*NUCL 6230-001*

*Nuclear Forensics Technologies, Techniques and Methodologies*

Prof. Terry A. Ring, MEB 2290

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Class Meeting Time/Place: T, H - 2:00 pm 3:20 pm [MEB 1225](http://www.acs.utah.edu/uofu/stu/scheduling?term=1134&dept=NUCL&classtype=g)

Class Website: [www.che.utah.edu/~ring/](http://www.che.utah.edu/~ring/)

Objective: To develop nuclear forensic skills needed for potential future terrorist events. Answer the questions where did the nuclear material come from (Attribution), what route did it follow to the interdiction site (route attribution), how to safely collect nuclear materials for an interdiction site, how nuclear materials (pre-detonation and post-detonation) are analyzed, how to evaluate of pre-detonation nuclear materials’ capabilities and how to interface with emergency response, law enforcement (FBI, UHP), Intelligence community, State Department and International Treaties.

Course Materials

[Lecture Power Points](http://www.che.utah.edu/~ring/NUCL%206230/Lecture)

[Readings](http://www.che.utah.edu/~ring/NUCL%206230/Reading)

[Homework](http://www.che.utah.edu/~ring/NUCL%206230/HW/)

[Videos](http://www.che.utah.edu/~ring/NUCL%206230/Videos/)

Grading: 3 papers and 1 oral presentation will be used for a grade in this class. Papers are submitted via email to [ring@eng.utah.edu](mailto:ring@eng.utah.edu)

Schedule

Week 1 – a) Course Information

– b) Nuclear History – International Nuclear Treaty

Week 2 Where Does Dangerous Stuff Come From?

Week 3 Nuclear Power Debate

Week 4 –Case Study 1

Week 5 – Nuclear Analysis Methods

Write Paper on an analytical methods for NF.

Week 6 – Where does NF fit into Emergency Management

Week 7 Case Study 2

Write paper on the technologies that were used for Polonium-210 detection.

Week 8 – Prepare for Nuclear Forensic Expert Witness Testimony

Week 9 – Discuss Politics and Tactics of Terrorists

Week 10-The Art of War

Week 11 Discuss Terrorists Transportation Networks and Methods of Interdiction

Week 12 Case Studies

Week 13-14

Write your own case study for inclusion in the course

Week 15 Present your case study to the class using PowerPoint Presentation