

# Syllabus for SMGT 315 Global Environmental Chemistry

## Course Description

Prerequisite: General Chemistry

This is a *college chemistry* course. Some mathematics at the level of college algebra will be involved.

Your text brings up an important environmental issue and then asks, “What chemistry do we need to know in order to evaluate the main pros and cons for this issue?” This is a radical departure from the traditional approach; I hope it will allow you to review some chemistry concepts that you already know and learn new ones in a more meaningful way.

## Course Learning Objectives

- Explore chemical principles, particularly the concepts of thermodynamics and kinetics, in the context of real-world environmental issues such as energy (including nuclear energetics), global warming, ozone-layer depletion, acid rain, and water resources.
- Develop skills in making critical judgments and assessing risks and benefits of decisions.
- Learn to use the chemistry vocabulary properly, particularly in the context of environmental chemistry topics.

## Course Materials

Information on course materials can be found in the [textbook section](#) of the SMGT website.

## Course Requirements

### Textbook Readings

There will be a significant amount of independent reading and researching involved in your knowledge acquisition. You should first study the assigned material from the textbook. The entire course content, except for three modules that are available only online, is presented in the textbook. I cannot overemphasize how important it is for you to carefully and patiently *study* (not just read) the material and make sure you understand the content. Most of the online materials, such as the narrated PowerPoint slides, are supposed to assist you in your studies but are by no means intended to substitute for your independent work as indicated above.

## Group Work

A group learning approach will be used to solve the end-of-chapter problems. Groups will be formed by the instructor, and a moderator will be selected for each group. Students who don't substantially contribute to the group work will be assigned a grade of zero for that group work. The moderator will submit the group's final answers. These answers will be graded and the score will constitute more than 20% of your overall score. The amount of partial credit the instructor awards for incorrect/incomplete answers will depend very strongly on the timing (early start, i.e., within 2 days of the start of the period allocated for the particular chapter; reasonably paced, i.e., not a last-day dash) and the level of discussions (both the frequency and the content).

You will have to complete two peer evaluations, one halfway through the course and one at the end of the course. The scores will be part of your overall score.

Of the seven group work scores, the lowest score will be dropped.

## Quizzes

A quiz will be given on each chapter, taken individually and consisting of 20 multiple-choice problems. Of the seven quizzes, the lowest score will be dropped.

## Final Exam

The final exam is comprehensive and contains 60 multiple-choice problems.

Note that the quizzes and the final exam are based on the **entire** content of the chapters, not merely the content of the slides or the group work problems.

## Grading Policy

Your grade will be determined by your performance on the following:

- 7 quizzes (480 pts)
- Final exam (180 pts)
- 7 group work assignments (240 pts)
- Peer evaluation of group work (100 points)

## Tentative Grading Scale

|           |    |  |           |    |  |           |    |
|-----------|----|--|-----------|----|--|-----------|----|
| >925      | A  |  | 800 - 824 | B- |  | 640 - 699 | D+ |
| 900 - 924 | A- |  | 775 - 799 | C+ |  | 600 - 639 | D  |
| 875 - 899 | B+ |  | 725 - 774 | C  |  | < 600     | F  |
| 825 - 874 | B  |  | 700 - 724 | C- |  |           |    |

A grade of Incomplete is given only when a student is unable to complete the assigned work for reasons that are acceptable to the instructor, such as a death in the immediate

family, a personal illness, etc. Reasons such as “I have too much other work to do” are **not** acceptable excuses.

**Policy on cheating:** A student caught cheating will receive a failing grade for the course. In particular, in your group work, ***you should not directly adopt any answer from any source.***