

CHEMISTRY II CHEM 1212K Fall 2019

Instructor: Dr. Victoria Mariani, 216 Courtland North, Tel. (404) 413-5542, vmariani@gsu.edu

Prerequisites: required: Chem 1211K, (grade of C or higher)

Lecture: TR 5:30 pm – 6:45 pm, ALC 24

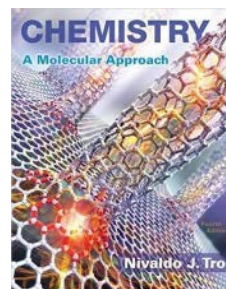
Office Hours: Monday and Wednesday 1:00pm – 3:00pm

Textbook:

Chemistry: A Molecular Approach, 4ed by Nivaldo Tro

ISBN-13: 9780134112831

ISBN-10: 0134112830



Supplemental: Preparing for Your ACS Examination in General Chemistry: The Official Guide, by Lucy T. Eubanks and I. Dwaine Eubanks

Required: scientific non-programable, non-graphing calculator

Tutorial Center: The tutorial center is in Sports Arena 125 Decatur St SE, First Floor

There will be a tutor specifically for 1212 there to answer your questions. This is a good time to ask questions on specific homework problems and lecture topics. Time: TBA

iCollege: PRINCIPLES OF CHEMISTRY II XLS GROUP ZQ FALL SEMESTER 2019

All announcements will be posted on icollege. Please check it often. All notes from class will be posted within 48 hours after class. **Please do not email me on icollege.** Email me at vmariani@gsu.edu only.

Exams: Exams will collectively be worth **300** points. **3?** examination grades will be counted toward the student's final grade. There will be no make-up exams for any reason. If you miss an exam due to an allowable excuse, you **MUST** come discuss this with me in my office within a week of the missed exam and bring the appropriate documentation. Students wishing to have an excused absence due to the observation of a religious holiday of special importance must provide advanced written request to each instructor by the end of the first week of classes. See: <http://codeofconduct.gsu.edu/files/2013/03/2013-14-Student-Code-IV.F.-Policy-on-Class-Attendance.pdf>

Only scientific non-programable, non-graphing calculators can be used for exams. Use of other calculators will be considered academic dishonesty.

Test scores will be posted on icollege. If there is a mistake or your score is missing, you must come to my office to discuss. *You are responsible for checking grades!* The icollege website is simply a tool to report grades, it is not my gradebook.

The instructor reserves the right to seat students during examinations.

Final ACS standardized exam: The final exam will be worth **200** points. The final exam is **Tuesday Dec 10th, 2019** starting at **4:15pm** in our classroom. The final examination is a multiple-choice test provided by the American Chemical Society (ACS) and is nationally normalized. Duration of exam is 110 min. It is a comprehensive exam covering Chapters 1-20. Yes, it includes all the material from CHEM 1211.

The final exam is mandatory, and it will not be dropped under any circumstance. Failure to take the final WILL NOT result in a grade as an incomplete, simply a 0 will be used as the final exam grade.

Quizzes: Quizzes will collectively be worth **100** points. There will be 10 quizzes on icollege. Missed quizzes will be recorded as a zero. A strict deadline for submission will be given for the quizzes. Any quiz not submitted by this time will not be graded. On-line quizzes will not be opened again after the due date.

Grade:

task	Point value	total points
3 In Class exams	100 pts each	300
10 On-line Quizzes	10 pts. each	100
Final exam (ACS)	200	200
Laboratory	200	200

800 total points

Points	Percent	Letter Grade
760 - 800	95% - 100%	A+
720 - 759	90% - 94%	A
696 - 719	87% - 89%	A-
680 - 695	85% - 86%	B+
640 - 679	80% - 84%	B
624 - 639	78% - 79%	B-
584 - 623	73% - 77%	C+
520 - 583	65% - 72%	C
480 - 519	60% - 64%	C-
456 - 479	57% - 59%	D
<456	<57%	F

Laboratory Grade:

You **must** attend your laboratory section. At the end of the semester your laboratory instructor will give me a list of students in their section and their grades. DO NOT switch lab sections without notifying ME. I am the only one to input the final grades

To receive a passing grade the student MUST:

1. Take the final examination of the lecture
2. Meet certain minimum requirements in the laboratory portion of the course:
Submit a final laboratory report
Take the final lab examination

Midpoint: Midpoint is on 10/15/2019. This is the last day to drop with a W.

Learning Outcomes:

The goals of this course are set forth by the chemistry department.

- The student should demonstrate a general knowledge of the chemical concepts of kinetics, equilibria, buffers, thermodynamics, electrochemistry, and states of matter.
- The student should demonstrate the ability to successfully apply math skills previously learned to chemical systems.
- The student should demonstrate the ability to apply chemical principles to problems in physics, biology, and medicine.

Secrets to Success: Those who are successful in this course: 1) **Review:** Read the text and/or look over power points before lecture. This is to familiarize yourself with the material before it is covered such that one can pick up information in class time. 2) **Reinforce:** Look over and/or recopy the notes from the lecture within a day of the class. This is to reinforce the material and to make you aware of any problem spots. 3) **Apply:** Regularly work problems from the text, sample exams and internet. If you cannot apply the material it will be difficult to answer questions on the exams. 4) If you have questions about the material or problems come to my office hours with questions

To pass this course you need to do more than simply memorize the material. You need to be able to “apply” the material. Reading the text or another source is real important for this. To be successful one must learn to “speak the language of chemistry”.

Your grade reflects your knowledge and application of the principles, not effort. You should strive to do as many problems as possible for each chapter using only your calculator and a periodic table. If you have to refer to your notes to finish a problem, you have not mastered that topic and you should study the relevant concepts further.

Notes: There will be no incompletes given for this course. Poor course performance is not rewarded with an incomplete. Do not ask. If you have a hardship, the Dean of Students is where you go. Please see: <http://deanofstudents.gsu.edu/student-assistance/emergency-withdrawal/>

There will be no grade changes in this course. I simply add up the points you earned. I cannot alter what you earned. Unfortunately, there is no score for “hard work”. If there are any issues with your grade or course work, you must come to my office (not email) before the *last day of class* (12/9/2019) to discuss. The day grades are due is a terrible time to address these issues!

Some Examples of Unacceptable Student Conduct:

- Leaving class before the lecture is over.
- Not following the testing procedures as instructed.
- Talking while your professor is lecturing.
- Arguing with the professor about student conduct.
- Not sitting up straight with paper directly in front of you during an exam.
- Not keeping your scantron or exam papers covered during an exam.
- Using a disrespectful tone of voice, harsh words or profanity.
- Making inappropriate gestures of any kind.
- Letting your cell phone ring audibly during a lecture or exam.
- Having a cell phone available during a quiz or exam.
- Arriving late for lecture or for an exam.
- Allowing your laboratory data or answers to be copied.

Exam Dates (Subject to change):

<u>no.</u>	<u>Date</u>	
1	Thursday	Sept 26
2	Tuesday	Oct 29
3	Tuesday	Dec 3
F	Tuesday	Dec 10 at 4:15! Note: final exam is earlier than class time!!

We will cover chapters 11-20 in this course:

- Chapter 11 Liquids, Solids, and Intermolecular Forces
- Chapter 12 Solids and Modern Materials (12.3-12.6 will work in with Chapter 11)
- Chapter 13 Solutions
- Chapter 14 Chemical Kinetics
- Chapter 15 Chemical Equilibrium
- Chapter 16 Acids and Bases (more equilibrium)
- Chapter 17 Aqueous Ionic Equilibrium
- Chapter 18 Free Energy and Thermodynamics
- Chapter 19 Electrochemistry
- Chapter 20 Radioactivity and Nuclear Chemistry (Sections 20.1 and 20.2. 20.6 will be covered in chapter 14)

The foregoing provides a general plan for the course, deviations from which may be necessary. The instructor will announce any such changes in class.

Topics for Exam 1:

1.1 What is Biochemistry

1.3 properties of water, intermolecular interactions, acid/base chemistry, buffers, pK_a

2.1 -2.6 amino acid structures, properties and reactivity, pI and peptide charge, peptide bonds, 3D protein 2^o, 3^o and 4^o structure, thermodynamics of protein folding (hydrophobic effect)

3.1 -3.2 protein purification, separation techniques

7.1- 7.3 hemoglobin structure and oxygen transport, cooperativity and allostery

Topics for Exam 2:

8.1 - 8.6, **8-ap** enzymes, classes of enzymatic reactions, Michaelis-Menten kinetics, enzyme inhibition

9 **notes** catalytic strategies, carboxypepsidase A mechanism

9.1 chymotrypsin Mechanism

10.1 - 10.4 allosteric enzymes, enzyme regulation

Topics for Exam 3:

11.1- 11.2 carbohydrates structure and reactivity

12.1 types of lipids

15.1- 15.3, reactions of metabolism and energy utilization by ATP/redox

13.1, 13.3 membrane transport

16.1 -16.4 glycolysis reaction, mechanisms, and regulation, fermentation reaction, gluconeogenesis

17.1 – 17.4 transition reaction and regulation, citric acid cycle reactions, mechanisms, and regulation

Topics for Exam 4:

18.1 – 18.6 biochemical oxidation-reduction reactions (redox review), electron transport chain, oxidative phosphorylation, regulation, membrane transport and shuttles

21.1 – 21.5 glycogen breakdown & regulation, glycogen synthesis and regulation

14.1, 14.2 signal transduction: GPCR's and tyrosine phosphorylation cascades

22.1 – 22.2 fatty acid catabolism,

27.3 diabetes

27.5 overview of metabolic processes

Note:

We may progress faster or slower throughout the semester. Topics from a previous section could be held for the next exam or topics from a later session could have been covered and added to the exam.

I only will add topics to the exam that have been covered!

****Please come to class regularly for exact topics covered on the exam.****