

BIOCHEMISTRY I CHEM 4600/4600H/6600 Spring 2020

Online course modification.

[This syllabus provides a general outline. Deviations may be necessary \(Please be patient as we work through this uncharted territory.\)](#)

*****Make sure to check the schedule on page 3 of this document*****

Modifications:

Instructor: Dr. Victoria Mariani, vmariani@gsu.edu

Lecture: Our online classroom will be located in two places:

iCollege – BIOCHEMISTRY I XLS GROUP RW SPRING SEMESTER 2020

iCollege is where you should start each session. All videos for the lecture will be posted for the class, (we are not allowed to have online lectures during class time,) on icollege website under content under online lectures. Please check this page often for frequent announcements, from Dr. M. Some portions of exams will be given on icollege.

Sapling Plus: Please see directions (under announcements called “sapling register directions” and under content, sapling in folder) for accessing **Sapling Plus** for the remainder of this course. It is free, and most importantly, **you all get access to the e-book and e-student companion for free!!!** This will count as ½ of each of the remaining exam grades and it will be used to administer the final exam.

Office Hours: Synchronous: via WebEx: W 12:30 to 2. You will see the WebEx link each week in our iCollege announcements. Additional WebEx or Zoom meetings can be requested and scheduled in a case by case basis if necessary.

Asynchronous: email vmariani@gsu.edu only. (Any emails sent via icollege will not be answered.)

on MF 12:30 to 2pm will get response ASAP (depends on volume), other times, 1 to 1.5 day turn around, (not including weekends).

Exams 4600/6600: There will be four class exams worth **100** points each. The lowest exam grade will be dropped. We already took exams 1 and 2.

Exams 3 and 4 will be graded as such:

Exam 3:

50 points from Sapling Homework: Chapter 11, Chapter 15, and Chapter 16. All homeworks are due 4/3.

50 points from icollege quiz: called Exam 3 to be opened at 12:30 to 12:45 (This means you have to start before 12:45, on Friday 4/3. You will have 45 minutes to complete 25 questions. Questions will largely be taken from my online lectures. Also, it could contain questions from the student companion and text (since I know you all have them now!)

Exam 4:

50 points from Sapling Homework Chapter 17, (due 4/12) Chapter 18 (due 4/19), Chapter 21 (due 4/26) and Chapter 14 (due 4/26).

50 points from icollege quiz: called Exam 4 to be opened at 12:30 to 12:45 (This means you have to start before 12:45, on Friday 4/24. You will have 45 minutes to complete 25 questions. Questions will largely be taken from my online lectures. Also, it could contain questions from the student companion and text (since I know you all have them now!)

Note: If you require more time for testing and filed paperwork with Access and Accommodations, you will get it.

Final Exam 4600/6600: There will be a required comprehensive final exam worth **150** points on **Wednesday April 29 6 8:00 am – Friday May 1 8:00pm**. This will be given as a homework on the Sapling website.

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.

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

Quizzes 4600: Quizzes are still open and need to be completed by **4/29/20 at 10am**. Quizzes will collectively be worth **50** points. There will be approximately 10-15 quizzes on icollege.

Grade Calculation 4600/6600: Please see below (original syllabus). There are no changes to grading scale.

Grade Calculation 6600: Exams will be weighed correctly to reflect 6600 grading.

Grade Calculation HON3690/CHEM 4950: A dropbox will be opened in icollege for assignment submission. Directions will be provided in announcements soon. Assignment is due by May 2 at 5pm.

Withdraw: From GSU: We are expanding the deadline **to withdraw** and receive a “W” rather than “WF” for up to two classes until **April 17**. Students will be required to consult with advisors to ensure that their path to graduation stays on track and there are no financial aid implications. Details on the application of this process for students will be forthcoming. Please note that due to these unforeseen circumstances, all W grades for the Spring 2020 semester will be exempt from the institutional W limit of six in a student’s academic career.

Schedule:

Before you start

1. Sapling Plus: make account
2. Sapling Plus: complete Practice Assignment Note: Once you do this, I will add 5 points on your highest exam score (exam 1 or 2). I will do this in my gradebook, not on icollege. Remember: the icollege website is simply a tool to report grades, it is not my gradebook.
3. For more Sapling Plus help: use video "Introduction for Sapling Learning" or complete Math, General Chem or Organic Chem review. (Also good for you MCAT and DAT studiers.)

Online Week 1: Monday March 30 --- Sunday April 5

1. Watch videos from lecture 3/30, lecture 4/1, and lecture Review for Exam 3.
2. Sapling Homework: Chapter 11, Chapter 15 and Chapter 16 DUE Sunday 4/5. Counts as $\frac{1}{2}$ Exam 3 grade.
3. Exam 3: Friday 4/3: starts at 12:30 and you can start no later than 12:45. 25 questions in 45 minutes from lectures before Spring Break, text questions and student companion questions.

Online Week 2: Monday April 6 --- Sunday April 12

1. Watch videos from lecture 4/6, lecture 4/8 and lecture 4/10.
2. Sapling Homework: Chapter 17 DUE Sunday 4/12. Counts as part Exam 4 grade.

Online Week 3: Monday April 13 --- Sunday April 19

1. Watch videos from lecture 4/13, lecture 4/15 and lecture 4/17.
2. Sapling Homework: Chapter 18 DUE Sunday 4/19. Counts as part Exam 4 grade.

Online Week 4: Monday April 20 --- Sunday April 26

1. Watch videos from lecture 4/20, lecture 4/22, and lecture Review for Exam 4.
2. Sapling Homework: Chapter 21 and Chapter 14 DUE Sunday 4/26. Counts as part Exam 4 grade.
3. Exam 4: Friday 4/24: starts at 12:30 and you can start no later than 12:45. 25 questions in 45 minutes from lectures, text questions and student companion questions.

Online Week 5: Final Exam Wednesday April 29 6 8:00 am --- Friday May 1 8:00pm

1. Watch video lecture Final Exam Review
2. Exam Final: open from 8am 4/29 to 8pm 5/1 on Sapling Plus.

Learning online, Netiquette and other things.

I implore you to **take serious measures to prepare for what it takes to successfully "learn from home/online"**.

For most of us, "home" is a place of refuge... one where we rest and relax. But in the coming weeks, you will be expected to create a space in your living domain for you to use as a "work" zone do that you can maintain the focus, diligence, discipline, and organization that you started 9 weeks ago when this semester began.

- 1) Consider zoning your home into "work", "fun", and "sleep" areas. Do not overlap. Sleep where you are supposed to and work where you designate. Be consistent above all else!
- 2) If you have a family or roommate(s), consider putting together a schedule so you each have your needs met if you need private time for WebEx presentations etc.
- 3) Does all of your technology accommodate your class needs? Check this! Can you use Sapling and icollege with ease?
- 4) How will you organize email? Consider making one folder "spring 2020 online". Add a subfolder for each of your courses. Within each course subfolder add separate subfolders for each week. Thus, filing your incoming emails per week within each course.
- 5) (VERY important) How do you learn? Are you visual, oratory or do you need to write it down? Keep with the best method. See website links for answers.

Remember- all your professors are a resource for you (in all other courses as well). Reach out to them to ask if you are struggling. Do this sooner rather than later. Stay calm and know this: We are all working together. We WANT you to successfully finish the semester. Please keep that in mind within all your correspondence. Of course, we will work diligently to mitigate the fine line between exercising compassion for deadlines/etc. and maintaining the integrity of the course that has been established for these past 9 weeks.

Stay safe, healthy, calm, and HOME 😊

Links for Online Student Learning:

<http://www.educationplanner.org/students/self-assessments/learning-styles-quiz.shtml> (learning style quiz)

<https://online.utah.edu/online-readiness-survey/> (address goal setting, priority setting..etc. Good for them to find their strengths and weaknesses)

<http://tutorials.istudy.psu.edu/learningonline/learningonline2.html> (addresses same as both above - but in same quiz)

Former syllabus:

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

Prerequisites: required: Chem 1211K, 1212K, 2400 and 2410 (grade of C or higher in Organic 2 (2410))
recommended: Biol 3800 (Molecular Cell Biology)

Lecture: MWF 12:30 pm – 2:00 pm, CS 608

Office Hours: TBA

Textbook:

Text: You can use 7th or 8th edition of text. I use the 8th edition for my reading assignments.

Biochemistry, 8th Ed., Berg, J.M.; Tymoczko, J.L.; Gatto, G.J.; Stryer, L., (2015), W.H. Freeman: New York, NY. [ISBN 1-4641-2610-0 Hardcover or ISBN 1-4641-8801-7 Looseleaf] or

Biochemistry, 7th Ed., Berg, J.M.; Tymoczko, J.L.; Stryer, L., (2012), W.H. Freeman: New York, NY. [ISBN 1-4292-2936-5 Hardcover or ISBN 1-4292-7396-8 Looseleaf]

Workbook: This is strongly recommended. The workbook includes learning objectives, self-assessment problems with solutions, and comprehensive problems. I will go over the questions from the text and workbook (see icollege “suggested problems”) during class. I recommend you use the 8th edition of the workbook.

Biochemistry Student Companion, 7th Ed., Deis, F.H.; Gerber, N.C.; Gumport, R.I.; Koeppe, R.E., (2012), W.H. Freeman: New York, NY. [ISBN 1-4292-3115-7 Paperback].

Biochemistry Student Companion, 8th Ed., Rhodes, C.; Fertuck, K.; Josephy, D.; Koeppe, R.E., (2015), W.H. Freeman: New York, NY. [Paperback]

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

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

iCollege: BIOCHEMISTRY I XLS GROUP RW SPRING SEMESTER 2020

All announcements will be posted on icollege. Please check it often. All notes from class will be posted within 24 hours after class.

Please do not email me on icollege. Email me at vmariani@gsu.edu

Exams 4600: There will be four class exams worth **100** points each. The lowest exam grade will be dropped. If you miss more than one exam, the 2nd missed exam will require proper documentation. See: <http://codeofconduct.gsu.edu/files/2013/03/2013-14-Student-Code-IV.F.-Policy-on-Class-Attendance.pdf>

There will be a required comprehensive final exam worth **150** points (on **Wednesday April 29 6 10:45 am** CS 608). 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.

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.

Quizzes 4600: Quizzes will collectively be worth **50** points. There will be approximately 10-15 quizzes on icollege.

Grade Calculation 4600:

1. Add up 3 highest exam grades, total points earned on quizzes, final exam grade.
2. Divide by 5 for %
3. Use scale to estimate grade

Semester Grade = (sum 3 best class exams + quiz points + final exam) / 5

A+ 97% A 93% A- 89% B+ 85% B 80% B- 76% C+ 68% C 62% C- 58% D 50% F <50%

Exams 6600: There will be four class exams worth **120** points each. The lowest exam grade will be dropped. If you miss more than one exam, the 2nd missed exam will require proper documentation. See: <http://codeofconduct.gsu.edu/files/2013/03/2013-14-Student-Code-IV.F.-Policy-on-Class-Attendance.pdf>

There will be a required comprehensive final exam worth **200** points (on **Wednesday April 29 6 10:45 am** CS 608). 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.

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.

Quizzes 6600: Quizzes will collectively be worth **40** points. There will be approximately 10-15 quizzes on icollege.

Grade Calculation 6600:

1. Add up 3 highest exam grades, total points earned on quizzes, final exam grade.
2. Divide by 6 for %
3. Use scale to estimate grade

Semester Grade = (sum 3 best class exams + quiz points + final exam) / 6

A+ 97% A 93% A- 89% B+ 85% B 80% B- 76% C+ 68% C 62% C- 58% D 50% F <50%

Learning Outcomes: The course will focus on developing an understanding of the biochemical principles and processes that govern the structure, interactions, functions & transformations of biomolecules; this will help students rationalize biochemical facts and solve problems. Upon successful completion of the course students will have the tools to be able to apply their knowledge of biochemistry to understand the causes of human diseases, as well as applications of biochemistry in medicine, agriculture and the environment.

Course Objectives: A comprehensive and integrated review of modern biochemistry with emphasis on proteins, enzymes, nucleic acids, lipids, carbohydrates and metabolism. We will examine biomolecular structure-function relationships, concepts of enzyme function, regulation, bioenergetics, metabolism, gene expression, and characterization of biomolecules. Organization, transport and signaling in cells will also be examined. Principles of acid/base chemistry, redox, organic mechanisms, kinetics, and thermodynamics will be applied throughout. **Working knowledge of these topics covered in 1211, 1212, 2100 and 2410 is expected PRIOR to taking biochemistry.**

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, companion, sample exams and internet. If you cannot apply the material it will be difficult to answer multiple choice 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 biochemistry”.

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* to discuss. The day grades are due is a terrible time to address these issues!

Exam Dates (Subject to change)

no.	Date	
1	Friday	February 7
2	Friday	February 28
3	Friday	March 27
4	Friday	April 24
F	Wednesday	April 29 @10:45 am

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.****