

Research Assignment

THE CONTEXT FOR THE RESEARCH ASSIGNMENT

Lectures will cover the major elements of climate and how natural forces cause climate to change, and the long-term record of climate change will be reviewed. The recent documentary movie "An Inconvenient Truth" reviews relatively recent climate changes and how we as people cause them. In lecture and discussions, we will talk about how our activities in our daily lives causes climate changes discussed in the movie. These daily activities, which include using electricity and transportation powered by use of coal, oil and gas, influence not only climate change but also our health.

THE RESEARCH ASSIGNMENT

The research assignment will direct you to learn more about how those activities we carry out daily impact climate and influence climate change. These activities include how we use the land, how we obtain electric power and how we get around in vehicles. A major goal of the research assignment is to not only increase student understanding of how we influence climates and climate change, but also to conduct research into ways we can do something about the major concerns we all should have for the climate change and health issues resulting from the use of coal, oil, and gas. The research topics include studies of the alternative methods of generating electrical energy and use of ethanol in our cars.

HOW THE RESEARCH ASSIGNMENT WILL BE CARRIED OUT

The class will be divided to groups. Each group will conduct research on one of the topics from the following list:

- 1) The factors are involved in energy generation by water,
- 2) The factors are involved in energy generation by wind
- 3) How energy may be generated by photovoltaics in California
- 4) The issues involved in energy generation from coal, in the United States and in China
- 5) The possibilities of your use of ethanol in your/your family's car
- 6) The impacts of human activities on air quality-health-climate in the central valley,
- 7) The impacts on people of oil refineries in Richmond
- 8) The impact of energy use on our growing and bringing our food to us
- 9) A study of the climate change demonstration program at Lawrence Hall of Science (this topic to include a visit to the Lawrence Hall of Science to view the program and to analyze its major points and to suggest additions or improvements).

To start the research assignment, each of the topics will be discussed in class. Then, each student will write their first, second, and third "most desired" choice of topic on

a piece of paper and hand that to the instructor at the next class meeting. Every attempt will be made to assign students to their first or second choice of topic.

The following class meeting will be devoted to getting the research started as follows:

First, the groups will meet in the classroom and students will exchange contact information; the instructor will meet with each group at the same class meeting to give students information specific to their topic and to clarify goals and expectations.

WHAT IS EXPECTED OF THE GROUPS

Each group will write a report of their research and present that research orally to the class. Each group will meet with the instructor each week for the first four weeks of the assignment.

At the first two such meetings, the group will present the sources of information being used and discuss them with the instructor.

At the third meeting, an outline of the presentation will be presented for discussion. That outline will be revised and further developed for discussion at the fourth meeting.

Groups may meet with the instructor upon request. The Friday class meetings will be set aside for discussion of the research assignment. The instructor will meet with each group two weeks and one week before the oral presentation.

WHAT IS EXPECTED OF EACH STUDENT

Each student will contribute to the group report and each student will write a separate statement of what they contributed to the group report. That statement will include sources of data, any illustrations or maps used, and any comments on the data. In addition, every student will write thoughtful comments on what they learned from every group presentation other than their own.

GRADES FOR THE ASSIGNMENT

The research assignment is worth 50 percent of the grade in the course. Grades for this research assignment will be based on: 1) group presentation – points to be considered include: breadth of coverage of topic, analysis of issues, relationship to theme of climate-climate change, 2) what the student contributed to the group and 3) the comments upon what was learned from each group presentation.

GOALS OF THE RESEARCH ASSIGNMENT

The research assignment is meant to enhance student understanding the impacts each of us has on climate change and on respiratory disease and how each of us may make a difference in changing these impacts. The lectures provide the overall context for the research assignment. As well, the assignment will enable students to enhance communication skills and become familiar with working in a group.