Exam 3 Learning Goals

1. Recite the SI units for every "rung of the dose ladder." (Activity, Exposure, Dose, Dose Equivalent)
2. Recite the dose rate ranges for LDR and HDR brachytherapy.
3. Recite the name of the dose prescription points for tandem and ovoids procedures.
4. Recite the occupational dose limits for radiation workers in mSv.
5. Recite the continuous exposure general public dose limits in mSv/yr.
6. Recite the ALARA acronym.
7. Recite the annual average background dose for a US citizen in mSv/yr.
8. Recite the dose limit release criteria for radiopharm patients in mSv.
9. Recite the very particular factor for neutron equivalent dose calculation.
10. Describe the generally accepted four modes of brachytherapy.
11. Describe the U factor, in the context of radiation safety and shielding.
12. Explain what intra-op or post-op intracavitary procedures are treating and why.
13. Explain where dose is deposited **by certain particles** in radiopharm procedures. (e.g., knowing the *maximum* range of alpha, beta, and gamma decay during radiopharm)
14. Understand the general use case for the common survey meters.
15. Perform source change calculations for HDR units.
16. Perform simple exposure rate calculations when given an activity, distance, and exposure rate constant.
17. Perform simple $1/r^2$ calculations to predict exposure rates.
18. Perform simple decay calculations using the half-life.
19. Perform effective half-life calculations.
20. Perform a neutron equivalent dose calculation with the above factor.
21. Use the concept of HVLs to reduce an exposure rate to safe levels.