

Nuclear Weapons Syllabus

This course is intended to provide you with an overview of the nuclear security landscape. It will offer you insights into the history of nuclear weapons use, the science behind the atomic bomb, the potential effects of nuclear use, nuclear weapons as an intersectional issue, and more. By the end of this course, the hope is that you have developed a deeper understanding of the complex problems that nuclear weapons pose and that you have knowledge and resources that will allow you to further engage with these issues if you so choose.

WEEK 1: NUCLEAR WEAPONS AS AN EXISTENTIAL THREAT

“The safer you assume the system to be, the more dangerous it is becoming.”

- Eric Schlosser, journalist and author

Over the course of week 1, we aim to introduce you to the nuclear weapons system and the existential threat it poses to humanity. The system is riddled with risk and has deep-seated mechanisms for resisting change. Whether resulting from an accident, a miscalculation, or a deliberate strike, nuclear-weapons use would have devastating, long-lasting, and potentially irreversible consequences for humanity.

READ + WATCH:

- [Eliminating the Existential Threat of Nuclear Weapons](#)
 - Watch from 1:40 - 11:07
- [The Myth of “Just” Nuclear Deterrence: Time for a new Strategy to Protect Humanity from Existential Risk](#)
- [H2045: Nuclear Weapons and Systems Thinking](#)
- [How to stop rolling the dice on the destruction of human civilization](#)
- [Joan Rohlfing on how to avoid catastrophic nuclear blunders](#)
 - Read or listen to the section titled *The chances of humanity bouncing back after nuclear war*
- [Technological developments that could increase risks from nuclear weapons: A shallow review](#)

DISCUSSION QUESTIONS:

1. What were your biggest takeaways from the content for this week? What did you learn that you didn't know previously?
2. Do you think most people view the use of a nuclear weapon as one of the biggest threats facing humanity? Do you? Why or why not?

WEEK 2: ATOMIC BOMBS 101 & THE NUCLEAR FUEL CYCLE

“The unleashed power of the atom has changed everything save our modes of thinking and we thus drift toward unparalleled catastrophe.”

- Albert Einstein

In week 2, we focus on the technical aspects of nuclear materials, aiming to provide you with a basic understanding of how nuclear weapons work. We'll talk about nuclear energy, the nuclear fuel cycle, and the basic science behind the nuclear bomb.

READ + WATCH:

- [Nuclear 101: How Nuclear Energy and Nuclear Weapons Work](#)
- [Science Behind the Atom Bomb](#)
- [Nuclear Fuel Cycle Overview](#)
- [The Nuclear Fuel Cycle and the Proliferation “Danger Zone”](#)
 - Skim the first sections and read the *Conclusion and Policy Implications* section
- [Nuclear Weapons Technology 101](#)
 - Recommended for further reading

1. What was your biggest takeaway from the content this week? Did you read anything that surprised you or made you want to learn more?
2. How does your understanding of the nuclear fuel cycle influence your thinking on nuclear security?
3. How do you think an increased reliance on nuclear energy might influence nuclear security? Brainstorm potential solutions that may help mitigate such risk.

WEEK 3: NUCLEAR WINTER AND BEYOND

“Although it can be distressing to consider the consequences of a large-scale catastrophe, decisions need to account for all potential consequences, to minimize the risk. Politicians in government and the public need to be better aware of the global catastrophic risks inherent within nuclear postures as nuclear risk has risen significantly in 2022.”

- Paul Ingram, Centre for the Study of Existential Risk

This week, we focus on the cascading, long-term, and potentially devastating consequences of nuclear war. Although *nuclear winter* has traditionally been the umbrella term used to describe these consequences, scientists also use terms like [nuclear autumn](#) to differentiate between the severity of potential effects. Given the globalized and interconnected world we live in, this

chapter also looks at the potential impact on critical infrastructure, supply chains, and the global economy.

READ + WATCH:

- [Plan A](#)
- [Nowhere to Hide: How a Nuclear War Would Kill You](#)
- [A New Ocean State After Nuclear War](#)
- [No Sunny Days For A Decade, Extreme Cold And Starvation: 'Nuclear Winter' And The Urgent Need For Public Education](#)
- [Nuclear war would cause yearslong global famine](#)
- [Depicting Nuclear Risk Accurately: The Likely Global Effects of Nuclear Weapons in the 21st Century](#)
- [How catastrophes impact access to food](#)
- [Public Awareness of nuclear winter and implications for escalation control](#)
 - Recommended further reading
- For a deep dive into the science, access a comprehensive reading list on the global and long-term effects of nuclear use [here](#).

DISCUSSION QUESTIONS:

1. After completing these readings, what do you see as the most devastating effect of nuclear use?
2. Imagine a world post-nuclear use. What is the best-case scenario? What is the worst case?
3. Why do you think so few people seem to think about nuclear war as an existential threat versus, for example, climate change? What do you think could increase public awareness about this issue?
4. What, in your opinion, are the most pressing social consequences of this type of environmental devastation? Can society rebuild after something like this? What would that process look like?

WEEK 4: NUCLEAR RISK: AN INTERSECTIONAL ISSUE

“Jobs, racial equality, climate change, war, class, gender, and nuclear weapons were all connected and part of the same fight: universal human rights, with the most important human right being the freedom to live...live free from the fear of nuclear war.”

- Vincent Intondi, professor of history and director of the Institute for Race, Justice, and Civic Engagement at Montgomery College

This week, we discuss some of the many ways in which nuclear issues intersect with social issues and identity. We explore the fact that Indigenous communities and communities of color

are disproportionately subject to the consequences of the continued existence of nuclear materials, and that women and girls are impacted in unique ways by current discourse around nuclear weapons. We also talk about the history of disarmament activism.

READ + WATCH:

- [Urgent Conversations about Nuclear Weapons, the Climate Emergency, Racial and Economic Justice](#)
- [Reflections on Injustice, Racism, and the Bomb](#)
- [Notes on Nuclear Weapons & Intersectionality in Theory and Practice](#)
 - Required: *Nuclear Weapons, colonialism, and racism* section
- [Emerging Environmental Justice Issues in Nuclear Power and Radioactive Contamination](#)
- [Gender and Nuclear Weapons](#)
- [Sex and Death in the Rational World of Defense Intellectuals](#)
 - Read introduction & conclusion fully; skim the rest

DISCUSSION QUESTIONS:

1. Why is it important to consider nuclear security through an intersectional lens? What do we miss when we fail to differentiate how nuclear issues affect different groups?
2. What is traditional discourse surrounding nuclear weapons missing? Why is it more effective when discourse is inclusive?
3. How should our understanding of nuclear security as an intersectional issue influence us in the process of creating solutions?

WEEK 5: ARMS CONTROL & NON-PROLIFERATION TREATIES

In week 5, we provide an overview of past and current arms control treaties to help you understand the history of diplomacy around issues of nuclear risk. We will explore certain treaties more in-depth, discussing their effectiveness and thinking about future steps that could be taken to further mitigate risk.

READ + WATCH:

- [Non-Proliferation Regime: What Is It? Why Is It Important?](#)
- [Expandable List of Arms Control Treaties](#)
- [NTI Treaties and Regime interactive page](#)
- [Treaty on the Non-Proliferation of Nuclear Weapons \(NPT\)](#)
- [The Treaty on the Prohibition of Nuclear Weapons At A Glance](#)
- [Comprehensive Test Ban Treaty at a Glance](#)
- [The New START Treaty: Central Limits and Key Provisions](#)
 - Required: Summary, Introduction, and Background
- [Arms Control and Nonproliferation: A Catalog of Treaties and Agreements](#)

- Recommended for further reading
- [Countdown to Zero](#)
- Recommended for further learning

DISCUSSION QUESTIONS:

1. What role do treaties play in mitigating nuclear risk? What are their benefits? What are their drawbacks?
2. How can treaties serve to include or alienate certain stakeholders in the dialogue around nuclear security? How can treaties be used as a tool to empower disenfranchised voices?
3. How does the TPNW help us imagine a world without nuclear weapons? Is that effective? Why or why not?

WEEK 6: CLOSE CALLS

“We escaped the Cold War without a nuclear holocaust by some combination of skill, luck, and divine intervention, and I suspect the latter in greatest proportion.”

- George Lee Butler, former commander in chief, United States Strategic Command

In week 6, we explore some of the many instances in which nuclear catastrophe was narrowly averted. Due to miscalculations, high tensions, and simple human error, the world has come dangerously close to a global nuclear war.

READ + WATCH:

- [I’ve studied nuclear war for 35 years - you should be worried.](#)
- [World War Three, By Mistake](#)
- [Cuban missile crisis, 60 years on: new papers reveal how close the world came to nuclear disaster](#)
- [The night the world almost ended - BBC Reel](#)
- [Close Calls with Nuclear Weapons - Fact Sheet](#)

DISCUSSION QUESTIONS:

1. Were you surprised by any of the scenarios that you learned about above? Why or why not?
2. In which instance do you think we came closest to nuclear use? What do you think the consequences of such an action would have been?
3. What are solutions to this problem of “human error”? How can we work to prevent nuclear use in periods of high tension and miscommunication?

WEEK 7: THE CURRENT STATE OF NUCLEAR WEAPONS

“Major multilateral nuclear diplomacy will be needed precisely because of a dire reality the Ukraine crisis underscores: The existential threat posed by nuclear weapons endures even as political circumstances change.”

- Bulletin of the Atomic Scientists

In week 7, we discuss the state of nuclear weapons today. We cover the distribution of nuclear weapons throughout countries, as well as some of the most pressing security issues of the moment. (NOTE - The nuclear security landscape can evolve quickly. There may be new developments that we haven't yet had the chance to include in this syllabus.)

READ + WATCH:

- [Status of World Nuclear Forces](#)
- [The NTI Nuclear Security Index](#)
- [An exceedingly dangerous nuclear situation](#)
- [North Korea: 6 Experts on How We Can Solve the Problem](#)
- [Iran's nuclear program is advancing. So too should negotiations.](#)
- [Looking beyond the NPT: Next steps in arms control and disarmament](#)
- [Last U.S.-Russia Nuclear Arms Deal Risks Slow, Dangerous Death Over Ukraine](#)
- [Chinese Nuclear Arsenal Exceeds 400 Warheads](#)
- [The Biden Administration's New Strategy for Countering Weapons of Mass Destruction Terrorism](#)
 - Recommended further learning

DISCUSSION QUESTIONS:

1. Taking into account the content for this week as well as everything you've learned over the past seven weeks, what do you believe is our biggest challenge in the realm of nuclear security? Why?
2. How do you think the nuclear security threat will evolve in the upcoming weeks? What about months? How can our efforts be proactive rather than reactive?
3. Thinking ahead to next week... What is the role of governments in mitigating nuclear security risks? Policymakers? Academics? Teachers? Artists? Students?

WEEK 8: CURRENT ADVOCACY EFFORTS (WHERE DO WE GO & WHAT CAN YOU DO?)

“What would be possible if we broke the stranglehold that nuclear weapons have on our imaginations, our policies, and our shared future?”

- Horizon 2045

For our final week, we focus on the future. We'll imagine what a world without nuclear weapons looks like, discuss how we might get there, and determine how you can best help. We also offer lists of organizations that are currently working to ensure nuclear security and resources that will allow you to learn more about nuclear issues.

READ + WATCH:

- [Nuclear Weapons Solutions](#)
- [Remarks By President Barack Obama In Prague](#)
- [A World Free of Nuclear Weapons](#)
- [Horizon 2045: Theory of Change](#)
 - Required: pages 8-16

SITES/ORGS TO EXPLORE:

- [Nuclear Threat Initiative \(NTI\)](#)
- [Global Zero](#)
- [Outrider](#)
- [WCAPS](#)
- [Beyond the Bomb](#)
- [Carnegie Endowment for International Peace: Nuclear Policy Program](#)
- [Center for Arms Control & Non-Proliferation](#)
- [Ploughshares Fund](#)

TO LEARN MORE:

- [NTI's Education Center](#)
- [Learn WMD](#)

DISCUSSION QUESTIONS:

- What does a world without nuclear weapons look like? Why is it important to be able to imagine this world?
- How do you want to be involved in work related to these issues going forward? How can you use your own skills and interests to contribute to peace and nonproliferation?