

IDS 255: SCIENCE, TECHNOLOGY & NUCLEAR WEAPONS
Course Syllabus, Spring 2007

Instructor: Peter J. Pella, pellap@gettysburg.edu 337-6025

Hours: Tuesdays & Thursdays, 10:00 – 11:15 p.m.

Classroom: Masters Hall Room 208

Text: To be provided

Objectives: This course is designed to familiarize you with some of the physical principles applicable to nuclear weapons (e.g. fission, fusion, radiation), as well as with some of the technological issues pertaining to nuclear weapons, arms control, and other related topics. You will also gain an appreciation of where we are today, how we got to our present state, and what may lie ahead. How much time we spend on each objective will depend on class interest and background and current events; you should, therefore, consider the syllabus to be somewhat flexible, although homework and other due dates are fixed.

OFFICE HOURS: If I am not in class or at a meeting, I will always have time to talk with you about the course, homework, your paper, or any other topic. I especially encourage you to ask for assistance on homework assignments, if you need it. If you would rather schedule an appointment, call or e-mail me, or the Department's secretary, Judy Jones (ext. 6020 or email at jujones@gettysburg.edu).

GRADING: There will be five homework assignments, two (2) in-class exams, a comprehensive final exam, and a paper. The homework, class exams, final exam, and paper will each represent 25% of your grade.

The paper should be about 10 to 15 pages in length and focus on a narrowly defined topic, related to nuclear weapons issues, and hopefully, of interest to you. Topics must be chosen **no later than Tuesday, April 3**, and a detailed outline (worth 10% of your grade on the paper), with a list of major references, submitted to me on or before class on **Tuesday, April 17**. The final paper will be due on or before class on **Thursday, May 3**. It should be well written, well documented, factually correct, and contain no grammatical or spelling errors. I will be happy to suggest topics for you at any time. The writing center is a good source to use to help with the proper documentation techniques (footnotes, etc.) The paper must represent your own work and contain the signed honor pledge. **THE HONOR CODE WILL BE STRICTLY ENFORCED.**

If you wish, you may present a 20-minute oral presentation to the class. The scheduling of the talk will depend on the topic, however you must plan ahead. Unlike the paper, you must pick an approved topic by **March 20**, and hand in a detailed outline on or before class on **April 3**. I will schedule the presentations any time after that.

The homework is a chance to boost your grade. If you are unsure of a question, please do not hesitate to come see me. Never leave a question blank. You may work with each other on the quantitative problems, however your final write-up of the solutions to these problems should be done on your own. **All qualitative homework questions will be your individual work only (i.e. not copied from other students or other references including internet sites).** **Your homework will contain your signed honor pledge and list all those with whom you worked.**

HOMEWORK DUE DATES:

Thursday, February 1, for Assignment #1
 Tuesday, February 13, for Assignment #2
 Tuesday, March 20, for Assignment #3
 Tuesday, April 10, for Assignment #4
 Thursday, May 3, for Assignment #5

Lesson #	Day	Date	Subject	References
1	R	1/18	Introduction	Chapter 1
2	T	1/23	Energy and Mass	Chapter 2-3
3	R	1/25	Radioactivity	Chapter 4
4	T	1/30	Nuclear Physics	Chapter 5
5	R	2/1	Fission/fusion	Chapter 6
6	T	2/6	Weapons	Chapter 7
7	R	2/8	Weapons Effects I	Chapter 8
8	T	2/13	Weapons Effects II	Chapter 9
9	R	2/15	Exam I	Chapters 1-9
10	T	2/20	History	Chapter 10
11	R	2/22	Arsenals I	Chapter 11
12	T	2/27	Arsenals II	Chapter 12
13	R	3/1	Weapons Policy	Chapter 13
14	T	3/6	Treaties I	Chapter 14
15	R	3/8	Treaties II	Chapter 14
			Spring Break	
16	T	3/20	Civil Defense	Chapter 15
17	R	3/22	Missile Defense I	Chapter 16
18	T	3/27	Missile Defense II	Chapter 16
19	R	3/29	Nuclear Reactors	Chapter 17
20	T	4/3	Proliferation (Topic Due)	Chapter 18
21	R	4/5	NPT/IAEA	Chapter 19-20
22	T	4/10	Nuclear States Outside of the NPT	Chapter 21
23	T	4/17	Exam II	Chapters 10-21
24	T	4/19	“Axis of Evil” and Beyond (Outline Due)	Chapter 22
25	R	4/24	NWFZ's	Chapter 23
26	T	4/26	Comprehensive Test Ban Treaty	Chapter 24
27	T	5/1	Nuclear Wastes	Chapter 25
28	R	5/3	Catch-Up or Talks	
	R	5/10	FINAL EXAM	8:30-11:30 pm

