

UNIVERSITY OF CALGARY
DEPARTMENT OF CHEMISTRY
COURSE SYLLABUS
FALL 2022

COURSE: CHEMISTRY 321 – Environmental Chemistry

LEC	DAYS	TIME	ROOM	INSTRUCTOR	OFFICE	PHONE	EMAIL	OFFICE HOURS
L01	Tu/Th	15:30-16:45	SB 103	Dr. Kimura-Hara	SB 333	--	s.kimurahara@ucalgary.ca	Tu/Th 16:45 – 17:30

COURSE WEBSITE or Desire 2 Learn (D2L):

- **REQUIRED TEXTBOOK:** Environmental Chemistry, 5th Ed., by Colin Baird and Michael Cann, W.H. Freeman, NY

RECOMMENDED TEXTBOOKS:

- Elements of Environmental Chemistry, 2nd Edition, by Ronald Hites and Jonathan Raff, ISBN 978-1-118-04155-0
- Fundamentals of Environmental and Toxicological Chemistry: Sustainable Science, 4th Edition, by Stanley E. Manahan, CRC Press (2013)
- Environmental Chemistry: A global perspective, 3rd Edition, by G.W. vanLoon and S.J. Duffy, Oxford University Press

TOPICS COVERED:**Module I. Chemistry Review & Chemical Pollutants**

Chemistry Review of Fundamentals
Toxicology
Contaminants of concern: pesticides, persistent organic pollutants (dioxins, furans, PCBs), endocrine disruptors, toxic metals

Module II: Water chemistry and water treatment

Aqueous chemistry
Drinking water and wastewater treatment

Module III: Environmental chemistry in the biosphere

Chemistry and pollution of the atmosphere
Catalytic destruction of stratospheric ozone and Montreal Protocol
Greenhouse effect and climate forcing

Module IV: Energy and Soil Chemistry

Energy, Radioactivity, Radon
Soil

This course does not have a laboratory component.