

Syllabus
Nonproliferation Issues for Weapons of Mass Destruction
NE4331/7331
Assuming a TTh course

1. Contact Information Mark Prelas, Tushar Ghosh and Dabir Viswanath
2. Book **Nonproliferation Issues for Weapons of Mass Destruction**, Mark A. Prelas and Michael S. Peck. Marcel Dekker. Pub. Date: January 2005. ISBN: 0824753399
3. Grading: in class discussions, group & individual projects and exercises, see Course Policies on specifics on grading.
 - Participation in the analysis of 24 assigned news articles
 - Leadership role on one of the assigned articles
 - 1 Individual project
4. Lecture and Discussion Structure
 - a. 20 min. discussion and analysis of news event
 - b. 40 min. New Topics
 - c. 15 min. Question and Answers

Course Description:

Weapons of mass destruction (WMDs) are a direct consequence of 20th-century technology. The challenges that we face in coming to grips with the awesome destructive power that WMDs hold will be a dominant theme of the 21st century. As citizens living within a pluralist society, we must gain a realistic understanding of the relative risks that WMDs present to our way of life. This knowledge will equip us to make informed decisions that can lead to the mitigation of these destructive forces. This course is designed to provide a foundation for those interested in nonproliferation issues of weapons of mass destruction and to provide an understanding of the proliferation risks of WMDs. Knowledge is important to help us dispel the myths and to recognize the facts. It is especially critical in choosing the issues that are most important in stemming the proliferation and possible use of WMDs. We will also recommend a strategy to limit continued WMD proliferation by addressing the underlying reasons for their continued development and deployment.

Course Policies:

Student attendance will not be taken. The student is responsible for obtaining the materials presented in lecture in case of absence. Work must be turned in on time unless

the student obtains the instructor's permission to turn in work late. In this course you will go through exercises which are designed to provide a depth of understanding of the issues, to strengthen your analytical skills and to provide you with a well rounded experience on the topics. You will be asked to read current news articles and answer six questions.

This course will require that you analyze news articles before every class by addressing the six questions that are posed. You will be asked to lead class discussions on the news articles 2 times during the semester. In addition there will be assigned reading and a final project. With the final project you will work with the course instructors (Professors Prelas, Ghosh and Viswanath) on choosing a topic. You will research the topic and will write a 10 page report.

Your grade will be dependent on the articles that you analyze, your class participation in the discussions of these articles and the two discussions that you lead (50%) plus there will be the final report (50%).

Twenty minutes of each class will be class discussion based upon a current topic in the news. This topic will have been assigned in the previous lecture and the student is responsible for reading the assigned materials. It is expected that each student participate in the discussion and present his or her point of view.

Each student will be asked to lead the class during the discussion period on a current topic. Grading will be based on:

Discussions:

Preparation 30%

Presentation 30%

Approach & Method 20%

Ability to stimulate participation of other students 20%

The 10 page project report will be graded based on:

Quality of Writing 20%

Report Format 20%

Approach & Method 20%

Analysis 20%

Conclusion 20%

Graduate Student Requirements:

Graduate students will have the additional requirement of making a power point presentation to the class based on their research into the project that they worked on.

Academic Dishonesty

Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor.

ADA Statement

If you have special needs as addressed by the Americans with Disabilities Act (ADA) and need assistance, please notify the Office of Disability Services, A038 Brady Commons, 882-4696 or course instructor immediately. Reasonable efforts will be made to accommodate your special needs.

Lecture Outline

Lecture 1

Strategic Thinking

Read News Article "Fast Pace of Changing World"

Read Chapter 1

Lecture 2

Discuss News Article "Fast Pace of Changing World"

Topic "What motivates proliferation"

Read News Article "NYT Thermonuclear Miniature"

Read Chapter 2

Lecture 3

Discuss News Article "NYT Thermonuclear Miniature"

Topic "What motivates proliferation continued? & What is a WMD?"

Read Article "DIA threat Analysis"

Lecture 4

Discuss "DIA threat Analysis-Nuclear & Biological"

Topic "What is a WMD continued"

Read first quarter of Chapter 3

Lecture 5

Discuss "DIA threat Analysis-Chemical"

Topic "What is a WMD continued"

Read second quarter of Chapter 3

Lecture 6

Topic “Nuclear fuel cycle”
Read third quarter of Chapter 3

Lecture 7

Possible Guest Speaker Michael Peck
Topic “Making HEU”
Finish reading Chapter 3

Lecture 8

Possible Guest Speaker Michael Peck
Topic Pu production

Lecture 9

Topic radioisotope production

Lecture 10

Topic radiation effects and nuclear blast

Lecture 11

Can nuclear materials be diverted?
Read first half of Chapter 4

Lecture 12

Topic Analysis of nuclear proliferation risks
Finish Reading Chapter 4

Lecture 13

Topic Biological weapons

Lecture 14

Topic How are biological pharmaceuticals made?

Lecture 15

Topic: Dual use facilities

Lecture 16

Topic: What are the requirements to make BW?
Read first third of Chapter 5

Lecture 17

Topic: What is the proliferation threat from BW?
Read second third of Chapter 5

Lecture 18

Chemical weapons
Finish Chapter 5

Lecture 19

Description of the chemical industry

Lecture 20

How are CW made

Lecture 21

How are CW made

Lecture 22

How are CW made
Read Chapter 6

Lecture 23

Dual use facilities
Lecture 24
Treaties
Read Chapter 7

Lecture 25
The future of WMD in a changing world

Lecture 26
The future of WMD in a changing world
Read Chapter 8

Lecture 27
A strategy for dealing with proliferation

Lecture 28
Concluding discussion and power point presentations for graduate students