

UN1604 PLACEMENT INFORMATION (REVISED- Aug 2021)

Students wishing to take UN1604 must take an online Chemistry Self-Assessment Examination which will be made available through a coursework page for UN1604 (<https://courseworks2.columbia.edu/courses/132757>). You can take the exam in any contiguous 2-hour interval between 12:01 am Tuesday, August 31 through until 11:59 pm Wednesday, September 1, 2021. It must be taken without use of outside resources, and in a manner consistent with the University's Honor Code. Performance on the placement examination will inform us, your instructors, about what to teach this year; therefore we will appreciate it if you do your best work to give us an accurate indication of your preparation. Your score on the placement examination will also partly determine whether you will be invited to register for UN1604 or for other chemistry courses.

During the term, we will assume knowledge of the specific introductory topics covered by the placement examination. Your score on the placement examination will also contribute in a partial sense to your final grade in CHEM UN1604. This exam, and the course in general, assumes a mastery of the topics covered in Chapters 1-8 of our textbook, Chemical Principles, 8th Edition, by Zumdahl and DeCoste. Students are advised to obtain a copy of this text before the term begins and to review Chapters 1-8 before the exam, with particular attention to the material in chapters 2 and 3.

The exam has two sections of questions. The first section covers prerequisite knowledge for 1604 including precision and accuracy, the periodic table, isotopes, composition and empirical formulas, concentration (molarity and other units), balancing reactions, stoichiometry, limiting reagent, equilibrium constants, and kinds of bonding. It assumes basic knowledge of the ideal gas law. The second half of the exam includes questions on the orbitals of hydrogen and electron configurations in atoms; hybrid orbitals, the geometry of molecules, oxidation number, molecular orbitals, and bonding. It also covers some concepts from thermodynamics and kinetics. It will assume knowledge of Lewis structures. The material in the second half will be covered during 1604 (chapters 9-15) and knowledge of it is not required for admission into 1604 but is considered a prerequisite for 2045. You can divide your time between the two parts as you choose.