SIMON FRASER UNIVERSITY
NUCLEAR SCIENCE 344-3
Nucleosynthesis and Distribution of the Elements
(Spring 2008)

Instructor: Dr. Barry Davids; Office C9042; e-mail davids@triumf.ca

General Course Description: This course is a quantitative introduction to the nuclear and astrophysical processes by which the chemical elements have been and are formed and distributed throughout the universe. Topics include the cosmic abundances of elements and isotopes, elementary nuclear physics, thermonuclear reactions, big bang nucleosynthesis, stellar structure and evolution, neutron capture processes, the origin of the light elements, radioactive cosmochronology, and the techniques of experimental nuclear astrophysics. 3 lecture hours/week; 1 tutorial hour/week; 0 lab hours

Lectures: MWF 11:30-12:20, WMC 2507

Tutorial: M 13:30-14:20, WMC 3253

Office Hour: M 14:30-15:20, C9042

Grading: Homework 20%, midterm exam 30%, final exam 50%

Required Text: Bernard E. J. Pagel, "Nucleosynthesis and Chemical Evolution of Galaxies" paperback edition; Cambridge University Press, 1997

Optional Text: David Arnett, "Supernovae and Nucleosynthesis" paperback edition; Princeton University Press, 1996

Materials/Supplies: None

Prerequisite/Corequisite: Completion of 60 credit hours in a science program, including first year calculus, chemistry, and physics