

# New Course Offering

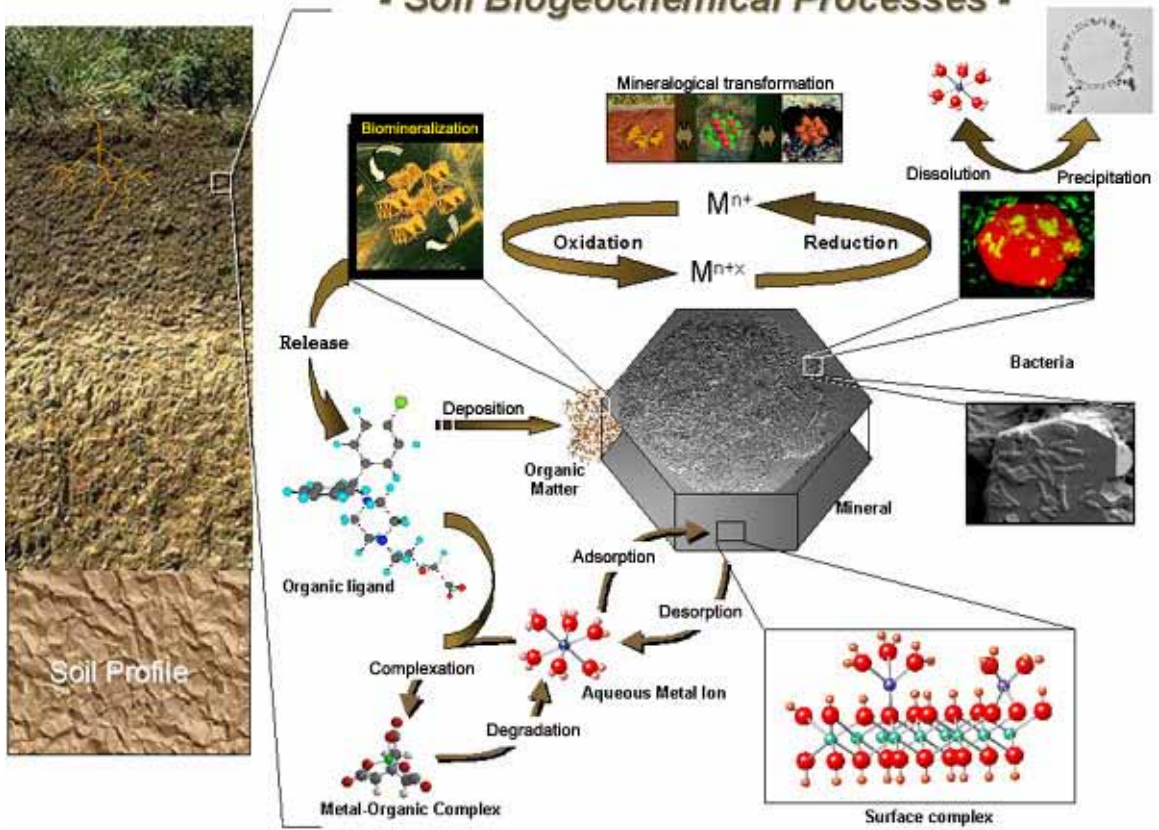
Spring 2010

ENV 4500 Environmental Biogeochemistry

Dr. Andrew Evans

**Course Description: A practical and quantitative treatment of soil-water-plant processes affecting chemical reactivity, transformation, retention, and bioavailability is provided. The course covers the primary areas of biogeochemistry: (I) a description of inorganic and organic soil components, (II) complex equilibria in soil solutions, and (III) specific adsorption phenomena at the solid-water interface, (IV) ion exchange and dissolution/precipitation of solid phases, (V) Computer modeling of chemical speciation.**

## - Soil Biogeochemical Processes -



Tentative topics ENV 4500 Environmental Biogeochemistry  
Spring 2010.

<b>Week</b>	<b>Topic</b>
1	Course Introduction, Pre-assessment
2	General controls on natural water chemistry
3	Activity coefficients/complex ion formation
4	Gases in water and aqueous equilibrium
5	Acids and bases/alkalinity
6	Dissolved organic carbon
7	Solid phase equilibrium
8	Adsorption Models/partition coefficients
9	Chemical Modeling Aqueous species/precipitation reactions
10	Spring break, no classes
11	Chemistry of Pit lakes
12	REDOX processes/sediment water
13	Geochemistry of water/clay mineral interfaces
14	Double layer theory
15	Vadose zone/pore water chemistry
16	Herbicide –pesticide chemical behavior soil/water system