 5%

ADA Student Accommodations

Any student who believes they may need assistance should inform the Harris Dean of Students office by the end of the first week of class. The Dean of Students office will coordinate any student accommodations with Harris instructors.

Academic Dishonesty: Statement and Penalties

All University of Chicago students are expected to uphold the highest standards of academic integrity and honesty. Among other things, this means that students shall not represent another’s work as their own, use un-allowed materials during exams, or otherwise gain unfair academic advantage. All students suspected of academic dishonesty will be reported to the Harris Dean of Students for investigation and adjudication. The disciplinary process can result in sanctions up to and including suspension or expulsion from the University. In addition to disciplinary sanctions, I will impose a grade penalty of “F” for students who have committed academic dishonesty. The Harris policy and procedures related to academic integrity can be found at https://harris.uchicago.edu/gateways/current-students-policies. The University of Chicago Policy on Academic Honesty and Plagiarism can be found at https://studentmanual.uchicago.edu/academic/policies/academic-honesty-plagiarism/

Teaching and learning in person

This course is planned as an in-person experience, and students are expected to attend class at the Keller Center, with some exceptions as discussed below. Our practices and expectations include the following:

- We will use seating charts to facilitate any needed contact tracing. During the first two weeks of class, I will pass around a sign-in sheet during each class meeting. On the sign-in sheet, please write your name next to your seat number.
- Students must wear masks properly—covering both nose and mouth—at all times while in the classroom. Students who fail to comply will be reported to the Harris Dean of Students and UCAIR, the University’s incident reporting system for COVID-19 safety matters.
- We ask that students not eat or drink during class.
- Please display your name tent every class so that I can more easily call on you by name.
- Because instructors, too, must comply with University teaching protocols, I will wear a face mask while in the classroom. If you cannot understand me even when I repeat or “try again” to speak, I will remove my mask temporarily to clarify, as long as I remain 6 feet away from the nearest person. Please do not hesitate to ask me to repeat or restate anything that is unclear at any time.

That said, of course, public health and/or personal health circumstances vary across individual members of the University community and may change abruptly with limited notice. Students, TAs, and instructors may need to participate remotely for a short time or, in some limited instances, for the entire quarter. To guide expectations and plans, please note the following:
• If you are experiencing COVID-19 symptoms or are required to isolate, do not come to class!
  o As soon as possible, contact me or the TA by email if you cannot attend class for this reason. You should not send me medical information / doctors’ notes or the results of any COVID-19 test.
  o Students are expected to abide by the University’s COVID-19 health requirements AND its specific Protocol for Addressing Confirmed or Suspected COVID-19 Exposures. Note that the Protocol, which addresses self-monitoring, testing, and isolating requirements, represents evolving guidance and is subject to change.
  o Any member of the University community who tests positive for COVID-19 should inform the University contact tracing team at C19HealthReport@uchicago.edu.
  o Students missing class for short spells during the term are encouraged to watch class on Zoom either live or via recordings of class sessions, and otherwise participate in class as fully as possible, health permitting.

• A limited number of students may have permission to participate remotely for the entire quarter.
  o The Harris Dean of Students Office makes these determinations and informs instructors of enrolled students with permission.
  o Enrolled students with remote status are encouraged to participate in class via live streaming, watch Zoom recordings of class sessions, and otherwise participate in class as fully as possible, health permitting. We may use dual-modal instructional technology to facilitate class participation of students with remote status.

• If I find that I cannot teach in person at some point during the term, I will communicate this as soon as possible to all the relevant stakeholders, including students!
  o Health permitting, I will teach remotely via Zoom on such occasions.
  o Students can attend class in the Keller Center but would participate via Zoom on such days. Students can also attend remotely from home (or any other location that is devoid of distractions).
  o I will be in touch with the TA, HSIT, and ASA to make sure things work smoothly.

Video and Audio Recordings

By attending course sessions, students acknowledge that:
i. They will not:
   (i) record, share, or disseminate University of Chicago course sessions, videos, transcripts, audio, or chats;
   (ii) retain such materials after the end of the course; or
   (iii) use such materials for any purpose other than in connection with participation in the course.

ii. They will not share links to University of Chicago course sessions with any persons not authorized to be in the course session. Sharing course materials with persons authorized to be in the relevant course is permitted. Syllabi, handouts, slides, and other documents may be shared at the discretion of the instructor.

iii. Course recordings, content, and materials may be covered by copyrights held by the University, the instructor, or third parties. Any unauthorized use of such recordings or course materials may violate such copyrights.

iv. Any violation of this policy will be referred to the Area Dean of Students.
Course Outline and Readings

Week 1: Introduction: Origins of Nuclear Energy

View the documentary *The Day After Trinity* by Jon Else.

https://www.youtube.com/watch?v=xosmgrYF9K8


For history about the origins of the atomic bomb at the University of Chicago, take a tour of the Main Quad and the “Sites of the Manhattan Project.” Use the “Ranger in Your Pocket” feature at the Atomic Heritage Foundation and find the University of Chicago at www.atomicheritage.org

**Query:** What considerations went into the decision to drop atomic bombs on Hiroshima and Nagasaki at the end of World War II?

Week 2: Developing Nuclear Bombs

Fred Kaplan, *The Bomb*, entire


Listen to *At the Brink*, Season 1, Episode 4, Modernizing Doomsday: The True Cost of Our Nuclear Arsenal (podcast)

**Query:** How did the massive destruction of nuclear bombs change war-fighting strategy? If nuclear bombs are so destructive, why did the United States and the Soviet Union make so many?

Week 3: Effects of Using Nuclear Weapons

John Hersey, *Hiroshima*, entire

*At the Brink*, Episode 8, Hibakusha: Survivors of the Bomb (podcast)


Alex Wellerstein, Nukemap, http://nuclearsecrecy.com/nukemap/

**Query:** What are the effects of nuclear weapons on people, cities and the environment? Given the destruction brought about by nuclear weapons, under what conditions should they be used?
Week 4: Deterring and Avoiding Nuclear War

Siracusa, *Nuclear Weapons*, pp. 60-117


*At the Brink*, Season 1, Episode 1, “Seek Immediate Shelter: Nuclear False Alarms” (podcast)

Query: How does nuclear deterrence work? What are the consequences if deterrence fails?

Week 5: Reducing Risks from Nuclear Weapons

Perry and Collina, *The Button*, entire


Sanders-Zakre, Alicia, “Nuclear Weapons Ban Treaty to Enter into Force,”


Erasto, Tytti, “The NPT and the TPNW: Compatible or Conflicting Nuclear Weapons Treaties?”
https://www.sipri.org/commentary/blog/2019/npt-and-tpnw-compatible-or-conflicting-nuclear-weapons-treaties

Listen to *At the Brink*, Season 1, Episode 2: The Biscuit and the Football (podcast)


Query: Should political leaders rely on deterrence to prevent nuclear war, but risk nuclear weapons launch due to miscalculation, misperception, or accident; or should they reduce reliance on nuclear weapons by strengthening treaties and international cooperation, but risk the acquisition and use of these weapons by outlaw countries?
Week 6: Democracy and the Bomb


Query: What role should citizens have in policymaking about nuclear weapons? Is the sole authority of the U.S. president to launch nuclear weapons compatible with democratic governance?

Week 7: Spreading Nuclear Technology/Developing Nuclear Power

Ferguson, *Nuclear Energy*, pp. 3-52


Query: How does the spread of civilian nuclear power plants around the world contribute to the proliferation of nuclear weapons? What have governments done to limit the proliferation of nuclear weapons while encouraging the spread of peaceful nuclear power?

Week 8: Benefits and Risks of Nuclear Energy

Ferguson, *Nuclear Energy*, pp. 53-85


Elisabeth Eaves, *Voices of Chernobyl*, entire

Query: Do the risks of building more nuclear power plants to provide energy outweigh the risks? Will new safer plant designs reduce the costs and the risk of accidents enough to make nuclear power acceptable to the public?

Week 9: Controlling Nuclear Technologies and Materials


Listen to At the Brink, Season 1, Episode 6, The Iran Deal: Blocking a Persian Bomb (podcast)

Query: Should countries build more nuclear power plants to provide a major energy source without further disrupting the climate, but risk more accidents and proliferation of nuclear weapons to more countries; or should they phase out nuclear power to prevent accidents and the further spread of nuclear weapons, but risk continued climate change?

Week 10: Public Opinion and Nuclear Policy


Query: What role should citizens have in decisions about nuclear power? What information would they need to participate in policymaking?