Chemistry in Context

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Class meetings: Online via Canvas Zoom. Canvas is Yale’s Learning Management System. Classes start on Monday, June 29. Class hours: Monday thru Friday, 9:15 to 10:30 am

Goal / Purpose Understanding basic chemistry facts and concepts. Applying that knowledge to appreciate how chemistry is intricately involved in everything we do in our daily lives. Making prudent decisions for sustainability which is essential for healthy ecosystems, healthy communities, and healthy economies.

Syllabus: Chapters (and most subtitles in each chapter) in the textbook will be covered in numerical order; for details, look in the Syllabus menu in Canvas and next page. In class, basic and important chemical facts and concepts mentioned in each chapter in the textbook will be discussed. Students need to study each entire chapter ahead of time to appreciate how these facts and concepts help us understand what goes on in our everyday lives, and what we can / should do.

Items needed Textbook (see above), either hard copy or ebook, computer, scientific calculator

Attendance All class meetings will be mainly discussions of basic chemical concepts and facts. There will be a number of demonstrations to illustrate these concepts and facts. The instructor intends to show all basic chemical concepts, facts, reactions, and other phenomena. He hopes these activities, the proper way to learn science, render each class meeting interesting enough so the students look forward to each class meeting.

Homework Select set of questions at the end of each chapter from the book, plus a few additional problems. These need to be submitted in Canvas.

Office hours From 10:30 to 11:30 am Monday thru Thursday from June 29 to July 30. Other times can be arranged by appointment.

Midterm tests A practice test will be offered in the week of July 6 prior to the first midterm test
Midterm test 1 July 10, Friday, 9:15 to 10:15 am, Online (Canvas), closed book
Midterm test 2 July 24, Friday, 9:15 to 10:15 am, Online (Canvas), closed book

Final exam July 31, Friday 9 am to 10:30 am, Online (Canvas), closed book
Grading: Homework (Problem sets): 10%
Midterm test 1: 25%
Midterm test 2: 25%
Final Exam: 40%

Letter grades: At the end of the semester, the class average of the overall scores (as calculated above) will correspond to a letter grade of B or B+. Overall scores slightly less than the class average will correspond to a B, whereas overall scores slightly greater than the class average will correspond to a B+. Other letter grades will be assigned with reference to the class average, and by utilizing discernible gaps in the distribution of overall scores.

Some friendly advice: Take this course with the attitude that you are taking it because you want to learn chemistry, not because you have to. Chemistry S101 classes start on Monday, June 29. Do not miss a single class. If you must, it is your responsibility to watch and learn Zoom recordings. Always keep yourself informed of everything that is happening in class, including demonstrations. The midterm tests and the final exam may have questions related to the demonstrations. Do not hesitate to seek help from Dr. G if and when needed. Do not procrastinate. Cultivate and display interest in the subject. To do well in the midterm tests and the final exam, make sure you can do all the examples we do in class, and answer all the questions / problems in the assigned homework sets on your own (with no help).

Syllabus and calendar: The following chapters in the book will be covered in the same order.

Chapter 1 Portable Electronics
Chapter 2 The Air We Breathe
Chapter 3 Radiation from the Sun
Chapter 4 Climate Change
Chapter 5 Energy from Combustion
Chapter 6 Energy from Alternate Sources
Chapter 7 Energy Storage
Chapter 8 Water Everywhere: A Most Precious Resource
Chapter 9 The World of Polymers and Plastics
Chapter 10 Brewing and Chewing
Chapter 11 Nutrition
Chapter 12 Health & Medicine