

Elective – Spring Semester Even-Numbered Years

CEM 485 Modern Nuclear Chemistry

Description: Elementary nuclear processes and properties; radioactivity, its measurement and its interaction with matter.

Credit: 3 credits (3 hours lecture)

Prerequisite: (CEM 141 or CEM 152 or CEM 182H) and (PHY 232 or PHY 184)

Recommended: (CEM 483 or CEM 384 or PHY 471)

Lecture Topics:

1. Atomic Nuclei
2. Decay Kinetics
3. Modes of Radioactive Decay (Alpha, Beta, Proton, Gamma)
4. Nuclear Reactions
5. Fission
6. Interaction of Radiation with Matter
7. Radiation Detectors
8. Nuclear Forces
9. Nuclear Structure (Models and Methods)
10. Nuclear Astrophysics