

Course Outline for: GEOL 1130 Climate Change: Science, Human Impacts and Adaptations**A. Course Description**

1. Number of credits: 3
2. Lecture hours per week: 3
Lab hours per week: none
3. Prerequisites: none
4. Co-requisites: none
5. MnTC Goals: Goal 3 – Natural Science and Goal 8 – Global Perspectives

This course investigates the evidence for past and present climate change, and what this implies for the future of the planet and society. At the end of this course, students will understand key principles of climate science, as well as identify and address human impacts and misconceptions. Students should also be able to contribute meaningfully to conversations about climate change and peoples' responsibility for ensuring a global future.

B. Date last reviewed: October, 2018**C. Outline of Major Content Areas**

- a. Past climate change
- b. Current climate change
- c. Natural causes of climate change
- d. Human causes of climate change
- e. Impacts on the physical world
- f. Impacts on humans
- g. The climate future

D. Course Learning Outcomes

Upon successful completion of the course, the student will be able to:

1. Explain the natural and human causes of climate change (3a, 3d)
2. Use data sets of past and current climate conditions to articulate how climate has changed through time (3b, 3c)
3. Communicate how a changing climate impacts environmental resources (3d)
4. Discuss and evaluate the role cultural, political, and economic differences have in how various populations are affected by climate change (8b)
5. Critically evaluate climate science to create an informed opinion on the role they have as a world citizen and the responsibility a world citizen has for ensuring a positive global future for all (3d, 8d)
6. Evaluate how responses developed by political and social institutions vary by country or region to meet the global challenges of climate change (8c)
7. Discuss, using scientific knowledge of climate change, how the above diverse solutions might impact affected populations, with an emphasis on the more vulnerable populations. (3a, 3d, 8b, 8c)

E. Methods for Assessing Student Learning

Instructors may use any or all of the following, but are not limited to:

- a. exams
- b. problem sets
- c. research projects
- d. papers
- e. Any other additional work assigned

F. Special Information

none