

## **ENGY 3310 Fundamentals of Nuclear Science and Engineering**

**Spring 2016**

### ***HW #1: Various Uses/Applications of Nuclear Science -- Today and in the Future***

Your job for this HW assignment is to do a little research on one specific application of nuclear technology outside the traditional Nuclear Power field (i.e. nuclear reactor concepts will be the focus of HW #2). In particular, you should first browse the topics discussed in Chapters 12 - 14 of your text by Shultis and Faw, which highlight a variety of non-traditional energy conversion devices, the use of radiation science in industry and research, and several medical applications of nuclear technology. After your initial review, pick one of the topics that catches your interest and do some further research on this particular subject, focusing on how this application of nuclear science and technology has impacted (or could impact) society. Also be sure to address the basic underlying fundamental concepts of the device or system (i.e. explain basically how it works), but don't dwell on the technical details at this point -- the technical level here should be that of a general audience, not a group of experts!

Once you have sufficient information, write a short summary paper (3-5 pages) that overviews the key aspects of the topic you selected for your study. Try to be as specific as possible and include some discussion on how the use of your selected system or device uses radiation science to impact society. Also include some diagrams or pictures, as appropriate, to help explain the basic concepts of how the system works.

This should be a professional summary document -- and be sure to formally cite any reference sources used in your report. Note also that you should be prepared to briefly overview your selected topic during class discussions.

Good luck -- this assignment should be quite educational and give you a good overview of the variety of applications of nuclear science and how recent advances in this field can impact the world we all live in...