

GENERAL CHEMISTRY II SUMMER 2021

Course Number: 01:160:162

Section: HA-HF

Course Portal: Canvas: <https://canvas.rutgers.edu/>

This course covers the second semester of the general chemistry curriculum. A goal of the course is to develop a deep understanding of underpinning chemistry concepts in order to apply them to practical problems.

LEARNING GOALS

Core SAS Curriculum Learning Goals Met by this Course

- Understand and apply basic principles and concepts in the physical or biological sciences.
- Explain and be able to assess the relationship among assumptions, method, evidence, arguments, and theory in scientific analysis.



Department Learning Goals Met by this Course

By the end of this course, students will be able to draw upon:

- *relevant scientific models*
- *representations at the macroscopic, submicroscopic (small particle), and symbolic levels—including mathematical formulae*
- *qualitative and quantitative reasoning skills*

...to demonstrate their understanding (at honors level) that:

1. “**Atoms:** Matter consists of atoms that have internal structures that dictate their chemical and physical behavior.”
2. “**Bonding:** Atoms interact via electrostatic forces to form chemical bonds.”
3. “**Structure and Function:** Chemical compounds have geometric structures that influence their chemical and physical behaviors.”
4. “**Intermolecular Interactions:** Intermolecular forces—electrostatic forces between molecules—dictate the physical behavior of matter.”
5. “**Chemical Reactions:** Matter changes, forming products that have new chemical and physical properties.”
6. “**Thermodynamics:** Energy is the key currency of chemical reactions in molecular-scale systems as well as macroscopic systems.”
7. “**Measurement and Data:** Chemistry is generally advanced via experimental observations.”
8. “**Visualization:** Chemistry constructs meaning interchangeably at the particulate and macroscopic levels.”

MATERIALS REQUIRED

- **Textbook:** “**Chemistry: Structure and Properties**”, 2nd Edition, by Nivaldo Tro. ISBN-13: 978-0-13-429393-6
- Scientific calculator (logarithms, exponential, powers, roots, etc.)

COURSE COORDINATOR AND LECTURER

Dr. Manese Rabeony. Wright Rieman Lab Room 378, Tel: 884-445-8609; e-mail: rabeony@chem.rutgers.edu

INSTRUCTORS

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CLASSROOM MANAGEMENT

We will be using Canvas (<https://canvas.rutgers.edu>) as a classroom management. You should check this site regularly. If you check it now, you will find a number of documents posted. If you are registered and a Rutgers Student, you will automatically be a “member” of the online class. You will need your NetID to login. During the course many additional

documents will be posted on the web site including lecture notes, practice exams, and useful information or explanations about important topics.

We will routinely use Canvas to post announcements. You must adjust Canvas settings to make sure that these announcements will automatically be sent to you by Rutgers email. Click on **account** tab (upper left) then click on **notifications**. Look at the “announcement” line in the Course Activity chart and in the “email address” click on the left side to be sure there’s a green checkmark. This green checkmark on the left side means that all announcements will be immediately sent to you by Rutgers email.

Lecture notes, as well as recordings of the zoom lectures will be made available on Canvas.

COURSE SCHEDULE

The “General Course Information” module on Canvas contains the course schedule, listing the planned topics covered in each lecture, along with the corresponding section of the textbook and the suggested textbook problems associated with those topics.

LECTURES

There are five 90-minute lectures per week. All lectures will be delivered synchronously on Zoom. The course schedule lists topics to be covered during each lecture. We highly recommend that you do the relevant reading in the text before lecture; this practice will greatly enhance your ability to absorb the concepts introduced and follow the problems being solved. You are responsible for all material discussed in lecture whether or not it is also covered in the book. You are also responsible for announcements made in lecture. If you must miss class due to illness or personal emergency, please contact a fellow student for handouts, notes, and assignments.

HOMEWORK

Please keep up with the material by studying the text, the lecture notes and by doing the homework problems listed in the syllabus. When doing problems, use the study guide only as a last resort. If you had to use the study guide to solve a problem, go back to that problem in a couple of days and try to solve it on your own. Use the recitation section to enhance your level of understanding. There will be homework review problems posted on the course website that you are highly encouraged to work on. The answers for these problems will be discussed in recitation section. The homework is not collected.

RECITATIONS

Recitation sessions are 55 minutes long and will be held online. The schedule of the online recitations sections is listed below:

Section	Day	Time	Instructor	Email
HA	MWF	12:30 - 1:25 PM	Gongotri Dey	gd342@chem.rutgers.edu
HB	MWF	12:30 - 1:25 PM	Guoyu Zhang	gz102@scarletmail.rutgers.edu
HC	MWF	12:30 - 1:25 PM	Bob Porjca	Porjca@chem.rutgers.edu
HD	MWF	12:30 - 1:25 PM	Harpal Sangari	hsangari@chem.rutgers.edu
HE	MWF	3:15 - 4:10PM	Bob Porjca	Porjca@chem.rutgers.edu
HF	MWF	3:15 - 4:10PM	Gongotri Dey	gd342@chem.rutgers.edu

Recitations are designed for smaller groups in which students can ask questions, and more easily converse with the instructor than would be possible in a large lecture. Recitations are used to go over homework problems and explain material that is covered during the lectures. Be prepared, and do not hesitate, to ask questions in order to use recitation time effectively. Any material that is not clear in the textbook or the lectures should be discussed during recitations. Homework problems will be discussed in detail during recitation class. Recitation is an integral part of the course and must be attended.

REVIEWS

There will be five review sessions. These will be on Thursdays immediately after lecture. We will concentrate on working exam problems relevant to the material we covered that week. There will also be some time for questions and answers about the week's material, quizzes, homework problems, etc. These sessions are optional and no new material will be presented.

QUIZZES AND EXAMINATIONS

Date	Quiz	Material Covered	Date	Exam	Material covered
16 July	Quiz 1	13.1-13.7	27 July	Exam I	13.1-16.8
23 July	Quiz 2	14.1-15.9	10 Aug	Exam II	16.9-19.5
30 July	Quiz 3	16.1-16.11	18 Aug	Final	13.1-20.12
6 Aug	Quiz 4	17.1-18.9			
13 Aug	Quiz 5	19.6-19.9			

✓ QUIZZES

Quizzes will be given every week except when there is an exam - see schedule above. Missed quizzes will count as zeroes.

✓ EXAMINATIONS

There will be two 90 – minute examinations. Exam I is on Tuesday 7/27, and Exam II Tuesday 8/10. Each examination will be given during the lecture time (1:40–3:10 pm). Each 90-min examination will account for 100 points. A three-hour final exam covering the entire course material will be given on Wednesday 8/18 from 1:40 – 4:40 pm. The final exam is worth 200 points. If you miss an exam on medical grounds, please provide a written explanation and supporting documents - a note from your doctor.

GRADING

There are a total of 500 points which can be accumulated in this course, distributed as follows:

	Points	%
Quizzes	100	20
Exam I	100	20
Exam II	100	20
Final	200	40
Total	500	100

There are no grade curves in the class – grades are assigned based on the overall percentage score according to a final scale to be decided at the end of the course.

LETTER GRADES

Letter grades, with a few important exceptions described immediately below, are assigned based on the Total Score as follows:

Total Score (TS)%	Letter Grade*
TS ≥ 90	A
90 > TS ≥ 80	B
80 > TS ≥ 60	C
60 > TS ≥ 50	D
50 > TS	F(*)

(*)The IMPORTANT EXCEPTIONS to the letter grade assignment include conditions that result in an automatic failure (grade of “F”) regardless of the Total Score. These conditions include:

- If you miss more than one Midterm Exam for any reason (excused or unexcused).

- If you get lower than a 40 % on the Final Exam.
- If you miss the Final Exam and do not have an approved excused absence.
- If you are caught cheating on any of the quizzes, midterm exams or the final exam, or are in any other violation of the policy on Academic Integrity.

What the above table implies is that, barring the exceptions described above, if you get a total score of 90 or above, you will receive an “A”; if you get a total score of 80 or above, you will get a B (or higher, e.g., a B+); if you get a total score of 60 or above, you will get a C (or higher, e.g., a C+), etc. What is guaranteed is that, given a particular total score, the grade you receive will NOT BE LOWER than that listed in the table.

DISABILITIES SERVICES

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability should contact the office of Disability Services at <https://ods.rutgers.edu> or tel: 848-445-6800.

Once you receive a Letter of Accommodations, please submit it to the course administrator as soon as possible.

Additional information can be found here: <https://ods.rutgers.edu/students/receiving-accommodations-online>

ACADEMIC INTEGRITY

Students are expected to adhere to the university policies on academic integrity and student conduct in all assignments, assessments and other matters regarding this course. These policies can be found online:

<http://studentconduct.rutgers.edu/academic-integrity/>

Use of external sources to obtain solutions to homework assignments or exams is cheating and a violation of the University Academic Integrity policy.

Cheating in the course may result in penalties ranging from a zero on an assignment to an F for the course, or expulsion from the University. Posting of homework assignments, exams, recorded lectures, or other lecture materials to external sites without the permission of the instructor is a violation of copyright and constitutes a facilitation of dishonesty, which may result in the same penalties as explicit cheating.

INTELLECTUAL PROPERTY

Lectures and materials utilized in this course, including but not limited to videocasts, podcasts, visual presentations, assessments, and assignments, are protected by United States copyright laws as well as Rutgers University policy.

The instructors of this course possess sole copyright ownership. Students are permitted to take notes for personal use or to provide to a classmate also currently enrolled in this course. Under no other circumstances is distribution of recorded or written materials associated with this course permitted to any internet site or similar information-sharing platform without my express written consent. Doing so is a violation of the university's [Academic Integrity Policy](#).

ADDITIONAL HELP

If, despite attending all lectures and recitation classes and working out all homework problems, you realize that some difficulties remain with understanding the course material, then seek help early! Office hours are posted. We will be glad to assist you as long as you take the initiative.

CHAIN OF COMMAND

In general, routine questions regarding course material, homework problems, quizzes, exam scores, absences, etc. should be directed first to your recitation instructor. Only for further information, or if the above procedure fails to resolve a particular problem, should you contact Dr. Rabeony, the course coordinator. The coordinator will not, for the most part, consider complaints in grading that are less than a few points. Questions regarding lecture material can be directed either to your recitation instructor (this is a very good use of recitation time) or directly to the lecturer, as time permits. Specific comments or requests are always valued.