

## STSC/HSOC 1120 920: Science, Technology, and War

Summer Session II, July 5<sup>th</sup> – August 9<sup>th</sup>

MW 12 noon – 3:50 pm

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From submarines to atomic weapons, mustard gas to Agent Orange, military technology has had profound impacts on scientific understandings of the natural world. In this course, we will explore how changes in military science and technology have expanded and transformed the “battlefield” at different historical moments. This course provides an overview of the history of science, technology and war with a focus on the 20<sup>th</sup> century United States and asks how modern warfare and its technologies have relied on, impacted, and been transformed themselves by natural resources and environments. Topics will include the development of chemical weapons and pesticides, the battlefield of the sea in submarine warfare, the global journey of uranium for the Manhattan Project, and more. Through this course, students will learn to read and analyze primary historical sources and evaluate historical arguments and narratives. It introduces key concepts in the history of science and technology.

## **Readings**

Readings can be found on the Canvas site for the course. One book is required: Lindee, M. Susan, *Rational Fog*. Cambridge, MA: Harvard University Press, 2020. You can access *Rational Fog* online through Penn's library website, but you are encouraged to use a hard copy since the other class readings will all be digital. You can place a request with Penn Libraries to borrow *Rational Fog* for the semester and they will source it from other libraries if it is not available at Van Pelt.

## **Grading**

Students' final grade in this course will come from in-class participation and written assignments, described briefly below.

### **In-Class Participation**

Discussing the readings, primary sources, and engaging with your classmates' ideas about them are essential parts of this course. Twenty-five percent of your final grade will come from attendance and in-class participation. Attending class without participating will not count for full participation credit. Active participation might look like answering questions in lecture during class-wide discussions, or collaboration in small group activities when analyzing primary sources. Because our class meetings are long, class time will be broken up into several different blocks. Class time will include lecture, group activities with primary sources, and opportunities to workshop papers when appropriate.

### **Assignments**

*Thinking about Sources:* These two short assignments are intended to get you thinking about how historians analyze and interpret evidence.

*Science, Technology, and War on Screen:* For this assignment, pick a movie about war that relates to one of the topics that we have or will cover in class. You can choose from the list of movies I have provided or suggest a different film, pending my approval. If you were to remake this movie using the themes and questions that structure this class, what would it look like? Are there gaps or omissions in this movie given what you know now? Why might those exist? What kind of story is this movie telling?

*Final Paper:* Choose a military technology (submarine, atomic bomb, specific chemical weapon) and argue how it has or has not changed warfare's relationship to the environment. If you pick a technology that we have discussed in depth in class, you will need to provide a greater depth of analysis than what we have covered. Even with the technologies we have discussed, we have only scratched the surface of historical scholarship and you will be able to find plenty of scholarly journal articles to draw on. If you plan on writing about a military technology that we haven't discussed, clear it with me before you begin your research.

## **Academic Integrity**

Students are expected to be familiar with and comply with Penn's Code of Academic Integrity, which is available online at <https://catalog.upenn.edu/pennbook/code-of-academic-integrity/>. Intellectual development requires honesty, responsibility, and doing your own work. Plagiarism – taking ideas or words from others and representing them as your own — violates Penn's Code of Academic Integrity. Plagiarism or other forms of academic dishonesty will result in a serious grade penalty on the assignment and possibly other disciplinary actions. If you are unsure about what constitutes plagiarism while doing

course assignments, please do not hesitate to ask me. Using ChatGPT or other AI tools on course assignments is not permitted. While these tools have many applications, historical thinking and writing requires originality, novel combination of sources, and robust engagement and understanding of the ideas of other scholars. Because these are not AI strengths, it is often obvious when students have used AI in writing from the instructors' perspective.

No form of harassment or discrimination on the basis of religion, race, ethnicity, class, gender, sexual orientation, age, disability, etc., by either the instructional staff or the students, will be tolerated. If you believe these policies are being violated or insufficiently enforced, please inform the instructor, your academic advisor, the College Office, and/or one of the other appropriate University of Pennsylvania offices.

Date	Lecture	Readings
July 8	Introduction <ul style="list-style-type: none"> <li>• Technological determinism</li> </ul>	Lindee, "Introduction" Moon," Review of <i>Guns, Germs, and Steel</i> "
July 10	Guns in Colonial North American	Lindee, "To Hold a Gun"  Malone, "Technology, Tactics, and Total Warfare" in <i>The Skulking Way of War</i>
July 15	Civil and Uncivil Wars <ul style="list-style-type: none"> <li>• Submarines</li> <li>• American Civil War</li> <li>• Spanish-American War</li> </ul>	Mindell, "'The Clangor of That Blacksmith's Fray': Technology, War, and Experience Aboard the USS <i>Monitor</i> "  Aune, "Indian/Fighters in the Philippines," in <i>Indian Wars Everywhere</i>
July 17	The War to End All Wars <ul style="list-style-type: none"> <li>• World War I</li> <li>• Chemical weapons</li> </ul>	Brantz, "Environments of Death: Trench Warfare on the Western Front, 1914 – 1918"  Lindee, "Trenches, Tanks, and Chemicals"
July 22	Producing Enemies, Producing Weapons <ul style="list-style-type: none"> <li>• World War I</li> <li>• World War II</li> <li>• Military industrial complex</li> </ul>	Russell, "'Speaking of Annihilation': Mobilizing for War Against Human and Insect Enemies, 1914-1945"  Evenden, "Aluminum, Commodity Chains, and the Environmental History of the Second World War"
July 24	Fallout <ul style="list-style-type: none"> <li>• Cold War</li> <li>• Nuclear weapons</li> </ul>	<a href="#">Peet, "First They Mined for the Atomic Bomb, Now They're Mining for E.V.s"</a>  <a href="#">Brown, Tewa History of the Manhattan Project</a>
July 29	New Forms of War? <ul style="list-style-type: none"> <li>• Cold War counterinsurgency</li> <li>• Psychological warfare</li> </ul>	Cowan, "Rules of Disengagement: Masculinity, Violence, and the Cold War Remakings of Counterinsurgency in Brazil"

		Lindee, "The Battlefield of the Mind"
July 31	<p>"Vietnam Looks like the Place"</p> <ul style="list-style-type: none"> <li>• Vietnam War</li> <li>• Agent Orange</li> <li>• Mission creep</li> </ul>	<p>Martini, Edwin. "Only You Can Prevent Forests: The Chemical War and the Illusion of Control," in <i>Agent Orange: History, Science, and the Politics of Uncertainty</i></p> <p>Givens, "The Enthusiasm Expressed by Our Industry Friends: The US Army, the American Helicopter Industry, and Developing VTOL Technology, 1950–1965"</p>
August 5	<p>Bio Threats and National Security</p> <ul style="list-style-type: none"> <li>• Biological warfare</li> <li>• War on terror</li> </ul>	King, "The Influence of Anxiety: September 11, Bioterrorism, and American Public Health"
August 7	Mechanized War, Old and New	<p>Singer, "Robots at War: The New Battlefield"</p> <p>Lindee, "Conclusion: Reason, Terror, Chaos"</p>