A. Course Description

Credits: 4

Prerequisites:

MATH 115 College Algebra
OR
CHEM 107 Chemistry, Society and the Environment AND MATH 115 College Algebra
OR
MATH 115 College Algebra
OR
GEOL 110 Introduction to Earth Sciences AND MATH 115 College Algebra
OR
GEOL 118 Environmental Geology AND MATH 115 College Algebra
OR
MATH 115 College Algebra AND NSCI 201 Minnesota Ecology and Conservation Biology
OR
MATH 115 College Algebra AND NSCI 204 Environmental Science
OR
MATH 115 College Algebra AND PHYS 107 Energy and the Environment
OR
MATH 115 College Algebra AND PHYS 110 Introduction to Physics
OR
MATH 115 College Algebra AND PHYS 111 General Physics I - Algebra Based or instructor permission.

Lab Hours/ Weeks: Corequisites: None

Lecture Hours/ Week :

MnTC Goals: None

A fundamental question surrounds discussion of the current evidence for recent global climate change: to what extent is climate variation a normal feature of earth-system history? Through a series of investigations using data from a variety of climate archives, this course develops the history of earths climate on a range of time scales. We will investigate the scientific data used in recognition of multiple controls on climate, including long- and short-term patterns in solar output, plate tectonic and ocean circulation patterns, variations in earths orbit, ocean oscillations, ice sheet dynamics, and biogeochemical cycles. Having established this background knowledge, students in this course will be well-equipped to analyze the evidence for human-caused climate change. Although this course is intended primarily for non-scientists, it builds on established quantitative skills and basic
scientific knowledge of earth systems.

**B. Course Effective Dates: 12/15/2012 - Present**

**C. Outline of Major Content Areas:**

See Course Description for major content areas.

**D. Learning Outcomes (General)**

1. Familiarity with the geological, paleontological, and geochemical systems and materials that serve as proxies for past (Pre-historic) climate variations.
2. Ability to analyze and interpret data that come from various climate archives.
3. Ability to speak and write clearly and knowledgeably about earth’s climate history, and to accurately place scientific analysis of current climate change in that context.

**E. Learning Outcomes (MN Transfer Curriculum)**

This contains no goal areas.

**G. Special Information**

Note: First day attendance required except by instructor permission.