Nuclear Engineering 150: Midterm 1 Study Guide

Disclaimer: This is not an official study guide. Stuff ~~might~~ **is** wrong. Use the lecture notes and book!

Note: Everything in this guide is from the text () or lecture, or office hours and should be cited as completely as possible.

Contents

1 Fundamentals

1.1 Atomic Masses

1. Atomic mass unit (amu): defined by the mass of a neutral carbon-12 atom.

$$m(^{12}\mathrm{C}) = 12\mathrm{amu}$$

2. A mixture of an element with various isotopes i with abundances γ_i is:

$$M = \sum_i \gamma_i M_i$$

   You can use this for the natural abundances, or if you just have a mixture of elements in a compound (like enriched uranium).