

## UDCC 1050-21: Hollywood Science: Fact or Fiction

### Instructor Information

Dr. Keith Miller  
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**Class meetings:** Monday and Wednesday 1:00 – 2:50 pm, Boettcher East 209

### Required Course Items

- Anthony, S., Ferret, T.A. and Bender, J (2003) What Should We Do About Global Warming? W.W. Norton, New York, NY. (purchase at Bookstore)
- Alley, R.B. (2000). The Two-Mile Time Machine: Ice Cores, Abrupt Climate Change and Our Future. Princeton University Press. Princeton, NJ. (purchase at Bookstore)
- An inexpensive calculator is required. It should have the capabilities for square roots, logarithms, and exponential (scientific) notation operations. You are responsible for understanding how to perform each of the operations on your calculator. **Remember to bring your calculator (or laptop) with you to every class.**
- Reichs, Kathy. (2000) Deadly Decisions. Scribner, New York, NY. (I will provide.)

### COURSE DESCRIPTION

The portrayal of science in modern cinema, television, and literature impacts the way many individuals view science and its relationship to society. However, producers and/or authors invoke their “literary or artistic license”, skewing the “real” science from which the center themes of these genres are based. Unfortunately, this leaves many with an incorrect perception of the actual science. This first year seminar is designed to introduce students to the scientific principles and potential ramifications of trace gas induced global warming, and principles surrounding forensic science.

### CLASS MEETINGS

The seminar will be predominately conducted in an active-learning environment. Students are expected to come to each class prepared to discuss the assigned topic and participate in integrated activities. These activities will include discussions, laboratory exercises and experiments that have been specifically designed to re-enforce the course material. We will also lecture over material that may not be found in the assigned readings. At times, we will ask you to work with other students to solve problems or answer questions. We encourage you to make the most of these interactions. Experience has shown us that other students often succeed in describing concepts where professors and instructors fail. Group participation is expected, and thus portions of these group activities will be graded.

**Class attendance and participation is mandatory.** A significant portion of your final grade will be assigned to each.

## READINGS AND DAILY ASSIGNMENTS

Assignments for each topic will be completed prior to class. These assignments will be from the assigned texts, modules, or supplemental material. When a reading is assigned, you are expected to come to the next class prepared to discuss the material. To facilitate these discussions, you will be required to turn in a paragraph describing your reaction to the assigned reading, and three (3) thoughtful questions. The paragraph should not merely be a summary of the material. When a worksheet from the module is assigned, it, or a photocopy of it, will be collected at the beginning of the period prior to aid our discussion and class activities. Each of these daily assignments will be graded, and returned to the student. One of the goals for this seminar is to help each of you learn how to critical evaluate a piece of scientific writing and convey your evaluation in a concise, written manner. I therefore expect to you improve throughout the quarter, and our grading of your written work will be reflective of this expectation.

Each of you will be required to monitor your individual contribution to global warming by keeping a journal of your daily activities. A list of specific activities that you should record will be summarized in more detail in a handout given to you during one of our first meetings. Later activities in the seminar will focus on how to use these data you are collecting to calculate your contributions.

## QUIZZES

I will periodically give a brief quiz at the beginning of the period. The quiz will be unannounced, but you will be able to use any notes you have taken while reading your assignments. You will not, however, be able to reference the text of the assigned reading during the quiz.

## WRITING ASSIGNMENTS/ORAL PRESENTATION

You will be required to complete three (3) writing assignments during the quarter. Two of the assignments will be short (4 – 5 pages) reaction papers on a topic covered in class or the readings. The third assignment will be an annotated bibliography on a research topic related to the seminar material. Further instructions will be provided at a later date. During week 9, you will be required to give the class a 10 – 15 minute presentation on your research topic. Specific format of the presentations will be decided in class. This presentation will count toward 10% of your grade.

## SERVICE PROJECT (optional)

The completion of a service component is not required for this seminar. However, if you choose to participate in service activities, the satisfactory completion of the required documentation and time requirements will release you from the third writing assignment. Specific service learning options/ideas will be discussed the first day of class. You will be required to commit to participating in service activities for credit by the end of the third week of the quarter. You may choose to work individually or as a team.

## GRADES

At the end of the quarter, you will be graded according to your performance on the assigned work, class attendance, and class participation. I encourage teamwork; thus, I grade on an absolute scale. Your final grade will be determined by the following scale:

Class attendance	10%
Class participation	15%
Daily Assignments/Quizzes	45%
Writing Assignments	20%
Oral Presentation	10%
Total	100%

## CELLULAR PHONE AND PAGER POLICY

I respect the need for each individual to stay in contact with family and friends. The use of cellular phones and pagers, however, is disrupting to the learning environment. Thus, I request that the ringers of all cellular phones and pagers be muted during class. If an emergency arises, and you need to make a call on your phone, I request that you quietly leave the room and conduct your conversation out in the hallway.

## LECTURE ACCOMODATIONS

We will make every effort to accommodate students diagnosed with a learning disability. We will do this in complete confidence. We do, however, request that any student requiring these accommodations inform me the first week of class. For further information, please see the University Disability Services' website at <http://www.du.edu/disability/dsp/index.html>.

## ACADEMIC DISHONESTY

While we advocate collaborative learning and teamwork, we also firmly believe that each individual should maintain the highest ethical standards in all of life's endeavors. As such, we support and will strictly enforce the Honor Code of the University of Denver. For your reference, we have included the links for the Honor Code Statement and Honor Code Procedures for Students below. For further information, please see the Office of Citizenship & Community Standards' website at <http://www.du.edu/honorcode/statement.htm> for the Honor Code Statement and at <http://www.du.edu/honorcode/studentprocedure.htm> for the Honor Code Procedures for Students.

## Tentative Course Outline

Week 1	Introduction; background on global warming; Assessment of Discoveries
	Discussion of "Taking Sides" article; global warming basics
Week 2	Visible and infrared spectroscopy of greenhouse gases (lab experience)
	Greenhouse gases characteristics: Lewis structures, polarity and infrared activity
Week 3	Concentration changes in greenhouse gases: the available data
	Creation and destruction of greenhouse gases in the atmosphere
Week 4	Ice Core Data (Alley Readings)
	Ice Core continued; Carbon Cycle
Week 5	View movie ( <i>The Day After Tomorrow</i> ); Discussion
	Assign <i>Deadly Decisions</i> ; Calculating individual contributions to greenhouse gases
Week 6	Forensic Science Introduction
	Principles of chemical detection
Week 7	Discussions on <i>Deadly Decisions</i>
	Lab experience and exploration
Week 8	Critiques of CSI and Bones episodes (assigned earlier in quarter)
	Lab experience: drug detection
Week 9	Oral Presentations
	Oral Presentations
Week 10	View movie ( <i>The Bone Collector</i> ); Discussion
	Concluding thoughts; Review