

# GC.DD 100

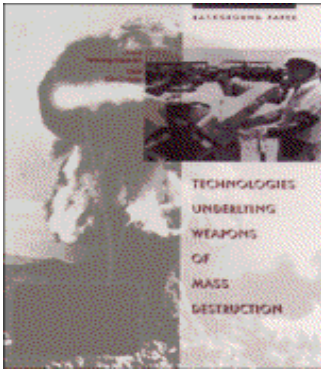
## Security, Disarmament and Nonproliferation

This class is an introduction to (i) global public policy issues posed by development and dissemination of nuclear, biological, chemical, and radiological weapons and (ii) measures proposed to prevent weapons proliferation.

Students will answer a quiz, at the end of the fourth week, on a distributed list of key terms, texts, and episodes. A twenty-page term paper is required, and a final exam.

### *Required and Additional Reading*

*The following texts are **required**.*



United States. Office of Technology Assessment. *Technologies Underlying Weapons of Mass Destruction*. December 1993. OTA-BP-ISC-115. NTIS order #PB94-126984. GPO stock #052-003-01361-4

Note that the full text is available online at the URL below. [In general, when the URL is underlined, what seem to be spaces are probably the underbar character “\_”.]

<http://www.au.af.mil/au/awc/awcgate/ota/9344.pdf>

Feiveson, Harold A. et al. [eds]. *The Nuclear Turning Point: A Blueprint for Deep Cuts and De-Alerting of Nuclear Weapons*. Washington: Brookings, 1999.

Larkin, Bruce D. *Designing Denuclearization* [DRAFT version of 2004.10.31] [on line].

<http://www.gcdd.net/TX=2004/TX.034=2004.10.31.DD.doc>

<http://www.gcdd.net/TX=2004/TX.035=2004.10.31.DD.html>

<http://www.gcdd.net/TX=2004/TX.036=2004.10.31.DD.pdf>

## Part 1. Introduction

Session 1: Nonproliferation by agreement. Treaty regimes. The nuclear ‘safeguards regime’.

- Treaty on the Nonproliferation of Nuclear Weapons [NPT]. [pdf version]

<http://www.unog.ch/frames/disarm/distreat/npt.pdf> ; also available at <http://disarmament2.un.org/TreatyStatus.nst> , by clicking on NPT and then printing (to a physical printer, or if your File: Print ... dialog box permits, as a pdf file on your machine).

- IAEA INFCIRC/66 [1965, as provisionally extended in 1966 and 1968]. The Agency's Safeguards System. <http://www.iaea.org/Publications/Documents/Infcircs/Others/inf66r2.shtml> [The general index page for INFCIRCs is <http://www.iaea.org.at/Publications/Documents/Infcircs/> ]

- IAEA INFCIRC/540 ['additional protocol' on nuclear safeguards] Model Protocol Additional to the Agreement(s) Between State(s) and the International Atomic Energy Agency for the Application of Safeguards. <http://www.iaea.org/Publications/Documents/Infcircs/1998/infirc540corrected.pdf>

- OTA. *Technologies ...* Chapter 1. Introduction and Summary.

## Part 2. Nuclear Weapons

Session 2: Requirements for nuclear nonproliferation

- *Report on the International Control of Atomic Energy* [The Acheson-Lilienthal Report, March 1946]. <http://www.learnworld.com/ZNW/LWText.Acheson-Lilienthal.html>

Session 3: How has the 'nuclearized world' come about?

- Larkin, Bruce. "Designing Denuclearization: Learning From the 1940s and From Recent Experience." [16 June 2003]. <http://www.isodarco.it/courses/candriai03/paper/candriai03-Larkin.pdf>

- Note existence of: Natural Resources Defense Council. *Nuclear Weapons Databook*, v 1-5.

- [in class] Video: "Hiroshima: Why the Bomb was Dropped". ABC News special.

- Recent NRDC tables of nuclear weapon inventories.

Session 4: Technical facts relevant to nonproliferation.

- OTA. *Technologies ...* Chapter 4: "Technical Aspects of Nuclear Proliferation." pp. 119-195.

- Ferguson, Charles D. and William C. Potter. *The Four Faces of Nuclear Terrorism*. Monterey Institute of International Studies / Center for Nonproliferation Studies and Nuclear Threat Initiative. June 2003. Chapter 3: "Seizing the Bomb", pp. 46-105.

- Lortie, Bret. "A Do-It-Yourself SIOP," in *The Bulletin of the Atomic Scientists*, July-August 2001, v 57 n 4, pp. 22-29. <http://www.thebulletin.org/issues/2001/ja01/ja01lortie.html>

Session 5: 'Crude nuclear weapons'. Secure borders? transport? or sources? Trade in fissile material.

- Calogero, Francesco. "Nuclear Terrorism: Likely Scenarios, Preventive Actions." <http://www.learnworld.com/COURSES/P190/ClassroomUse/NuclearTerrorism.pdf> Registered students only.

- Ferguson, Charles D. and William C. Potter. *The Four Faces of Nuclear Terrorism*. Monterey Institute of International Studies / Center for Nonproliferation Studies and Nuclear Threat Initiative. June 2003. Chapter 4: "Making the Bomb", pp. 106-189.

- von Hippel, Frank. “Reducing Stockpiles and Use of Highly Enriched Uranium,” at <http://www.learnworld.com/COURSES/P190B/ClassroomUse/FrankvonHippel.pdf> Registered students only.

- + Mark, Carson, Theodore Taylor, Eugene Eyster, William Maraman, and Jacob Wechsler. “Can Terrorists Build Nuclear Weapons?” Nuclear Control Institute. n.d. <http://www.nci.org/k-m/makeab.htm>

Session 6: Fissile material control.

- Matthew Bunn, Anthony Wier, and John P. Holdren. *Controlling Nuclear Warheads and Materials*. [http://www.nti.org/e\\_research/cnwm/overview/cnwm\\_home.asp](http://www.nti.org/e_research/cnwm/overview/cnwm_home.asp) March 2003. Commissioned by the Nuclear Threat Initiative.

Session 7: Verification. Iraq I.

- UNSC Resolution 687. [http://daccess-ods.un.org/access.nsf/Get?Open&DS=S/RES/687%20\(1991\)&Lang=E&Area=RESOLUTION](http://daccess-ods.un.org/access.nsf/Get?Open&DS=S/RES/687%20(1991)&Lang=E&Area=RESOLUTION) If you have trouble receiving it from this site, try going to the UNSC Resolutions 1991 index page at <http://www.un.org/Docs/scres/1991/scres91.htm>, or to the Federation of American Scientists site: <http://www.fas.org/news/un/iraq/sres/sres0687.htm>

- [in class] Video: IAEA/UNSCOM inspections 1991-1992.

- [in class] Video: Scott Ritter on US warping of UNSCOM/IAEA inspections

- Agence France Presse, 6 January 1999, “US Used UNSCOM Function to Spy on Iraq: Ritter” <http://www.payk.net/maillingLists/iran-news/html/1999/msg00075.html>

- UNSCOM documents: <http://www.un.org/Depts/unscom/>, especially six-monthly reports to the UNSC [through October 1999]. Please **read** the next-to-last report to the Security Council [Seventh Report by the Executive Chairman of the United Nations Special Commission on Iraq, 9 April 1999, which “covers the period from 6 October 1998 to 11 April 1999.”] <http://www.un.org/Depts/unscom/sres401eng.htm>

Session 8: Verification. Iraq II.

- Cirincione, Joseph, Jessica T. Mathews, and George Perkovich. *WMD in Iraq: Evidence and Implications* (New York: Carnegie Endowment for International Peace, January 2004). <http://www.ceip.org/files/pdf/Iraq3FullText.pdf>

- Duelfer, Charles. “The Inevitable Failure of Inspections in Iraq,” *Arms Control Today*, September 2002. [http://www.armscontrol.org/act/2002\\_09/duelfer\\_sept02.asp](http://www.armscontrol.org/act/2002_09/duelfer_sept02.asp)

- UNSC Resolution 1441. Locate at <http://www.un.org/Docs/scres/2002/sc2002.htm>

- Blix, Hans: Report to the UN Security Council 27 January 2003. <http://www.learnworld.com/org/TX=2003/TX.025=2003.01.27.UNSC.Blix.html>

- ElBaradei, Mohamed: Report to the UN Security Council 27 January 2003. <http://www.learnworld.com/org/TX=2003/TX.026=2003.01.27.UNSC.ElBaradei.html>

- 2 October 2003. Report of the Iraq Survey Group. Statement by David Kay on the Interim Progress Report on the Activities of the Iraq Survey Group (ISG) Before the House Permanent Select Committee on Intelligence, The House Committee on Appropriations, Subcommittee on Defense, and the Senate Select Committee on Intelligence.

[http://www.cia.gov/cia/public\\_affairs/speeches/2003/david\\_kay\\_10022003.html](http://www.cia.gov/cia/public_affairs/speeches/2003/david_kay_10022003.html)

Session 9: Charges: US-UK Claims Concerning 'WMD' in Iraq Before and During the 2003 Iraq War.

- + US. Central Intelligence Agency. "Iraq's Weapons of Mass Destruction Programs." October 2002.

[http://www.cia.gov/cia/reports/iraq\\_wmd/Iraq\\_Oct\\_2002.pdf](http://www.cia.gov/cia/reports/iraq_wmd/Iraq_Oct_2002.pdf)

- Larkin, Bruce. "The Iraq War of 2003 and the Politics of Denuclearization." <http://www.gcdd.net/>

- + "Deadly Comparisons: The Open Questions About Iraq's Weapons Programs." *The New York Times*, 13 December 2002. [A convenient summary table.]

- Cirincione, Joseph, Jessica T. Mathews, and George Perkovich. *WMD in Iraq: Evidence and Implications* (New York: Carnegie Endowment for International Peace, January 2004). <http://www.ceip.org/files/pdf/Iraq3FullText.pdf>

- [In class] Video: "Uncovered".

- Kelly, David. "Only Regime Change Will Avert the Threat." <http://observer.guardian.co.uk/politics/story/0,6903,1032773,00.html> March 2003.

Session 10: Cases I. Voluntary abandonments. [a] Argentina-Brazil. [b] South Africa. [c] Libya.

- Albright, David. "South Africa and the Affordable Bomb," in *Bulletin of the Atomic Scientists*, July/August 1994, v 50 n 4. <http://www.thebulletin.org/issues/1994/ja94/ja94Albright.html>.

- CNS. "Brazil-Argentine Agency for Accounting and Control of Nuclear Materials." <http://cns.miis.edu/pubs/inven/pdfs/abacc.pdf>

- CNS. **Brazil Overview.** [http://www.nti.org/e\\_research/e1\\_brazil\\_nuclear.html](http://www.nti.org/e_research/e1_brazil_nuclear.html)

Session 11: Cases II. Abandonment in a context of foreign and international pressure. [d] Ukraine-Kazakhstan-Belarus. [e] Iran. [f] Taiwan.

- Albright, David & Corey Gay. "Taiwan: Nuclear Nightmare Averted," in *Bulletin of the Atomic Scientists*, January-February 1998, v 54 n 1. <http://www.thebulletin.org/issues/1998/jf98/jf98albright.html>.

- CNS. Kazakhstan Overview. [http://www.nti.org/e\\_research/profiles/Kazakhstan/index.html](http://www.nti.org/e_research/profiles/Kazakhstan/index.html)

- CNS. Iran Overview. [http://www.nti.org/e\\_research/profiles/Iran/index.html](http://www.nti.org/e_research/profiles/Iran/index.html)

Session 12: Cases III. Refusal to abandon voluntarily. [g] Israel, [h] India. [i] Pakistan. [j] North Korea.

- Note: Cohen, Avner. *Israel and the Bomb*. New York: Columbia University Press, 1998.
- Note: Perkovich, George. *India's Nuclear Bomb*. Ithaca: Cornell University Press, 2000.

Session 13: The NPT, NPT Review Conferences, and the Status of the Nuclear Nonproliferation Regime. Prep Com for the 2005 NPT Review Conference.

- Article VI, §15, Conclusions of the 2000 NPT Review Conference. “Text: Final Document Issued by 2000 NPT Review Conference.” [Within text go to Article VI §15: “The Conference agrees on the following practical steps for the systematic and progressive efforts to implement Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons and paragraphs 3 and 4(c) of the 1995 Decision on “Principles and Objectives for Nuclear Non-Proliferation and Disarmament:”] <http://usinfo.state.gov/topical/pol/arms/stories/finaldoc.htm>

Session 14: Prevention [e.g. Cooperative Threat Reduction]. Control regimes. Unsanctioned coercive measures [e.g. interdiction under the Proliferation Security Initiative]. Surveillance. Intelligence.

### Part 3. Chemical Weapons

Session 15: Chemical Weapons. the Aum Shinrikyo attack.

- Amy Smithson, *Ataxia: The Chemical and Biological Terrorism Threat and US Response*, Chapter 3, “Rethinking the Lessons of Tokyo.” <http://www.stimson.org/cbw/pubs.cfm?id=12>
- NRDC factsheet on selected chemical agents. <http://www.fas.org/nuke/intro/cw/agent.htm>
- OTA. *Technologies ...* Chapter 2: Technical Aspects of Chemical Weapon Proliferation.

Session 16: Chemical Weapons Convention (CWC). Its challenge procedures, and on-site inspection.

- CWC. <http://www.unog.ch/disarm/distreat/chemical.htm> and [http://www.opcw.org/html/db/cwc/eng/cwc\\_frameset.html](http://www.opcw.org/html/db/cwc/eng/cwc_frameset.html) [Read these excerpts from CWC on challenge inspections] Article IX: Consultations, Cooperation and Fact-Finding, and Article XII: Measures to Redress a Situation and to Ensure Compliance, Including Sanctions, and Part X Challenge Inspections Pursuant to Article IX.

### Part 4. Biological Weapons

Session 17: Biological and Toxin Weapons. The ‘anthrax attack’.

- OTA. *Technologies ...* Chapter 3: Technical Aspects of Biological Weapon Proliferation.
- NRDC factsheet on selected biological agents. <http://www.fas.org/nuke/intro/bw/agent.htm>
- Heyman, David. “Lessons from the Anthrax Attacks: Implications for U.S. Bioterrorism Preparedness.” A Report on a National Forum on Biodefense, organized by the Center for Strategic and International Studies and the Defense Threat Reduction Agency. April 2002. A redacted [censored] version, released in 2004, is at <http://www.fas.org/irp/threat/cbw/dtra02.pdf>

ea.

Session 18: The Biological (Bacteriological) and Toxin Weapons Convention (BWC). Enforcement protocol debate.

- BWC ♦ [http://www.unog.ch/disarm/distreat/bac\\_72.htm](http://www.unog.ch/disarm/distreat/bac_72.htm)
- + Tucker, Jonathan B. “The BWC New Process: A Preliminary Assessment.” *The Nonproliferation Review*, Spring 2004.  
<http://cns.miis.edu/pubs/npr/vol11/111/111tucker.pdf>
- Whitehair, Rebecca and Seth Brugger, “BWC Protocol Talks in Geneva Collapse Following U.S. Rejection,” *Arms Control Today*, September 2001. [http://www.armscontrol.org/act/2001\\_09/bwcsept01.asp](http://www.armscontrol.org/act/2001_09/bwcsept01.asp)
- Bailey, Kathleen C, “Why the United States Rejected the Protocol to the Biological and Toxin Weapons Convention.” [http://www.armscontrol.org/act/2001\\_09/bwcsept01.asp](http://www.armscontrol.org/act/2001_09/bwcsept01.asp) October 2002.

## Part 5. Further Issues, Review and Conclusions

Session 19: Topics and issues not covered above: [a] CTBT. [b] Degrees of risk and the criterion of ‘military significance’. [c] NPT revision? or supplementation? [d] Precursor materials and control regimes. [e] Role of domestic legislation. [f] Non-coercive *unilateral* initiatives. • Methods and procedures.

- Comprehensive Test Ban Treaty [Explanation and text (read at least Articles I, IV, V and VI).]  
<http://disarmament.un.org:8080/wmd/ctbt/index.htm>

Session 20: Political dynamics, challenges, and initiatives. Ongoing initiatives, including [a] missile proliferation, [b] ballistic missile defense [BMD], and [c] space, ‘space control’, moon and Mars missions, and weaponisation of space.

- OTA. *Technologies ...* Chapter 2: The Proliferation of Delivery Systems.
- James Clay Moltz, “Breaking the Deadlock On Space Arms Control,” *Arms Control Today*, April 2002. [http://www.armscontrol.org/act/2002\\_04/moltzapri02.asp](http://www.armscontrol.org/act/2002_04/moltzapri02.asp)

### Sources

You can’t go wrong by becoming more familiar with these key arms control journals/yearbooks:

*Arms Control Today* [Arms Control Association]

<http://www.armscontrol.org/act/>

*Bulletin of the Atomic Scientists*

<http://www.bullatomsci.org/>

*Disarmament Diplomacy* [Acronym]

<http://www.acronym.org.uk/dd/> f

*Nonproliferation Review* [Monterey Institute of International Studies]

<http://cns.miis.edu/pubs/npr/index.htm>

*SIPRI Yearbooks* [Stockholm International Peace Research Institute]. Oxford University Press. [see <http://editors.sipri.org/pubs/yb03/aboutyb.html> ]

*Trust and Verify* [VERTIC]

<http://www.vertic.org/trustandverify.html>

*Verification Yearbook* [VERTIC] [see <http://www.vertic.org/publications/verification%20yearbook.html> ]

and by following arms issues in a daily newspaper. A number of organizations and research centers maintain web sites with carefully-reviewed material. See

<http://www.learnworld.com/COURSES/P190B/P190B.Links.html>

and

<http://www.learnworld.com/ZNW/ZNW.Links.html>

and the Web site of the Global Collaborative on Denuclearization Design:

<http://www.gcdd.net/>

which identifies centers, selected sources, and has links to two useful bibliographies, one of which appears as an attachment to this syllabus.

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#### Core List:

Arnett, Eric [ed]. *Nuclear Weapons After the Comprehensive Test Ban: Implications for Modernization and Proliferation*. Oxford: Oxford University Press, 1996. A Stockholm International Peace Research Institute volume.

Ball, Desmond and Jeffrey Richelson. *Strategic Nuclear Targeting*. Ithaca: Cornell University Press, 1986.

Bracken, Paul J. *Command and Control of Nuclear Forces*. New Haven: Yale University Press, 1983.

Feiveson, Harold A. et al. [eds]. *The Nuclear Turning Point: A Blueprint for Deep Cuts and De-alerting of Nuclear Weapons*. Washington: Brookings, 1999.

Gottfried, Kurt and Bruce Blair [eds]. *Crisis Stability and Nuclear War*. New York : Oxford University Press, 1988.

Herken, Gregg. *The Winning Weapon : The Atomic Bomb in the Cold War, 1945-1950*. New York : Knopf: 1980.

Karp, Regina Cowen [ed]. *Security With Nuclear Weapons? Different Perspectives on National Security*. New York: Oxford University Press, 1991.

Karp, Regina Cowen [ed]. *Security Without Nuclear Weapons? Different Perspectives on Non-*

*nuclear Security*. New York: Oxford University Press, 1992.

Reiss, Mitchell. *Bridled Ambition: Why Countries Constrain Their Nuclear Capabilities*, pp. 230-319. Washington: Woodrow Wilson Center Press, 1995.

Sagan, Scott D. *The Limits of Safety: Organizations, Accidents, and Nuclear Weapons*. Princeton: Princeton University Press, 1993.

Simpson, John. *The Independent Nuclear State: the United States, Britain, and the Military Atom*. London: Macmillan, 1986.

US Department of State. [Report on the International Control of Atomic Energy](http://www.learnworld.com/ZNW/LWText.Acheson-Lilienthal.html). [The Acheson-Lilienthal Report.] March 1946. [<http://www.learnworld.com/ZNW/LWText.Acheson-Lilienthal.html>]

#### National Programs:

##### BRITAIN

Gowing, Margaret. *Britain and Atomic Energy, 1939-1945*. New York: St. Martin's Press, 1964.

Gowing, Margaret, assisted by Lorna Arnold. *Independence and Deterrence. Britain and Atomic Energy, 1945-1952*. New York: St. Martin's Press, 1974. Two volumes.

##### CHINA

Lewis, John Wilson and Xue Litai. *China Builds the Bomb*. Stanford: Stanford University Press, 1988.

##### FRANCE

Duval, Marcel and Yves Le Baut. *L'arme nucléaire française; Pourquoi et comment?* Paris: SPM, 1992.

##### INDIA

Perkovich, George. *India's Nuclear Bomb*. Ithaca: Cornell University Press, 2000.

##### ISRAEL

Cohen, Avner. *Israel and the Bomb*. New York: Columbia University Press, 1998.

##### NORTH KOREA

Reiss, Mitchell, "North Korea: Living With Uncertainty," in Reiss, *Bridled Ambition: Why Countries Constrain Their Nuclear Capabilities*, pp. 230-319. Washington: Woodrow Wilson



Center Press, 1995.

## SOUTH AFRICA

Albright, David. "South Africa and the Affordable Bomb," in *Bulletin of the Atomic Scientists*, July/August 1994, v 50 n 4. <http://www.thebulletin.org/issues/1994/ja94/ja94Albright.html>.

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Holloway, David. *Stalin and the Bomb*. New Haven: Yale University Press, 1994.

## TAIWAN

Albright, David & Corey Gay. "Taiwan: Nuclear Nightmare Averted," in *Bulletin of the Atomic Scientists*, January-February 1998, v 54 n 1. <http://www.thebulletin.org/issues/1998/jf98/jf98albright.html>.

## UNITED STATES

Kaplan, Fred and Martin J. Sherwin. *The Wizards of Armageddon*. New York: Simon and Schuster, 1983.

## Other Good Sources:

[Atomic Archive](#). Materials are also available in a [CD-ROM version](#) as well.

Bird, Kai and Lawrence Lifschultz [eds]. *Hiroshima's Shadow* (Stony Creek, Connecticut: The Pamphleteer's Press, 1998),

Craig, Paul P. and John A. Jungerman. *The Nuclear Arms Race : Technology and Society*. New York: McGraw Hill, 1986.

International Association of Lawyers Against Nuclear Arms, International Network of Engineers and Scientists Against Proliferation, and International Physicians for the Prevention of Nuclear War. *Security and Survival: The Case for a Nuclear Weapons Convention*, Cambridge, Massachusetts: IPPNW, 1999. [Includes the Model Convention on the Prohibition of the Development, Testing, Production, Stockpiling, Transfer, Use and Threat of Use of Nuclear Weapons and on Their Elimination.]

Russett, Bruce M. & Bruce G. Blair [intro]. *Progress in Arms Control? Readings from Scientific American*. San Francisco: W.H. Freeman, 1979.

Schwartz, Steven. *Atomic Audit: the Costs and Consequences of U.S. Nuclear Weapons Since 1940*. Washington: Brookings, 1998.

Talbott, Strobe. *Deadly Gambits : the Reagan Administration and the Stalemate in Nuclear Arms Control*. New York: Knopf, 1984.

Talbott, Strobe. *Endgame : the Inside Story of SALT II*. New York: Random House, 1979.

Talbott, Strobe. *The Master of the Game: Paul Nitze and the Nuclear Peace*. New York: Knopf, 1988.

York, Herbert F. [ed]. *Arms Control. Readings from Scientific American*. San Francisco: W. H. Freeman, 1973.

United States. Office of Technology Assessment. *Technologies Underlying Weapons of Mass Destruction*. December 1993. OTA-BP-ISC-115. NTIS order #PB94-126984. GPO stock #052-003-01361-4. [http://www.wws.princeton.edu/~ota/disk1/1993/9344\\_n.html](http://www.wws.princeton.edu/~ota/disk1/1993/9344_n.html). Chapter 4: "Technical Aspects of Nuclear Proliferation," pp. 119-195.