EPSc 116A: Resources of the Earth
Guide to Readings and Lectures

The goals of this course are to familiarize you with some basic information about resources (e.g., formation, location, usage) and to help you learn how to evaluate that information – how to gain what you need from a huge body of available data in order to make informed decisions. This is a challenging task due to the rapid increase in information (plus misinformation, disinformation, and opinion) and the increasing interconnectedness of the world (e.g., our cast-off wastes do not just affect us). The specific challenge here is to select some reasonable subset of the available data on resources, which you will be expected to learn, so that we can begin discussions about the ramifications of such facts.

These two tasks, mastery of facts and evaluation and critical appraisal of information, typically will be handled by dividing the coverage of each major topic into two parts, lecture and discussion. In some cases, lecture and discussion will be blended through the use of an interactive demonstration whose goal is to show you some process and to help you “discover” and mentally reinforce the underlying principles. This method of teaching and learning has great potential for students who are willing to be personally responsible for the factual material, so that they can participate knowledgeably in the discussions. My intention is for you to read about and to apply the course concepts weekly – not just before each exam!

There are several aids to help you master the material. First of all, be sure to read the “focal points” at the beginning of each chapter in your text. They provide an overview of the material and indicate the outlook taken in the chapter. In addition, before the reading of each assignment, I will make available to you a list of directed questions that will help you check your understanding of the material and indicate points of major concern to us in this course. Your answers for the directed questions will not be collected and graded, but you will be responsible for the material covered by the questions. (Occasional pop quizzes will cover some of these questions; knowing the answers allows you to get bonus points from these “positive” quizzes.) At regular intervals, I also will pass out summaries of points and concepts that I expect you to have mastered in the lectures and discussions. Please feel free to ask me questions about the material or my expectations about your understanding of it.

In most cases, we will spend two class periods on a given topic/chapter (see syllabus). I sometimes will announce one or more upcoming discussion questions. You should think about these on your own and be prepared to brainstorm about them with other members of the class. In a number of cases, I will assign as a short homework (10-15 minutes) a discussion question or thought question, whose written answer you will turn in at the next class period. On a regular basis, you will be called upon to act as a representative of your group during class discussions. You are always encouraged to act on your own behalf in class discussions or question periods. I also encourage you to give me suggestions for topics to be covered
My goal is to foster open discussion that is well grounded in facts. I welcome comments on all sides of issues. It seems to me that one-sided commentaries are pretty dull, and they certainly do not prepare us for challenges that other people might make to our opinions. In fact, I will be looking in the current media for well-informed editorials and articles that address opposite sides of current controversies surrounding resources and their usage, e.g., disposal of nuclear waste, global warming, opening of new mines. I encourage all of you to search for the same.

THE BOTTOM LINE: Be prepared to read, think, comment, and question. Science is not just a collection of facts. Most importantly, it is way of viewing and interrogating the world around us. Be prepared to take some of those hard-won “facts” and put them to use.