

**PSC 307 - Nuclear Weapons in the Post-9/11 World (4)**  
**Course Outline                      GE Area F**

Technology and basic science of fission/fusion weapons, uranium/plutonium, nuclear reactors, offensive/defensive missile systems, command/control, verification, weapon effects, nuclear testing. Historical context of Cold War and proliferation, recent events, global norms, arms control treaties. 3 lectures, 1 seminar. Prerequisite: Junior standing and completion of GE Area B. Fulfills GE Area F.

**Learning Objectives and Criteria:**

Upon completion of this course, the student is expected to

- be conversant on the technologies of mass destruction and their potential uses in the world after the Cold War and 9/11 terrorism
- be able to discuss the technology and basic science of fission/fusion weapons, uranium/plutonium production, nuclear reactors, offensive and defensive missile systems, monitoring/verification, and biological/chemical weapons.
- recognize and explain the historical context of the Cold War and past-proliferation events.
- demonstrate understanding of the global norm of arms control treaties and the monitoring and verification technologies in search of a stable end-state for the Earth.
- thoughtfully present, discuss, and debate these issues in a seminar setting.

**Text and References:**

Lecture text: Hafemeister, David, *Nuclear Proliferation*, 5<sup>th</sup> edition 2009, (El Corral)

Seminar textbook: *In Mortal Hands: A Cautionary History of the Nuclear Age*, S. Cooke.

Additional reference materials for the seminar are obtained from the library and internet.

**Content and Method:**

**Method: PSC 307 is taught in by lecturing for 3 hours, with a one-hour seminar.**

Seminar attendance is required for the seminar, and students are expected to participate in examination of historical issues and individual assignments. The seminar is an excellent chance to develop debating and presentation skills, on a science, technology, history, law, international relations and tactics.

**Content: PSC 307 will adhere to the following topics:**

- Week 1     -    Atomic History and AQ Kahn
- Week 2     -    Nuclear Weapons and Effects
- Week 3     -    Nuclear Reactors, reprocessing, radiation
- Week 4     -    Offense and Defense
- Week 5     -    Verification
- Week 6     -    Arms Control Treaties
- Week 7     -    Nuclear Proliferation
- Week 8     -    Proliferant States and Terrorism
- Week 9     -    Proliferation/ Terrorism Policy

**Methods of Assessment:**

Students' grades are based on 3 exams, homework, seminar presentations, research paper, and a 5-minute talk.