GEOL 4300: Global Environmental Change

A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: *.*
Lab Hours/Week: *.*
OJT Hours/Week: *.*
Prerequisites: None
Corequisites: None
MnTC Goals: None

This class offers an interdisciplinary introduction to the principles of climate, ecosystems, and biogeochemistry needed to understand human impacts on the natural environment. We will also discuss global change prediction and the scientific bases for global change assessments and policy measures. Key topics are the physical climate system and its variability, the carbon cycle and related biogeochemistry and ecosystem processes, land use issues, the interactions among climate, ecosystems, and biogeochemistry, and the impact of global change on societally relevant parameters. Common threads in all of these topics will pervade the whole semester; these include the use of observations and models, the consideration of multiple scales of change (temporal and spatial), the interaction of human behaviors and choices with natural systems, and the linkages among aspects of global change science (may not be offered every year).
Prerequisites: ENVR 2000 or GEOG 2100 or Consent of Instructor.

B. COURSE EFFECTIVE DATES: 08/21/2017 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Carbon Imbalance
2. Climate Change
3. Ecosystem Integrity
4. Global Politics
5. Nitrogen Cycling
6. Soil Conservation
7. Water Resources

D. LEARNING OUTCOMES (General)

1. . describe the significance and limitations of seminal Global Environmental theories.
2. . understand both the need for and challenges to interdisciplinary and transdisciplinary approaches to complex global problems.
3. . select and defend conceptual and methodological approaches for a research project of their choosing.
4. . develop skills for oral and written presentation of knowledge learned in the course.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus
G. SPECIAL INFORMATION

None noted