

# Nuclear Weapons and the Modern Age

University of North Dakota  
Department of History  
Professor Albert I. Berger

History 335/Peace Studies 370: Nuclear Weapons and the Modern Age  
Spring Semester, 2004  
Syllabus

Contact Professor Albert I. Berger: 217B Merrifield Hall, M-F 11:00 am-12:00 noon and by appointment

## **Assigned Texts:**

Paul Boyer, *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age*

Alexandyr Fursenko & Timothy J. Naftali, *One Hell of a Gamble: The Secret History of the Cuban Missile Crisis*

Shane J. Maddock, ed., *The Nuclear Age*

Richard Smoke, *National Security and the Nuclear Dilemma: An Introduction to the American Experience in the Cold War (3rd Edition)*

various distributed hand-out and library reserve materials, assigned as required

## **COURSE DESCRIPTION:**

This course is an intermediate level introduction to the history of nuclear weapons and their associated delivery systems. Most of the course will cover their development and use during World War II, the nuclear arms race between the US and the USSR, and efforts to control their proliferation. The final portion of the semester will deal with the nuclear implications of the end of the Cold War, the break-up of the Soviet Union, and the development of new nuclear powers in the last years of the 20th century. The course will also cover—from an historian's point of view—a small amount of technical material needed to gain a reasonable and realistic understanding of weapons, delivery systems and such associated technologies as nuclear reactors, ballistic missiles, and space satellites.

## **COURSE OBJECTIVES:**

At the end of the semester, a successful student should

1. have a basic understanding of the history of the science and scientists who first produced nuclear weapons;
2. be aware of how and why the first nuclear weapons were built and used by the United States in World War II, and of why such weapons were not built by others at that time;
3. know a little bit about the way nuclear weapons, delivery systems, and associated technologies function, about the differences between nuclear and conventional weapons, and about why such technical matters are important when trying to understand the issues created by nuclear weapons and the efforts made since 1945 to control their proliferation;
4. have begun to explore the military and political roles played by nuclear weapons in the

Cold War and the changes in those roles between 1945 and 1991;

5. be conscious of governmental and non-governmental efforts to prevent the use and to control the proliferation of nuclear weapons.

6. be able to describe the processes through which so-called “New Nuclear Nations” have acquired their weapons, and to appreciate the continuing attractiveness of nuclear weapons to powers of all sizes.

### **COURSE PROCEDURES:**

Each day’s class work will focus on the topics listed for each meeting in the schedule below. Classes will include both lectures and class discussions, and will proceed on the assumption that students are familiar with the readings from the assigned texts listed with each meeting date and topic. There will be two examinations in this course: a mid-term examination and a final examination. Both examinations will be comprehensive, that is, based on all material covered prior to the date of the examination and each will include a variety of short answer, “objective” questions. In addition, students will be asked to write three essays. Two of these will be critical analyses of two books on the required reading list, the third will be based on your reading of a book or a group of other materials that you will choose yourself (with my guidance and approval). I have listed examination dates and due dates for the three essays in the schedule included in this syllabus.

### **Grades will be computed as follows:**

Book Essay #1 = 15% of course grade A = 90-100% = outstanding

Book Essay #2 = 15% of course grade B = 80-89% = very good

Book Essay #3 = 15% of course grade C = 70-79% = satisfactory

Mid-Term Exam = 25% of course grade D = 60-69% = passing

Final Exam = 30% of course grade F = 00-59% = failing

### **BOOK ESSAY ASSIGNMENTS:**

I want you to write three critical essays, two of them based on the assigned reading of Paul Boyer’s *By the Bomb’s Early Light: American Thought and Culture at the Dawn of the Atomic Age*, and of Alexandyr Fursenko’s & Timothy J. Naftali’s *One Hell of a Gamble: The Secret History of the Cuban Missile Crisis*. The third essay will cover a book or a group of other materials that you will each choose with my guidance and prior approval. Each essay should abide by the following instructions:

Read each book and prepare your essays at home for submission on the due dates listed in this syllabus.

Your essays should be concerned with the description of events and ideas, and the ascription of meaning to them, but should also consider and assess the authors’ use of evidence, the stories told by the evidence, and the manner in which authors manage evidence and interpret stories.

Assess each book from the point of view of its value to an historian.

To do so, consider and answer the questions below. Prepare both assignments carefully; each is worth fifteen percent (15%) of your final grade.

1. What is the subject of this book? What story does the author tell; what are the events or ideas de-scribed?
2. What is the work's thesis? What meaning do the authors ascribe to the events or ideas they describe? Why do the authors think the stories they tell are significant?
3. Who are these authors? What circumstances of time, place, class, gender, or belief seem to have influ-enced its creation, the choice of subject and evidence, and the conclusions presented?
4. You may refer to any information included in the book itself, but you must also make appropriate and cited reference to such guides and listings as The Directory of American Scholars, Contemporary Authors, World Authors, or Who's Who. (All of the guides just mentioned are available in the reference area of the Chester Fritz Library.) You may also cite Internet web sites and other electronic sources.
5. How balanced, and fair do the authors seem to be? Do the authors exhibit any special bias which would affect the value of their work? What sources and evidence does each author use and how do the sources demonstrate the authors' theses?

---- A note of caution is in order here. The dictionary defines bias, when used as a noun, as an unfair act or policy stemming from prejudice. When used as a transitive verb it means to influence in a particular, typically unfair direction, to prejudice. Prejudice, as a noun is defined as an adverse judgment or opin-ion formed beforehand or without knowledge or examination of the facts, a preconceived preference, or idea, or the act or state of holding unreasonable preconceived judgments or convictions. The fact that an author writes from a point of view [especially a new or unusual point of view], uses new evidence, tells a story in a new way, or comes to unfamiliar conclusions [especially conclusions that you don't want to hear] does not necessarily mean that that author is biased. Look for religious, political, social, or racial prejudices in the work. Consider carefully if the author is a partisan of any special idea, or if a work too readily accepts evidence that supports or dismisses evidence that contradicts its thesis. Also, consider if any apparent bias necessarily limits the usefulness of a work's evidence or argument.----

6. Having answered the previous questions, what did these authors tell you that you didn't know or hadn't thought about? What informed and considered conclusions about each book as a whole, and about its subject matter, can you reach?
- Quality is more important than quantity, but a paper shorter than three pages (750 words) would probably not cover the work in the depth required. At the other end of the spectrum, I would prefer not to read papers longer than four pages (1,000 words). Submit your papers typed, double-spaced, on 8.5" x 11" white paper, in a standard font and type size, and within standard margins. Make sure that your name and NAID # are in the upper right-hand corner of the first page. Staple your pages in the upper left-hand corner. Covers or folders are not necessary or desirable. If you wish to quote or make specific reference to a point in the work under review, note the appropriate page(s) in parentheses after the sentence in which you make the reference. If you wish to quote another work, use appropriate numbered footnotes or endnotes. You will have to make a point and back it up with evidence and examples from the book. Your essays must organize evidence into a thesis or argument of your own, and your conclusion must be based upon and grow

from the evidence and arguments you present. Use the English language properly because you will be graded in part on how you use the language.

#### **SOURCES FOR YOUR INDEPENDENT CHOICE OF READING FOR THE THIRD BOOK ESSAY:**

I would like to see papers based on a variety of sources: recollections of participants in the form of autobiographies, memoirs, magazine articles, etc.; scholarly and popular histories (at book length and in the form of articles in scholarly journals); contemporary magazines, newspapers, and journals in both their coverage of stories and their commentaries; government documents (if appropriate and available). Newly available Internet sources supplement and complement traditional sources for academic work, but they do not replace them!

Sources found on the Internet are acceptable, if properly cited and if appropriate to academic work. Remember that anyone can post anything on a bulletin board or website—especially a “.com” or “.net” site. “.org,” “.gov,” and “.mil” sites, like organizational publications and traditional government and military publications, may all have their own axes to grind. You must establish the authorship and the academic credibility of web-based sources—and remember that a web address alone is simply the online analog of a publisher’s name in a book citation. By itself it says very little about the authorship or credibility of information. Read your web sources very carefully. Search engines will frequently drop you onto a web page that is part of a larger site and it will be necessary to use links to establish who actually produced the information you find on any given web page. The best guidelines for evaluating websites are those that also apply to print: credentials, reputation, citation of the site’s sources, common sense, and critical thinking. You should include the name of the site and the name of the author in your citation. A URL alone is not sufficient citation. Since websites come and go, the emerging professional standard for authors requires that you print out the web page(s) you use, along with the identifying home page(s), and retain them in your files. If anyone asks (ever) where you got some information, you can then show it, even if the web page is no longer posted. See Turabian and/or consult me on the appropriate format for citation to websites. And please remember that the Web does not replace more traditional sources such as books, articles, and print documents.

#### **SCHEDULE OF CLASS TOPICS AND READING ASSIGNMENTS:**

Jan 13 Administration and Introduction  
The Discovery of Fission and its Consequences—I

Jan 15 The Discovery of Fission and its Consequences—II  
Berger, “An Historian’s Brief History of the Physics of Nuclear Fission” handout  
Maddock, pp. xiii-xxvii; Smoke, pp. 1-21

Jan 20 The Manhattan Project-I: film showing, Birth of the Bomb  
Smoke, pp. 22-42

Jan 22 The Manhattan Project-II: A \$2 Billion Industry and the First Nuclear Arms Race  
Smoke, pp. 22-42

Jan 27 The First Debate on Nuclear Strategy-I: film showing, The Great Commanders:  
Sir Arthur Harris

Jan 29 The First Debate on Nuclear Strategy-II: Theories and Practice of Strategic  
Bombardment

John Gabay, "Diary of a Tail Gunner," Williamson Murray, Did Strategic Bombing  
Work?" Victor Davis Hanson, "The Right Man," in Robert Cowley, ed., No End Save  
Victory: Perspectives on World War II (on reserve, Chester Fritz Library)

Feb 3 The First Debate on Nuclear Strategy-III: The Destruction and Surrender of Japan  
Maddock, pp. 53-92; begin Boyer, By the Bomb's Early Light

Feb 5 Nuclear Explosions: How They Work, What They Do, and What Makes Them  
Different

Dietrich Schroerer, Science, Technology, and the Nuclear Arms Race, pp. 30-57 (on  
reserve, Chester Fritz Library)

Feb 10 The Cold War and the Containment Policy  
Smoke, review pp. 22-42, new pp. 43-62

Feb 12 First Attempts at Nuclear Arms Control

William Poundstone, Prisoner's Dilemma: John Von Neumann, Game Theory, and the  
Puzzle of the Bomb, pp. 96-131 (on reserve, Chester Fritz Library)

Feb 17 The Period of American Nuclear Monopoly: film showing, War and Peace in the  
Nuclear Age: The Weapon of Choice

Feb 19 The Soviet Atomic Bomb

Smoke, review pp. 43-62

**ESSAYS ON BOYER, BY THE BOMB'S EARLY LIGHT DUE IN CLASS**

Feb 24 The Hydrogen Bomb and the Oppenheimer Matter

Maddock, pp. 26-52

Feb 26 "Massive Retaliation," the Nuclear Strategy of the 1950s: film showing, War and  
Peace in the Nuclear Age: A Bigger Bang for the Buck

Smoke, pp. 63-80; Maddock, pp. 3-25

Mar 2 Strategies: Eisenhower's "New Look," "Massive Retaliation," Kennedy's "Flexible Response"  
Smoke, pp. 81-100

Mar 4 MID-TERM EXAMINATION

Smoke, pp. 1-100; Maddock, pp. xiii-92; handout and reserve materials, all class activities

Mar 9 The Nuclear "Triad"

Smoke, review pp. 81-100, new pp. 101-124; Maddock, pp. 93-104

Mar 11 "Flexible Response" and "Mutual Assured Destruction," Nuclear Strategy in the 1960s: film showing, War and Peace in the Nuclear Age: The Education of Robert McNamara

begin Fursenko & Naftali, One Hell of a Gamble

ONE-PAGE DESCRIPTION OF MATERIALS FOR 3RD INDEPENDENT READING  
ESSAY DUE IN CLASS

Mar 16 } Spring Break—No Classes

Mar 18 } Spring Break—No Classes

Mar 23 Kennedy, Cuba, and the Missile Crisis-I

Smoke, review pp. 101-124; Maddock, pp. 105-114

Mar 25 Kennedy, Cuba, and the Missile Crisis-II

complete Fursenko & Naftali, One Hell of a Gamble

Mar 30 The Civilian Peace Movement and Governments' Arms Control Efforts

Smoke pp. 125-148; Maddock, pp. 141-190

Apr 1 Ballistic Missile Defense and Strategic Arms Limitation: film showing, War and Peace in the Nuclear Age: One Small Step

Smoke, pp. 149-174

Apr 2 LAST DAY TO DROP A COURSE

Apr 6 Detente and the Politics of Strategic Arms Limitation (SALT)

Maddock, pp. 115-140, review pp. 141-190

ESSAY ON FURSENKO & NAFTALI, ONE HELL OF A GAMBLE DUE IN CLASS

Apr 8 Nuclear Proliferation Begins: film showing, War and Peace in the Nuclear Age:  
Europe Goes Nuclear  
Maddock, review pp. 141-161

Apr 13 Nuclear Proliferation Continues: film showing, War and Peace in the Nuclear  
Age: The Haves and the Have Nots  
Smoke, pp. 175-194; Maddock, review pp. 141-150

Apr 15 Buildups, Warfighting Scenarios, and Arms Control in the 1980s  
Smoke, pp. 195-235

Apr 20 The 1980s: “Star Wars”: The Science, Technology, and Politics of a New Cold  
War  
Smoke, pp. 236-263

Apr 22 The End of the Cold War and the US-Soviet Nuclear Arms Reduction Treaties  
Smoke, pp. 264-286

Apr 27 Proliferation and New Nuclear Nations  
Smoke, pp. 287-312

Apr 29 Weapons of Mass Destruction and Non-Governmental Organizations  
Smoke, pp. 313-332

**THIRD BOOK ESSAY DUE IN CLASS—NO EXTENSIONS**

May 4 The 21st Century  
Maddock, pp. 176-236

May 6 Conclusions  
Maddock, pp. 176-236

May 7 Reading and Review Day

May 12 FINAL EXAMINATION

3:15 pm, 215 Merrifield Hall

all reading assignments and classroom activities since the mid-term examination