

# IR 4198 - Nuclear Proliferation and International Politics

Eliza Gheorghe, Ph.D.

Fall, 2021-2022

Lecture Hours: Mondays, 13:30-15:20

Class Discussion: Thursdays, 08:30-10:20

Office Hours: Wednesdays, 15:30-17:30

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Class Room: A-331

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By appointment/Online

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## Course Description

How did nuclear weapons change our world? What role do nuclear weapons play in contemporary international politics? How can the international community meet the dangers posed by these weapons? To help students understand the impact of the atomic bomb on our world from 1945 to the present, this course will look at why countries acquire nuclear weapons, how they build them, under which circumstances nuclear weapons have been used and how they have been used in military strategy. We will also explore the efforts of countries that tried to acquire nuclear weapons but failed, and analyze a variety of counter-proliferation policies. We also examine contemporary topics such as nuclear trafficking and the push for global nuclear disarmament. Drawing on a variety of primary and secondary sources, this course provides students with a broad understanding of the changes brought about in international politics by the most powerful weapons built by man.

## Class Structure

The course consists of conventional lectures and class discussions. Student performance will be assessed on the basis of class participation, a mid-term examination, a research paper, and a final examination (see below).

## Learning Objectives

Beyond contributing to the general development of students' intellectual maturity and abilities, the more specific objectives of the course include developing students'

1. substantive knowledge of central aspects of nuclear politics;
2. ability to understand and evaluate diverse perspectives and views regarding the peaceful and military uses of the atom;
3. ability to conduct social science research, including the comprehension of central concepts and employment of key methods of social inquiry and historical research;
4. ability to apply the appropriate theoretical knowledge and problem-solving skillset to past and present world events.

## Course Requirements

Students are expected to do the required reading prior to class and be prepared for the discussions during the lecture. The assessment will be based on class participation, mid-term exam, research paper, and final exam.

### Preparation:

In addition to the readings assigned every week, students are required to subscribe to the following free newscasts for the entire duration of the course to stay abreast of the latest developments and analyses on nuclear-related issues. Students are strongly encouraged to continue their subscriptions after the course ends.

- **Proliferation News** from the Carnegie Endowment for International Peace.  
You can subscribe at <https://carnegieendowment.org/publications/pronews/>
- **Nuclear Roundup** from the Bulletin of the Atomic Scientists.  
You can subscribe at <https://thebulletin.org/nuclear-roundup/>

### Participation:

You are encouraged to speak your mind and ask questions. Please be polite to and respectful of the other students. Harassment and rude behavior will not be tolerated.

### Final examination requirement:

In order to qualify for the final examination, a student must have obtained at least 50 points on the mid-term examination. Students not qualifying for the final examination based on these requirements will receive the grade FZ after the last day of classes. Note that the final examination requirements are absolute in the sense that no student should try negotiating them.

## Assessments

### Participation (20%)

Students are expected to participate actively in class discussions throughout the semester. We will have in-class discussions revolving around key controversies on the week's theme. Students will take and defend positions, based on the concepts they have been learning as well as on evidence from the course material and real life events. The aim of these discussions is: 1) improving students' argumentation skills; 2) reviewing the concepts presented in class; 3) encouraging students to critically assess and make connections between concepts and real events.

Students who cannot participate in class discussions because of the ongoing pandemic can submit high-quality answers (200 words) to discussion questions posted on Moodle. These Moodle discussion questions will draw on either the weekly readings or on a current issue that is relevant for the weekly topic covered in class.

### Mid-term Examination (30%) - Take Home

The midterm exam will consist of short essay questions (300-400 words). Students will have 24 hours to answer 2 out of 3 questions and submit them to Moodle.

The questions will test students' understanding of key concepts and issues that are discussed during the lectures and required readings. When writing their answers, students are expected to refer to/provide the core arguments and concepts. The questions would require the explanation of the core reasoning behind a position/concept (why or how). Consequently, full points will be given to the answers that directly engage what we have discussed in the class and what is written in the required readings.

### Research Paper (20%)

The research paper will be a 10-12-page paper on a topic related to nuclear proliferation and international politics. The paper format should respect the following specifications: A4, Times New Roman, 12 pt, 1.5 space, 2.5 cm from top, left, right and bottom margins. The bibliography does not count toward the 10-12 pages to be submitted.

The research paper is expected to display the basic pattern of an essay, present a coherent and well-thought argument and show an understanding of the subject matter. Evaluation will be based on the strength of the argumentation and the clarity of the writing.

Citation Style: Students should use Chicago Manual of Style 16th Edition in their research papers. Please provide the full note in the footnotes and provide a bibliography at the end of the paper. Using of a reference management software, such as Zotero (Open Source), is highly recommended.

Research Proposal: To help students prepare their research paper, they will have to submit a proposal early in the semester. Proposals must include a research question, a short explanation of why the selected topic is important, and an outline (presenting the main argument and supporting evidence). Proposals will be submitted through Moodle and will be checked with Turnitin. Topics must be approved by the instructor. If the proposed topic is not approved, students had to find a new topic within a week of receiving the feedback. The deadline for proposals is October 27, 2021 at 23:59.

Deadline and late submissions: Research papers are due on January 3, 2022 at 23:59. Students will submit the research papers through Moodle. The research papers will be checked with Turnitin. Late submissions, unless having a justifiable and valid excuse, will be penalized by 10% per day. Papers will not be accepted after 1 week.

### Final Examination (30%) - Take Home

The final examination may consist of short answer and/or essay questions. The exam will cover all the topics since the beginning of the semester.

Academic integrity and honesty: Bilkent University has strict rules concerning students who cheat or plagiarize. The Academic Integrity Guidelines for Students are available here:

[https://w3.bilkent.edu.tr/web/provost/SAIC\\_Students.pdf](https://w3.bilkent.edu.tr/web/provost/SAIC_Students.pdf). Please read them carefully.

Please be aware that a student who reproduces exactly the words, opinions or ideas of someone else without giving the appropriate source (e.g., the textbook, assigned readings, websites, other materials) will receive **FZ** for that piece of work and may be liable for further disciplinary action (e.g. suspension from the university for between one week to one month); and, in cases where a student submits work which was composed by another student, both students are liable to suspension of between one or two semesters. All written assignments will be checked with Turnitin.

### Grading

Assignment	Percentage of Grade	Due date
Participation	20%	N/A
Midterm Exam	30%	November 11
Research paper	20%	January 3
Final Exam	30%	TBD

Letter Grade	Quality-point Equivalents	Number Grade Range
A\A+	4.00	95-100
A-	3.70	90-94
B+	3.30	85-89
B	3.00	80-84
B-	2.70	75-79
C+	2.30	70-74
C	2.00	65-69
C-	1.70	60-64
D+	1.30	55-59
D-	1.00	50-54
F	0.00	0.49
FX	0.00	
FZ	0.00	

## General Rules

- Student preparation in the form of reading the assigned literature before each class is a course requirement.
- You are responsible for all the topics covered, even if you are absent in the lectures.
- Playing with/on your phones is strictly prohibited during the lecture and the discussion hour. If students are caught playing with their phones more than three times, they will be asked to leave the classroom.
- Inquiries will be answered within three business days. If not answered, please assume that your email has been marked as spam. In this case, please inform the lecturer after the class. Depending on the urgency, the response time could be shorter.
- If you are late to the class less than or equal to 15 minutes, please do not hesitate to enter. However, please be polite and try not to disturb the ones in the class.
- If you are late more than 15 minutes, please wait until the recess.
- If you would like to leave the class early, please wait until the recess unless it is an urgent matter.
- If you have any problems or questions concerning the course, please do not hesitate to come to my office hours.
- Bilkent University is committed to fundamental values necessary to research, academic excellence, the pursuit of learning, and a culture of integrity. These include honesty, trust, fairness, respect, and responsibility among all members of the University community.
- If students wish to learn more about their grades, they will make an appointment with the professor using the link below and discuss these issues during office hours.
- Students' emails asking for higher grades will be ignored. All objections to midterm/final grades will be dealt with during office hours. Any form of harassment related to grades is liable for disciplinary action.
- Make-ups will be arranged for students who are ill at the time of an examination. In order to qualify for a make-up, students must provide a medical report for the day of the examination. The report must be approved by the Bilkent Health Centre, and submitted to the faculty in accordance with formal procedures. Note that make-ups will be arranged as soon as possible after the time of the original examination.
- It is your responsibility to check emails regularly. When course announcements are sent via email, I assume that you read it.
- I strongly encourage you to come see me during office hours and ask me questions about topics that are unclear. Please schedule your office hour appointment here:  
<https://calendly.com/egheorghe/15min>.

## Course Materials

There is no required textbook for this course, but we will use several chapters from

Charles D. Ferguson, *Nuclear Energy: What Everyone Needs to Know* (Oxford; New York: Oxford University Press, 2011).

The book is uploaded on Moodle and students are expected to read it.

All journal articles are available online in databases accessible through the Bilkent University Library. You are responsible for downloading them.

## Schedule

The schedule is tentative and subject to change.

### Week 01, 09/20 - 09/24: Introduction

Discussion of the class requirements and the syllabus

### Week 02, 09/27 - 10/01: Fundamentals

Introduction to the Technology of Nuclear Weapons

Required readings:

Charles D. Ferguson, *Nuclear Energy: What Everyone Needs to Know* (Oxford; New York: Oxford University Press, 2011), Chapter 1 - Fundamentals.

Optional readings:

Donald MacKenzie and Graham Spinardi, "Tacit Knowledge, Weapons Design, and the Un-invention of Nuclear Weapons," *American Journal of Sociology* 101, 1 (1995): 44-99,

<https://www.jstor.org/stable/2782506>.

### Questions:

- What is 'radioactivity'?
- What is a fission chain reaction?
- What is the nuclear fuel cycle?

**Week 03, 10/04 - 10/08: Energy Security**

Required readings:

Charles D. Ferguson, *Nuclear Energy: What Everyone Needs to Know* (Oxford; New York: Oxford University Press, 2011), Chapter 2 - Energy Security and Costs of Building Power Plants.

Optional readings:

Steven E. Miller and Scott D. Sagan, "Nuclear Power without Nuclear Proliferation?," *Daedalus* 138, no. 4 (2009): 7-18.

Matthew Fuhrmann, "Splitting Atoms: Why Do Countries Build Nuclear Power Plants?," *International Interactions* 38, no. 1 (January 1, 2012): 29-57.

**Questions:**

- What is energy security?
- How does a nuclear reactor generate electricity?
- How do the costs of nuclear plants compare to other types of power plants?

**Week 04, 10/11 - 10/15: Nuclear Safety**

Required readings:

Charles D. Ferguson, *Nuclear Energy: What Everyone Needs to Know* (Oxford; New York: Oxford University Press, 2011), Chapter 5 - Safety.

Sonja D. Schmid, *Producing Power: The Pre-Chernobyl History of the Soviet Nuclear Industry* (Cambridge, Massachusetts: The MIT Press, 2015), Chapter 5 - Chernobyl: From Accident to Sarcophagus.

Optional:

Watch the *Chernobyl* series on HBO.

**Questions:**

- What is nuclear safety?
- How did the Chernobyl accident happen?
- What impact did the Chernobyl accident have on international politics?

**Week 05, 10/18 - 10/22:** Proliferation and the Demand for Nuclear Weapons

Required readings:

Charles D. Ferguson, *Nuclear Energy: What Everyone Needs to Know* (Oxford; New York: Oxford University Press, 2011), Chapter 4 - Proliferation.

Scott D. Sagan, "Why Do States Build Nuclear Weapons?: Three Models in Search of a Bomb," *International Security* 21, 3 (1996/1997): 54-86, <https://www.jstor.org/stable/2539273>.

Optional readings:

Jacques E. C. Hymans, *The psychology of nuclear proliferation: Identity, emotions and foreign policy* (Cambridge University Press, 2006), Chapter 2.

Etel Solingen, "The political economy of nuclear restraint," *International Security* 19, 4 (1994): 126-169, <https://www.jstor.org/stable/2539198>.

**Questions:**

- What is nuclear proliferation?
- Why do countries want nuclear weapons?
- Which countries have had nuclear weapons?
- Which psychological factors are likely to affect nuclear proliferation and how?
- What are international regimes and what is their impact on proliferation?

**Week 06, 10/25 - 10/29:** How Do Countries Get Nuclear Weapons?

Required readings:

Eliza Gheorghe, "Proliferation and the Logic of the Nuclear Market," *International Security*, 43, 4 (2019): 88-127, <http://bit.ly/Vol43Issue4InternationalSecurity>.

Optional readings:

R. Scott Kemp, "The Nonproliferation Emperor Has No Clothes. The Gas Centrifuge, Supply-Side Controls, and the Future of Nuclear Proliferation," 38, 4 (2014), 39-78, <http://bit.ly/2mwTZjg>.

**Questions:**

- Which pathways can states take to acquire nuclear weapons?
- How does the nuclear market facilitate proliferation?



- Which systemic factors are likely to shape nuclear proliferation?
- Why would international assistance hamper the pursuit of nuclear weapons?
- Are countries better off trying to acquire nuclear weapons on their own?

**Week 07, 11/01 - 11/05: How Do Countries Use Nuclear Weapons?**

Required readings:

Henry L. Stimson, "The Decision to Use Nuclear Weapons", *SAIS Review*, 5, 2 (1947): 1-15, <https://muse.jhu.edu/article/435287/summary>.

Hibiki Yamaguchi, Fumihiko Yoshida, and Radomir Compel, "Can the Atomic Bombings on Japan Be Justified? A Conversation with Dr. Tsuyoshi Hasegawa," *Journal for Peace and Nuclear Disarmament* 2, no. 1 (January 2, 2019): 19-33, <https://doi.org/10.1080/25751654.2019.1625112>.

Optional readings:

Martin Sherwin, *A World Destroyed: Hiroshima and Its Legacies* (Stanford University Press, 2003).

Samuel J. Walker, "Recent Literature on Truman's Atomic Bomb Decision: A Search for Middle Ground," *Diplomatic History*, 29, 2 (2005): 311-334, <https://doi.org/10.1111/j.1467-7709.2005.00476.x>.

Nina Tannenwald, "Stigmatizing the Bomb: Origins of the Nuclear Taboo," *International Security*, 29, 4 (2005): 5-49, <https://www.jstor.org/stable/4137496>.

**Questions:**

- What were the justifications for attacking Hiroshima and Nagasaki with atomic weapons?
- How did President Truman take the decision to use atomic weapons?
- Why have nuclear weapons not been used since 1945?

**Week 08, 11/08 - 11/12: Nuclear Deterrence and the Nuclear Revolution**

Required readings:

Kenneth Waltz and Scott D. Sagan, *The Spread of Nuclear Weapons: An Enduring Debate* (WW Norton, 2013), Chapter 1.

Albert Wohlstetter, "The Delicate Balance of Terror", *Foreign Affairs*, 37, 2 (1959): 211-234, <https://www.jstor.org/stable/20029345>.

Alexandre Debs, *How Could States Use Nuclear Weapons? Four Models after the Bomb*, manuscript, October 6, 2021.

Optional readings:

Robert Jervis, *The Meaning of the Nuclear Revolution: Statecraft and the Prospect of Armageddon* (Cornell University Press, 1989), Chapter 1.

**Questions:**

- Why does Waltz argue that nuclear weapons stabilize international politics?
- What is the nuclear deterrence?
- What is MAD?
- What is the nuclear revolution?
- Which phenomena in international affairs defy the logic of the nuclear revolution?

**Week 09, 11/15 - 11/19:** The Nuclear Balance and Crisis Outcomes

Required readings:

Matthew Kroenig, "Nuclear Superiority and the Balance of Resolve: Explaining Nuclear Crisis Outcomes," *International Organization*, 67, 1 (2013): 141-171, <https://www.jstor.org/stable/43282155>.

Todd S. Sechser and Matthew Fuhrmann, *Nuclear Weapons and Coercive Diplomacy* Cambridge University Press, 2017), Chapter 2.

Optional readings:

Robert Powell, "Nuclear Brinkmanship, Limited War, and Military Power," *International Organization*, 69, 3 (2015): 589-626, <https://doi.org/10.1017/S0020818315000028>.

**Questions:**

- What is nuclear superiority and how does it affect crisis outcomes?
- What do recent theories about nuclear superiority tell us about the nuclear revolution argument?
- What is the stability-instability paradox and how does it apply to the area of nuclear weapons?

**Week 10, 11/22 - 11/26: Deterrence Failure and Nuclear War**

Required readings:

Kenneth Waltz and Scott D. Sagan, *The Spread of Nuclear Weapons: An Enduring Debate* (WW Norton, 2013), Chapter 2.

Optional readings:

Paul J. Bracken, *The Command and Control of Nuclear Forces* (Yale University Press, 1983), Chapter 1.

Barry R. Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks* (Cornell University Press, 1991), Chapter 1.

Bruce G. Blair, *The Logic of Accidental Nuclear War* (Brookings Institution Press, 1993), Chapter 1.

**Questions:**

- Which factors can lead to deterrence failure?
- What is escalation dominance and how can it be achieved?
- What is inadvertent nuclear war?
- What is accidental nuclear war?

**Week 11, 11/29 - 12/03: Stemming Proliferation: Alliances and the Nuclear Umbrella**

Required readings:

Nuno P. Monteiro and Alexandre Debs, "The Strategic Logic of Nuclear Proliferation," *International Security* 39, no. 2 (October 1, 2014): 7-51, [https://doi.org/10.1162/ISEC\\_a\\_00177](https://doi.org/10.1162/ISEC_a_00177).

Optional readings:

Philipp C. Bleek and Eric B. Lorber, "Security Guarantees and Allied Nuclear Proliferation," *Journal of Conflict Resolution*, 58, 3 (2014): 429-454, <https://doi.org/10.1177/0022002713509050>.

Matthew Fuhrmann, and Todd S. Sechser, "Signaling Alliance Commitments: Hand-Tying and Sunk Costs in Extended Nuclear Deterrence," *American Journal of Political Science*, 58, 4 (2014): 919-935, <https://www.jstor.org/stable/24363534>.

Alexander Lanoszka, *Atomic Assurance: The Alliance Politics of Nuclear Proliferation* (Cornell University Press, 2018).

Lauren Sukin, "Credible Nuclear Security Commitments Can Backfire: Explaining Domestic Support for Nuclear Weapons Acquisition in South Korea," *Journal of Conflict Resolution* 64, no. 6 (July 2020): 1011-42, <https://doi.org/10.1177/0022002719888689>.

**Questions:**

- What is the nuclear umbrella and how does it work?
- When do protégés trust the superpower nuclear umbrella?
- When does the nuclear umbrella make protégés more aggressive?
- How can superpowers prevent moral hazard?
- What is 'credibility' and what role does it play in proliferation dynamics?

**Week 12, 12/06 - 12/10: Nuclear Rollback: Preventive Attacks**

Required readings:

Sarah E. Kreps and Matthew Fuhrmann, "Attacking the Atom: Does Bombing Nuclear Facilities Affect Proliferation?," *Journal of Strategic Studies* 34, 2 (2011): 161-187, <https://doi.org/10.1080/01402390.2011.55902>.

Optional readings:

Muhammet A. Bas and Andrew J. Coe, "A Dynamic Theory of Nuclear Proliferation and Preventive War," *International Organization*, 70, 4 (2016): 655-685, <https://doi.org/10.1017/S0020818316000230>.

Malfrid Braut-Hegghammer, "Revisiting Osirak: Preventive Attacks and Nuclear Proliferation Risks," *International Security*, 36, 1 (2011): 101-132, <https://www.jstor.org/stable/41289690>.

**Questions:**

- Do military strikes on nuclear facilities stop proliferation?
- Which policy-making bodies should be targeted?
- How can the international community avoid the "rally around the flag" effect in the attacked country?
- Which international institutions should be responsible for punishing proliferators?

**Week 13, 12/13 - 12/17: Counterproliferation and Deproliferation**

Required readings:

Or Rabinowitz and Nicholas L. Miller, "Keeping the Bombs in the Basement: U.S. Nonproliferation Policy toward Israel, South Africa, and Pakistan," *International Security*, 40, 1 (2015): 47-86, <http://bit.ly/2mwV7U2>.

Mariana Budjeryn, "The Power of the NPT: International Norms and Ukraine's Nuclear Disarmament," *Nonproliferation Review*, 22, 2 (2015): 203-237, <https://doi.org/10.1080/10736700.2015.1119968>.

Optional readings:

Peter Liberman, "The rise and fall of the South African bomb," *International Security*, 26, 2 (2001): 45-86, <https://www.jstor.org/stable/3092122>.

**Questions:**

- What is counterproliferation?
- What is deproliferation?
- Under which circumstances can nuclear reversal occur?
- What is the role of norms in the denuclearization of Ukraine, Kazakhstan, and Belarus?
- What is the role of superpower nonproliferation policy in reversing the nuclear tide?

**Week 14, 12/20 - 12/24: Nuclear Security**

Required readings:

Charles D. Ferguson, *Nuclear Energy: What Everyone Needs to Know* (Oxford; New York: Oxford University Press, 2011), Chapter 6 - Physical Security.

Alexander H. Montgomery, "Ring in Proliferation: How to Dismantle an Atomic Bomb Network," *International Security*, 30, 2 (2005): 153-187, <https://www.jstor.org/stable/4137598>.

Optional readings:

Sheena Chestnut, "Illicit Activity and Proliferation: North Korean Smuggling Networks," *International Security*, 32, 1 (2007): 80-111, <https://www.jstor.org/stable/30129802>.

**Questions:**

- What is nuclear security?
- Why are some trafficking rings more successful than others?
- Where does the demand for trafficked nuclear materials come from?
- Where do trafficked nuclear materials come from?
- How can nuclear trafficking be curtailed or stopped?

**Week 15, 12/27 - 12/31: Arms Control and Disarmament**

Required readings:

Andrew J. Coe and Jane Vaynman, "Why Arms Control Is So Rare," *American Political Science Review* 114, no. 2 (May 2020): 342-55, <https://doi.org/10.1017/S000305541900073X>.

John D. Maurer, "The Purposes of Arms Control" (Texas National Security Review, 2018), <https://doi.org/10.26153/tsw/870>.

Optional readings:

Catherine Kelleher and Judith Reppy, *Getting to Zero: The Path to Nuclear Disarmament* (Stanford University Press, 2012), Chapters 18 and 19.

Maria Rost Rublee, "Nuclear Disarmament and Nonproliferation," *The Handbook of Global Security Policy* (2014): 103-125, <https://doi.org/10.1002/9781118442975.ch6>.

Anne Harrington, Eliza Gheorghe, Anya Loukianova, "What Arguments Motivate Citizens to Demand Nuclear Disarmament?" *The Bulletin of the Atomic Scientists*, July 2017, <https://doi.org/10.1080/00963402.2017.1338039>.

**Questions:**

- What is the transparency-security trade-off?
- What are the purposes of arms control?
- How feasible is nuclear disarmament?
- What is Global Zero and how desirable is it?