IAFF 3180W—Paper Guidance and Grading Rubric (10 Aug 2015)

1.   Nuclear Technology and Deterrence Paper.   Students will research and write an original paper concerning nuclear weapons technology and/or nuclear deterrence. The paper should be at least 5000 words long, not including references. Students can choose one of the suggested topics below or can come up with their own topic.

2.   Sample Topics:

(1) What should be done if Iran is shown to be violating the recent P5+1 nuclear weapons agreement?

(2) How should the U.S. respond if Iran detonates a nuclear weapon in a successful underground test? What do we expect from Israel and other countries in the region?

(3) Due to recent successful underground nuclear test and ICBM test launch by North Korea, Japan has decided to develop its own nuclear deterrence. What are the strategic implications of doing so? Should the U.S. try to prevent this? Should the U.S. provide assistance?

(4) Can the U.S. have adequate deterrence with a nuclear Dyad vice the current nuclear Triad (submarine based missiles, land based missiles, bombers)?

(5) Should the U.S. resume underground nuclear weapons testing to enhance deterrence, particularly to ensure weapon reliability? Should we resume if Russia or China resumes testing?

(6) Recent non-explosive testing has shown that a large portion of U.S. nuclear weapons have extremely poor reliability due to aging of Plutonium and other Special Nuclear Materials. Should the U.S. design and manufacture a new design warhead even if underground testing is not required?

(7) The U.S. has decided to not produce additional Tritium ^{3}H. What are the implications to deterrence of doing so?

(8) ISIL claims to have acquired an old Soviet "suit-case nuke," specifically a RA-115. U.S. and Russian intelligence services believe that the weapon can no longer produce a significant nuclear yield, e.g. > 10 tons TNT equivalent yield. What are the risks posed?

(9) Recent developments in the fields of nuclear forensics and nuclear archaeology may soon allow the U.S. Government to identify the source of nuclear explosive material post-detonation; identify and evaluate a policy option these technical developments would make possible.

(10) Commitment to a Comprehensive Nuclear Test Ban Treaty (CTBT) in force by 1996 was incorporated into the indefinite extension of the Nuclear Non-Proliferation Treaty. This deadline is nearly two decades past, would U.S. ratification of the CTBT have value today?

(11) The forward deployment of U.S. nuclear weapons to the territory of allied states is believed to reassure the nuclear hosts of the U.S. commitment to their defense. Evaluate the value of this particular type of reassurance in comparison its costs and alternatives.

(12) Under what circumstances should the United States oppose and/or risk war to prevent the development of enrichment (as it has in Iran) and reprocessing (as it did in North Korea) technology?

(13) Predict allied and adversary reactions to the next U.S. use of nuclear weapons at one day, one week, one month, and one year post-detonation.

(14) For the upcoming 2016 Nuclear Security Summit, what "gift baskets" from participants would most promote future security, both from nuclear and non-nuclear states? How could the U.S. encourage these commitments?

(15) Several non-nuclear states (Nigeria, Indonesia) are developing Human Reliability Programs with the assistance of the U.S. and International Atomic Energy Agency to strengthen nuclear security. How could these programs most effectively be implemented (capacity building, transparency, information sharing, etc.) and what lessons learned from these should be prioritized and implemented more broadly throughout the nuclear security field?

3.   Rules of Engagement:

(1) The paper must be at least 5000 words long, as verified by Word Count in Microsoft Word, not including references. Excessively long papers, e.g. greater than 6000 words, are discouraged.
(2) The paper should be single sided, double spaced size 12 font.
(3) The paper will reviewed by Peer Review Committee and a Graduate Teaching Assistant as detailed in the course syllabus.
(4) The paper will be electronically verified that it is in fact original. Quoted material and references must be properly documented.
(5) The first page of the paper will include an appropriate abstract that summarizes the topic and key conclusions. The abstract should be no longer than 500 words.
(6) At least 50% of references cited should be from sources other than the internet.

4.   Grading Rubric (paper worth 40 pts total):

Timely Submission of Proposed Topic (9/10—paper)	1 pts[1]
Instructor Evaluation of Proposed Topic	3 pts
Timely Submission of Outline/25% Draft (9/24—paper + soft[2])	1 pts[1]
GTA Evaluation of Proper Format and use of References	3 pts
Timely Submission of 75% Draft (10/27—paper + soft)	1 pts[1]
GTA Evaluation of Proper Format and Incorporation of Peer Review Committee Recommendations	2 pts
Timely Submission of 100% Draft (11/12—paper + soft)	2 pts[1]
GTA Evaluation of Content and Incorporation of Peer Review Committee Recommendations	5 pts
Timely Submission of Complete Paper (12/10—paper + soft)	2 pts[1]
Instructor Overall Evaluation of Paper Content:	20 pts
• Clearly identify and describe the policy issue	2 pts
• Explain the importance of this issue	2 pts
• Specify how to illuminate this issue	2 pts
• Explain how you provide original insight	2 pts
• Report your findings/recommendations	8 pts
• Describe the implications of your findings	4 pts

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[1] ½% off for each day late.
[2] MS Word format.