Instructors:

John Flores, BNR 321; 797-8194, and Rachel Curry, GEOL 11; 797-3514


Lab Fee for this course is $100.00. Lab fees used to maintain equipment and purchase new equipment when needed.

Grading: 50% on the three one-hour exams, 35% on the final, and 15% on the laboratory exercises and lab reports. Each exam is split into a closed book portion followed by an open book portion. Approximate grading scale: A: ≥90%, B: ≥78-90%, C: ≥65-78%, and D: ≥50-65, <50 will not pass.

After completing this course, the student should be able to:

1. Define terms used in noise; recall the physics of sound, the physiology of hearing and noise induced hearing loss, and acceptable noise exposure criteria; use noise measurement instruments; and apply noise abatement controls within a hearing conservation program.

2. Define terms used in vibration; recall the physics of vibration and its adverse health effects; and evaluate and control vibration.

3. Define terms used in thermal stresses; recall the physics of heat transfer; discuss the biological/health effects from heat and cold; employ thermal measurement instruments and interpret results; and apply elementary controls.

4. Define terms used in nonionizing radiation; recall the physics of nonionizing electromagnetic radiation; discuss the biological/health effects from ultraviolet, visible, infrared, and radio-frequency radiation, extremely low frequency electric and magnetic fields, and lasers; apply measurement fundamentals for nonionizing radiation; describe program requirements; and apply elementary controls.

5. Define terms used in ionizing radiation; describe the sources of, the physics behind, and biological consequences of exposure to the four major types of ionizing radiation; explain radiation detection instruments, dosimetry, and attenuation versus shielding; be able to use a radio nuclide's half-life to determine its activity; and recall the agencies that regulate ionizing radiation.