

Organic Chemistry / Biochemistry II – CHM 3218 Syllabus

Fall 2024: Tues./Thurs. 7th/8th Periods (1:55pm-3:50pm) in Flint 50

Instructor:

Rebecca Butcher, butcher@chem.ufl.edu

Office hours: Thurs. 4-5pm and Fri. 2-3pm and by appointment (schedule by e-mail) in CCB302B

Graduate Teaching Assistants:

Melisa Gonzalez, gonzalez.m1@chem.ufl.edu, office hours: TBD

Surasree Rakshit, s.rakshit@chem.ufl.edu, office hours: TBD

Undergraduate Teaching Assistants:

TBD

For virtual office hours, please notify the TA at least 5 minutes in advance of the start of office hours if you are going to attend.

Course Description. This class covers material commonly found in undergraduate biochemistry courses, with an emphasis on the application of concepts from organic chemistry. Topics will include amino acids and proteins, enzyme structure, mechanisms and kinetics, primary metabolism, and nucleic acid structure and metabolism.

Prerequisites. Students should have taken and passed either CHM 2210 and 2211 or CHM 3217.

Textbook: Principles of Biochemistry by David Nelson and Michael Cox, 6th, 7th, or 8th Edition, WH Freeman and Company. Handouts, recommended practice problems, and additional course material will be posted on the Canvas site.

Lecture schedule. A tentative lecture schedule with recommended reading is posted on the Canvas site. However, as the semester progresses, this schedule may be updated depending on how quickly we progress through the course material. Please make sure you have the most up-to-date version by checking the date in the file name of the lecture schedule.

Exams:	Exam #1	Sept. 24
	Exam #2	Oct. 24
	Exam #3	Nov. 21
	Final Exam	Wed., Dec. 11, 7:30-9:30am, Flint 50

All in-term exams are held at our regular class time in our regular classroom Flint 50. Out of the three in-term exams, you can replace the lowest grade with your final exam grade, or, if you are happy with your three in-term exam grades, you do not have to take the final. The exams will emphasize lecture material, in-lecture problems, and problem sets. Much of the lecture material is not in the textbook. So, come to every class and take detailed notes!

Absences: If you must miss an exam for one of the following approved reasons(<https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/#absencetext>), you must notify me as early as possible, and accommodations will be made.

Problem sets: Problem sets will be posted each week after Thursday's lecture and will be due on Canvas the following Monday at 11:59PM. For each problem set, you will receive half of the points for a good-faith attempt at all questions, and you will receive the other half for answering correctly a question chosen at random for that problem set. Problem sets will be worth 20% of your total grade. Your lowest 2 problem set grades will be dropped.

Participation: You will be awarded a participation grade for in-class group problem solving worth 5% of your grade.

Grading:

Best two in-term exams:	25% each
Remaining in-term exam -OR- final exam:	25%
Problem sets:	20%
Participation:	5%
Total:	100%

Course grades will be assigned according to the following cut offs: A: 90-100%, A⁻: 86-89%, B⁺: 82-85%, B: 78-81%, B⁻: 74-77%, C⁺: 70-73, C: 66-69%, C⁻: 62-65%, D⁺: 58-61%, D: 54-57% D⁻: 51-53%, E≤50%. For information on UF's grading policy, see: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

Accommodations for Students with Disabilities: Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. Contact the Disability Resources Center (<http://www.dso.ufl.edu/drc/>) for information about available resources for students with disabilities.

Academic honesty: I expect each of you to follow the Student Honor Code, available on the web (<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>)

You are expected to:

- uphold the highest standards of academic integrity in the student's own work,
- refuse to tolerate violations of academic integrity in the University community,
- foster a high sense of integrity and social responsibility on the part of the University community.

Violations of the Honor Code will be reported to the Dean of Students, and may result in failure of the assignment in question and/or the course.

Course Evaluations: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

U Matter, We Care: Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our online campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 911.

Distribution of course materials. Lecture materials, handouts, and problem sets used in this course may not be distributed to outside parties without Prof. Butcher's permission.

Tentative Lecture Schedule:

Date	Lecture Topic
Aug. 22	Review of organic chemistry principles; Introduction to biomolecules
Aug. 27	Stereochemistry; Thermodynamics/kinetics; Abiotic synthesis
Aug. 29	Non-bonding interactions
Sept. 3	Acid/base equilibria
Sept. 5	Amino acids and proteins
Sept. 10	Protein sequencing; Protein synthesis; Protein structure
Sept. 12	
Sept. 17	DNA structure; DNA synthesis; DNA sequencing
Sept. 19	RNA structure
Sept. 24	Exam #1, Period 7-8, Flint 50
Sept. 26	Introduction to enzymes, proteases, transpeptidases
Oct. 1	
Oct. 3	Enzyme kinetics and inhibitors; Enzyme inhibitors
Oct. 8	Carbohydrates, Bioenergetics, ATP
Oct. 10	Glycolysis I
Oct. 15	Glycolysis II; Fates of pyruvate
Oct. 17	Citric acid cycle I
Oct. 22	Citric acid cycle II

Oct. 24	Exam #2, Period 7-8, Flint 50
Oct. 29	Gluconeogenesis, Pentose phosphate cycle
Oct. 31	Fatty acid catabolism
Nov. 5	Amino acid catabolism
Nov. 7	Oxidative phosphorylation
Nov. 12	Lipid biosynthesis
Nov. 14	Amino acid biosynthesis
Nov. 19	Nucleotide biosynthesis
Nov. 21	Exam #3, Period 7-8, Flint 50
Dec. 3	DNA replication; RNA transcription and processing; Protein translation
Dec. 11	Final Exam, Wednesday @ 7:30-9:30am, Flint 50