



General Chemistry II

CHEM 1200 B

Spring --- 2021



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- ▶ **Instructor's web site:** www.getnickt.org
- ▶ **Class Days:** Monday/Wednesday
- ▶ **Class Times:** Starting 10:50 am (period 3)
- ▶ **First Lecture:** Wednesday, January 20, Room 316 Goodwyn Hall

Course description

General Chemistry II (3) Pr., CHEM 1100 and CHEM 1101. A detailed study of acid-base theory, kinetics, equilibria, and thermodynamics. Introductions to organic chemistry and nuclear chemistry will be included. Students who also take CHEM 1201 will conduct experiments which illustrate lecture topics.

Text

Chemistry 2e by OpenStax which is a free online book that can be downloaded as a pdf [here](#). Hard copies are also available for purchase in the AUM bookstore (\$59). A laboratory manual (\$35) must be obtained by students who are also enrolled for the lab course CHEM 1201B (see the CHEM 1201B syllabus).

*Note: if you took CHEM 1100 in the fall, you will have used the above text. But if you took the course in a previous semester you will have used the book by Cheng. We are **no longer** using that book.*

Course objectives

Chapters 11-21 (excluding chapter 18)

The course will study the dynamic transformations of matter, looking at the thermodynamics and kinetics of reactions. Acid-base, redox, and nuclear reactions will be studied as well, and the student will be introduced to organic chemistry and coordination chemistry. Problem solving, data evaluation, and analysis are stressed. Students should meet the following basic learning objectives:

Work with a variety of concentration units; Have a basic overview of hydrocarbons and functional groups; Understanding acid-base theory; Write and use equilibrium constants; Calculate pH in a variety of solutions; Work with free energy and entropy changes; Identify the geometry of coordination compounds; Balance redox reactions and determine cell potentials; Determine rate laws; Understand activation energies & temp dependence of reactions; Write chemical mechanisms; Balance nuclear reactions; Understand fission and fusion.

Coronavirus and the spring semester

Due to ongoing concerns with the coronavirus, AUM will continue to offer a very different learning environment in spring 2021. The smaller classrooms on the third floor of Goodwyn Hall have desks removed and will only accommodate 10-15 students in order to space out desks. This means for larger classes such as this one, only half the class can come to campus on Mondays and the other half can come on Wednesdays (assignments for days below). Each day, the other half class of students will be able to watch lectures by live-streaming. Students who prefer not to be on campus for any classes will be able to access the classroom lecture via live-streaming from home or other remote location. The instructor encourages all students to choose the live-streaming option. Also, there is no spring break this semester.

When to come to class on-campus

Students whose last name begins with A – L may come to Monday classes. Students whose last name begins with M – Z may come to Wednesday classes. Should all seating be taken, no additional students may enter the classroom. You cannot switch classes as there will not be additional seats available.

Live-streaming of lectures

Some of you will chose to take the course online only and will therefore not need to attend lectures on campus. You will view all the lectures via live-streaming, just like we did last semester. Lectures will not be recorded, so you need to attend (watch) at the scheduled class time, just like you would a regular campus class.

Live-streaming will be via Zoom and information below will enable students to log on to lectures (information will also be emailed at the start of the semester).

Join the Zoom lectures for this course on every Mon/Wed starting at 10:50 am starting Jan 20 and ending Apr 26 at the following link (paste link into browser):

<https://auburn.zoom.us/j/83047491992?pwd=NzRjMXhic1RxS1BldE1Ga1hTWnlNdz09>

Meeting ID: 830 4749 1992 Passcode 083209

Just to emphasize, it's very important that you treat the live-streaming like a regular lecture and take notes like you normally would in class. Otherwise, you will have no written personal notes to study for exam preparation.

If you would like to take all the lectures online, please contact the instructor via email as soon as possible so lists can be prepared.

Face coverings

No one likes them, but we will all have to continue to wear them in lectures, when near others, and in any AUM building. If you have some ideological objection to that and don't plan to wear one, you'd better skip the spring semester because all students, faculty, and staff will be required to wear them. The instructor will not begin class until everyone in the classroom is following the AUM safety guidelines. If you lose or forget to bring your face mask, the Dean's office on the third floor of Goodwyn Hall will have extras.

Instructor podium

All classroom podiums are now "encased" in plexiglass and instructors will lecture from behind them. It results in a very odd teaching and learning experience for all but is designed for the safety of everyone.

Blackboard

There were unfortunately many times in the fall when Blackboard was malfunctioning. Hopefully this won't be the case in the spring. The instructor uses Blackboard for the following:

- to post copies of the course syllabus
- to schedule exams, which will be taken online through the site and will be posted under the assignment section; students will submit test answers via Blackboard
- to post test grades
- for students taking my lab course (CHEM 1201B), lab assignments will also be posted and submitted on Blackboard (see the CHEM 1201B syllabus for details)

Instructor's Web site

www.getnickt.org – Here you will find important information about the course (and partly a backup in case Blackboard is down). The instructor will email a password at the beginning of the semester to access the link. In addition to links to the syllabus, the web site will contain the following information:

- links to a study review (Q&A format) for each chapter. These review questions will be representative of exam questions, so do NOT ignore them.
- pdf files for lecture notes for all chapters.
- Zoom link to live-streaming for lectures.

Registration

All students must be officially registered to attend classes. Contact the registrar's office if you have any doubts concerning your registration status.

Attendance

Students who will be attending class in person have an obligation to attend all lectures on time. If you are watching via live-streaming, you also have an obligation to watch at the same time. Lectures will begin promptly at 10:50 am (period 3) on Mondays/Wednesdays in room 316 Goodwyn Hall. Attendance roll (for both in-class and online students) will be taken for the first few weeks.

Note: Unless you have a pending emergency please switch off cellphone ringers in class as they are very distracting to all. If you are live-streaming, be sure to mute your microphone unless you are asking a question.

Need me? Zoom me!

Because of health concerns, there will be no in-person office hours with the instructor in the spring semester. Students can schedule a private or group Zoom meeting with the instructor if needed. Or, there will be time at the beginning and end of lectures to ask questions. Otherwise, most questions can probably be answered by email. The Instructional Support Lab (203GH) can also provide tutoring.

Grading

There will be FIVE ***multiple choice*** tests given online during the semester – each is worth **100 points** – and one test may be dropped (about 20-25 questions per test). In other words, only 4 tests will count towards the course final grade. If one of those tests is missed for any reason, it will automatically become the drop test. Material to be tested in each exam is as follows (see timetable for dates):

1st test	Chapter 11, 12
2nd test	Chapter 13, 14
3rd test	Chapter 15, 16
4th test	Chapter 17, 19
5th Test	Chapter 20, 21

The four tests add up to **400 points** total which will be converted to percent and overall course letter grade assigned as follows:

Letter Grade	% range	GPA value (out of 4)
A	90 - 100	4.0
B+	88 - 89	3.33
B	80 - 87	3.0
C+	78 - 79	2.33
C	65 - 77	2.0
D+	60 - 64	1.33
D	50 - 60	1.0
F	< 50	0

Grades for each test will be posted on the instructor's Blackboard page.

Make-up tests

Individual make-up tests will **NOT** be given. If a test is missed FOR ANY REASON it will automatically be dropped. You must take the test at the scheduled day and time. If a second test is missed a comprehensive make-up test will be given at the end of the semester to replace the second missed test.

Administration of tests

All students (those taking the class on campus or online) will be given open book online tests on the days/times listed in the course timetable (so if you attend class on campus, you do not have to come to class on test days). Tests will be given at the regular class time (10:50 am; all tests will be on Mondays) and last 75 min. This will be plenty of time to complete the tests which will be posted as Blackboard assignments. Answers should be submitted on Blackboard. You may use your lecture notes and textbook.

BUT do not fall into the trap of thinking that you don't have to study for the course because it's open book. Unless you already know the material, you will spend all your time looking through the book/notes for answers and will run out of time. Because the test will be online, most questions will be worded so answers cannot simply be found in the notes or textbook. There will be a lot of problem-solving questions and, again, questions will be unique to the tests – you must know the material in order to do well.

Withdrawal

If you withdraw from this (or any general chemistry) lecture class during the semester, our department requires that students must also withdraw from the lab course CHEM 1201.

Academic dishonesty

Academic Dishonesty (cheating, plagiarism, etc.) in any form will not be tolerated. All infractions will be dealt with according to the policies in the Student Handbook.

Accommodation statement

It is the policy of AUM to provide appropriate modifications, accommodations or auxiliary aids to any student with a documented disability as defined by Section 504 of the Rehabilitation Act of 1973, as amended, and by the Americans with Disabilities Act (ADA) of 1990. It is the student's responsibility to request accommodations and provide appropriate documentation. Students with disabilities are encouraged to contact the Center for Disability Services (CDS) in Room 101 Taylor Center or call CDS at (334) 244-3631 prior to or upon enrollment at AUM.

Learning outcomes

After completing this course, students will be able to do the following:

1. Understand and apply the physical properties of solutions
2. Understand and apply chemical kinetics
3. Understand and apply chemical equilibrium
4. Understand and apply the principles of acids, bases, and their equilibria
5. Understand and apply basic thermodynamic principles
6. Understand and apply the principles of redox reactions & electrochemistry
7. Understand and apply principles of coordination chemistry
8. Understand and apply the principles of nuclear chemistry
9. Know the basic organic chemical functional groups

Note: Significant home study is essential for any chemistry course. This is especially true for this course which contains some very difficult topics. It should also be stressed that the principles taught in general chemistry are the foundations for future chemistry courses – the more you learn now the better prepared you will be to tackle upper level chemistry courses. In addition to reading the text, students should study the review questions for each chapter. Also study closely the worked examples in lectures notes as well as new concepts and terms found in those notes.