



CHM 120: Environmental Chemistry

A one semester course designed primarily for students in an environmental studies program. Topics covered will include areas of inorganic, organic and biochemistry as they pertain to environmental issues and pollution. The formation of toxic substances in the air, water and soil will be discussed including the methods of their formation and how to remedy the problems created by them. Current topics will be included such as acid precipitation, heavy metal deposition, pesticides, polymers (PCB, PVC, etc.) and thermal pollution. Prerequisite: C or better in CHM 111, 112, 113, 114, or 116. Three lecture hours and three laboratory hours per week. Instructional Support Fee applies. Gen. Ed. Competencies Met: Scientific Reasoning and Discovery.

Course Student Learning Outcomes

1. Define Environmental Chemistry.
2. Understand the movement of major chemical constituents through the atmosphere, hydrosphere, geosphere and biosphere.
3. Understand major sources, reactions, and fates of chemicals in the environment.
4. Explain the energy balance on the earth, utilizing black body theory, albedo, and the greenhouse effect.
5. Understand the electromagnetic spectrum and the relationships between wavelength, frequency and energy.
6. Understand the effects of human technology on environmental systems.
7. Perform analyses to determine levels of chemical constituents in soil and water.
8. Determine the energy contents of fuels.
9. Understand the processes utilized in producing energy from renewable sources.

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1. Distinguish between the major categories of plastics utilized in society for the purposes of recycling.

Credits: 4

Program: Chemistry