Fundamentals of chemistry applied to air, soils, natural and oceanic waters and associated environmental problems. The chemistry of ecosystems, analysis of natural constituents and pollutants; transport and fate of contaminants, their monitoring and regulation.


The text covers the natural chemistry of air, water and soil, and urban air pollution, water and soil contamination, fresh and seawater, and wastewater treatment. You will be required to look at current global environmental topics reported in news wires and the internet. Main topics will be:

I. Sustainability and Green Chemistry
II. Stratospheric and tropospheric chemistry
III. Ground level air pollution and
IV. Health consequences of indoor and outdoor air pollution
V. Atmospheric energy balance and climate change
VI. Forms of energy production and environmental consequences
VII. Chemistry of natural waters, major water pollutants
VIII. Chemistry of the oceans
IX. Toxic chemicals- pesticides, herbicides, PCB’s, toxic metals
X. Solid waste and contaminated soil management
XI. Toxicology and Toxicity Testing

In addition, you will compile a Green Log, a notebook on materials you will gather about a specific topics covered in this class and how they relate to your personal life, and the application of the principles of Sustainability and Green Chemistry.

Grading:
45% Mid-semester exams (2)
25% Term paper in lieu of final exam
15% Homework assignments
15% Green Log