

Syllabus: The Science and Technology of Terrorism and Counterterrorism NE 4330/7330

University of Missouri-Columbia

1. Contact Information Mark Prelas, Tushar Ghosh and Dabir Viswanath
2. Book **SCIENCE AND TECHNOLOGY OF TERRORISM AND COUNTER TERRORISM**, Editors: T. Ghosh, M. Prelas, D. Viswanath and S. Loyalka, Marcell Dekker, 08/01/2002, **ISBN: 0-8247-0870-9**
3. Grading: in participation, group & individual projects and exercises, homework, midterm exam and final exam. See Course Policies on specifics on grading.

Course Description:

Terrorism has been a familiar tool of political conflict, and it has assumed greater importance during the past twenty years. This subject has been treated by political scientists in various forms, but the scientific and technological aspects of different forms of terrorism cannot be found in a single place. It is important for persons who propose counter measures to understand the basics of different types of terrorism such as for instance the nature of chemical agents, their properties such as toxicity, etc. in order to build better defense systems. Last year this course generated significant public and media interest and received wide publicity both in the local and national news media (Christian Science Monitor, Chicago Sun -Times...).

We plan to invite the guest speakers from Missouri State Emergency Management Agency, Callaway Nuclear Power Plant, US Military, and other agencies.

This course is designed to provide a technical background for issues in terrorism and counterterrorism for students in a wide range of disciplines. Past students have come from political science, journalism, psychology, health science, chemistry , biology, physics, engineering etc.

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.

This course will have assigned homework. You will be expected to participate in class

discussions, you will have a midterm exam and a final exam.

Your grade will be based on the following

- Participation 10%
- Homework 25%
- Midterm Exam 25%
- Final Exam 40%

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.

Topic	Lecture
Introduction	1
Nature of Terrorism	2
General Psychology of Terrorism	
Biological Weapons (1)	3

Radiation (2) Ionizing Radiation, principles of radioactivity, Decay, Population doses biological effects of radiation. Nuclear waste transport. Implications for Implications for terrorist activities	4, 5
Chemical Terrorism (3) Chemical Agents, Manufacture, and Properties, Delivery, Advantages, Disadvantages, Counter Measures Interaction on human system	6-9
Nuclear Terrorism (2) Motivation, Threats, Proliferation Control	10-11
Biological Terrorism (2) Classification, Manufacture, Toxicity, Effectiveness, Control, Delivery, Counter Measures	12-13
Cyber Terrorism (3) Cyber Terrorism: Its nature and Scope, The Attack: Vulnerabilities and Consequences Protection and Response	14-17
TEST	18
Engineering Materials and Structures for Blast Loading	19
Agricultural Terrorism (1)	20
Case Studies (2)	21-22
Missouri Preparedness	23
Treaties	24
TBA	25
Small Community Model	26
Paper Presentation	27

Protective Clothing	28
Final Exam.	