

General Course Information:

CHEM W1403.001

GENERAL CHEMISTRY I-LECTURES

MW 06:10P-07:25P NORTHWEST CO 501

Instructor Information

Dr. Robert H. Beer E-mail: rhb5@columbia.edu

COURSE OVERVIEW:

This is the first course in a two-semester sequence in general chemistry. The course is comprised largely of (1) a brief review of introductory chemistry concepts, followed by (2) atomic and molecular structure and bonding in depth and (3) a comprehensive survey of organic and inorganic chemistry. If time allows, the solid state and spectroscopy are additional topics of study.

You should have a solid understanding of high school chemistry and good basic mathematics skills to be successful in the course. There is no chemistry laboratory co-requisite, however, you must enroll in a recitation (discussion) section, W1405, associated with the course.

Full details for the course, including the syllabus and course calendar, will be provided once classes begin and you obtain access to the Columbia Courseworks site (<https://courseworks.columbia.edu/>) by registering for the course.

If you have any questions please feel free to email the course Lecturer.

INSTRUCTOR:

Dr. Robert H. Beer, Lecturer Office Address: 211 Havemeyer E-mail: rhb5@columbia.edu Telephone Number: 212-854-1665 (email preferred) Fax Number: (212) 932-1289 Department of Chemistry, Columbia University, 3000 Broadway, MC 3173, New York, NY 10027 Office Hours: Monday/Wednesday 5:00-6:00; 7:30-8:30 or by appt. Please email ahead of time, if possible

Teaching/Instructional Staff Assistants: Mr. Michael Eberhart Email: mse2125@columbia.edu Ms. Gisele Elbaz Email: ge2171@columbia.edu

REQUIRED TEXT: The text for the course is Chemical Principles (6th Edition) by Steven S. Zumdahl Houghton Mifflin Co. (2009). Ancillary materials, such as a Student Solutions Manual with detailed answers to the homework problems are available.

LECTURE AND RECITATION:The lecture course meets Monday and Wednesday evenings and presents primarily the conceptual aspects of the course. Enrollment in the recitation (discussion) section, W1405, is required; it is scheduled Monday-

Wednesday afternoons or evening either before or after lecture. The recitation is led by a teaching assistant to go over problem-solving strategies and homework.

GRADING: There are regularly scheduled quizzes in recitation (100 pts), three exams (100 pts) and a comprehensive final (200 pts) - you can drop 100 pts (an exam equivalent). The course letter grades are curved. Exams will be given during the lecture period. Quizzes will be given in the recitation sections. Suggested homework assignments are recommended, but not collected and graded.

TENTATIVE ORDER OF TOPICS:

REVIEW OF BASIC CHEMICAL CONCEPTS Chapter 2 Atoms, Molecules and Ions
Chapter 20 The Nucleus - selected portions Chapter 18 The Representative
Elements - selected portions Chapter 3 Stoichiometry Chapter 13 Bonding: General
Concepts

ATOMIC AND MOLECULAR STRUCTURE Chapter 12 Quantum Mechanics and
Atomic Theory Chapter 14 Covalent Bonding: Orbitals

ORGANIC CHEMISTRY Chapter 21 Organic and Biochemical Molecules

TRANSITION METAL CHEMISTRY Chapter 19 Transition Metals and Coordination
Chemistry

SPECIAL TOPICS Chapter 16 Liquids and Solids - selected portions on Solids Chapter
14 Covalent Bonding - selected portions on Spectroscopy

***TEXTBOOK: *** The REQUIRED textbook for the course is Chemical Principles,
6th Ed, by Steven S. Zumdahl It's recommended that students get the textbook
bundled with the Online Web-based Learning (OWL), an online homework &
tutorial software. This bundle is only available at the Columbia Bookstore at a
sizable discount. Chemical Principles + OWL access code ISBN# 9781111615536
(13-digit) ISBN# 1111615535 (10-digit) Bookstore Price: \$185 If students want to
purchase an OWL access code either because they purchased a used book or
because they prefer to purchase the eBook with OWL instead of the print book
bundle, they can purchase it by going to the OWL website (www.cengage.com/owl)
To do this go to "General Chemistry," click on "Buy an Access Code," scroll down to
the book (the Zumdahl-Chemical Principles 6e text is near the bottom), and then
decide which type of access/code you would like to purchase. For General
Chemistry, there are two options to choose from: OWL, homework-only (good for 24
months) ISBN# 9780495050995 Online Price: \$54.49 OWL, homework + eBook
(good for 24 months) ISBN# 9781111377212 Online Price: \$98.49

***SUPPLEMENTS: *** These student supplements can also be purchased at the
Columbia Bookstore: Student Solutions Manual for Zumdahl's Chemical Principles,
6th Edition ISBN# 9780618953363 Bookstore Price: \$86.10 Study Guide for
Zumdahl's Chemical Principles, 6th Edition ISBN# 9780618946587 Bookstore Price:

\$81.60 Students can also click on the "More Resources" link on the OWL site under the book cover in order to purchase the supplements.