

IAFF 3180W—Nuclear Weapons Technology and Security Policy (10 Aug 2015)

- Textbooks:
- (1) Rhodes, *The Making of the Atomic Bomb*
 - (2) Rhodes, *Dark Sun: The Making of the Hydrogen Bomb*
 - (3) Freedman, *The Evolution of Nuclear Strategy*
 - (4) Reynolds, *Bluebells and Nuclear Energy*
 - (5) Allison, *Nuclear Terrorism—The Ultimate Preventable Catastrophe*

Lecture	Date	Instructor	Topic	Reading (prior to)
1	9/1	Snyder	Course Introduction & Deterrence Overview (Massive Retaliation)	
2	9/3	Snyder	Nuclear Technology and Deterrence Paper discussion (possible topics, requirements, examples); Nuclear Fission and Fusion; brief overview of nuclear arms control	(1) Chap 10-14 (3) Intro + Chap 1-3 (5) pp 221-231: “Frequently asked..”
3	9/8	Snyder + GTAs	The first nuclear weapons—Little Boy and Fat Man; Expectations and how to prepare your term paper	(1) Chap 15-17
4	9/10	Snyder	Deterrence Paper—Proposed Topic Due; Fission based nuclear weapons—gun vs. implosion weapons	(1) Chap 18-19
5	9/15	Snyder	H ₂ Bomb—fission ignited fusion weapons	(2) Chap 23-24 (4) Chap 10
6	9/17	Snyder & Shaw	Flexible Response (Cuban Missile Crisis, Hotline, Nuclear Test Ban Treaties)—Laying the ground work for future arms control agreements	(3) Chap 4-9
7	9/22	Snyder	Stability and Arms Control—Non Proliferation Treaty, Mutual Assured Destruction	(3) Chap 10-17
8	9/24	Macfarlane	Deterrence Paper—Outline & 25% draft to Peer Review Committee¹ ; Special Nuclear Material—procurement and control	(4) Chap 1-4
9	9/29	Snyder & Bardet	<i>Radioactive Material Demonstration</i> ; Commercial nuclear fuel cycle	(4) Chap 5-6
10	10/1	GTAs	Peer Review Committee Feedback²	
11	10/6	GTAs	Peer Review Committee Feedback²	
12	10/8	Snyder	Commercial nuclear fuel cycle—potential for diversion of nuclear material	(4) Chap 8-9
13	10/13	Snyder & Shaw	Stability and Arms Control—Anti Ballistic Missile (ABM) Treaty, Strategic Arms Limitation Talks (SALT I)	(3) Chap 22-24
14	10/15	Snyder	Stability and Arms Control—MIRV, MARV, SALT II	(3) Chap 25-26

¹ With instructor’s concurrence the Deterrence Paper Topic can be changed after 9/10 but the 9/24 Outline and 25% draft submission requirement still apply.

² Approximately 5 minutes per student.

15	10/20		Midterm Exam #1	
16	10/22	Snyder	Soviet Collapse and Proliferation Roll Back—Strategic Arms Reduction Treaty (START), Cooperative Threat Reduction (CTR), Agreed Framework	(3) Chap 27
17	10/27	Snyder	Deterrence Paper—75% draft to Peer Review Committee; Contemporary Deterrence—New START	Handouts
18	10/29	Snyder	Nuclear weapons—blast and immediate radiation effects, long term biological and genetic effects	Handouts
19	11/3	GTAs	Peer Review Committee Feedback²	
20	11/5	GTAs	Peer Review Committee Feedback²	
21	11/10	Snyder	Contemporary Deterrence (continued)—Intermediate Nuclear Forces (INF) violation	Handouts
22	11/12	Snyder & Shaw	Deterrence Paper—100% draft for GTA review; Contemporary Deterrence (continued)—Proliferation and deterrence in the 21st century, North Korea, Iran, Ukraine	(3) Chap 28-29
23	11/17		Midterm Exam #2	
24	11/19	Snyder	Nuclear terrorism with a “dirty bomb”	(5) Chap 1-5
25	11/24	Snyder	Can a nuclear weapon be 3D printed?	Handouts
	11/26		Thanksgiving Break	
26	12/1	Guest Speaker	Potential for and prevention of non-state actor nuclear terrorism	(5) Chap 6-8 + Conclusion + Afterword
27	12/3	Guest Speaker	What if Iran gets a nuclear weapon?	Handouts
28	12/8	Guest Speaker	Last Class: Nuclear Zero—Possible? Desired?	Handouts
	12/10 4pm		Deterrence Paper due @ SEH 2870 (paper + Word copy via email)	