

# Chemistry 351 - Spring 2021

Biochemistry Metabolism (CRN: 33041) Online: 3 Credits



## CHEM 351: Biochemistry – Metabolism

**Instructor: Dr. S. Ryan Oliver**

**Meeting Times: MWF 2:15 – 3:15 pm via Zoom**

**Office Hours: Wed 9-11 am via Slack**

**Email: [sroliver@alaska.edu](mailto:sroliver@alaska.edu)**

**Phone: 907 474 5621**

## Course materials

The following are *required* for the course and can be purchased in the UAF bookstore or elsewhere:

- *Principles of Biochemistry*, 7<sup>th</sup> edition. Authors: David L. Nelson and Michael M. Cox ISBN 978-1-4641-2611-6 (Hardcover); [Sapling Learning Subscription for online Homework](#)
- Packback subscription, online classroom discussion platform. Email sent with your login information.
- [Slack account registration](#) (Free!) – See Blackboard for registration instructions
- [Course syllabus](#) is linked and available on Google docs and sheets. Link available on Blackboard.
- A University of Alaska email address is required for all communication in the class. This also provides access to the Blackboard system for individual scores and grades.
- [Link to Course Schedule](#)

## Important Dates

Monday, Jan. 18	Alaska Civil Rights Day (No Class)
Friday, Jan. 22	Last day for student and faculty-initiated drops (100% refund)
M-F, Mar 8-12	Spring Break
Fri, Mar. 26	Last day for student and faculty-initiated withdrawals (W on Transcript)
Th, April 29	Final Exam

## Course Information

Biochemistry of metabolism. Topics include: chemistry of amino acids and its implication, protein structure-function, enzyme catalysis, glucose and glycogen metabolism and regulation, bioenergetics, lipid metabolism and biomembranes, amino acid metabolism and regulation of metabolism. Biomedical relevance and contemporary techniques will be addressed if appropriate. Prerequisites: CHEM F321.

## Course expectations and outcomes

Students are expected to attend class virtually; attendance will be monitored from in class responses. Each day *before* class the student should read and digest the portion of the textbook appropriate as per the class schedule (online), including example questions. *Active learning* involves the student using their sensory motor cortex (sight, smell, sound, taste and touch) in addition to their intelligence, to solidify through practice a concept the student has just read or heard about. Supplementing the course catalog, the course goals are to continue build the student's skills solving biochemical problems, reading critically, formulating questions, and communicating information assimilated throughout the course by completing exams. Class conduct should be professional as well as respectful of the rights other students to constructive learning experience.

## Grading

Grades will be posted to blackboard, which can be accessed from the UAF homepage. Class grades may be adjusted (curved) from the following schedule only in the students' favor.

	Points	Grade Range	Letter Grade	Points
Group Projects	400	100 - 90%	A	900-1000
Quizzes	100	89 - 80%	B	800-899
Homework	150	79 - 70%	C	700-799
Discussion Board	100	69 - 60%	D	600-699
Lecture Groupwork	100	59% or less	F	< 600
Final Exam	150			
Total	1000			

The instructor reserves the right to drop any student from class if that student has missed an exam without an excused absence, not participated in the online discussion, appears to be failing as of Friday, January 22, 2021, or has many zeros for class participation grades. Students will be notified once via email before the drop; if the student corrects the deficiency, the student may remain in this class. The last day for instructor initiated withdrawal is Friday, March 26, 2021 (W grade appears on academic record). An incomplete grade will only be assigned if a student misses the final exam for an outstanding reason, such as a medical problem, a death in the family, etc.

## Course Policies

**Attendance:** Regular attendance to online lectures is expected to ensure consistency in discussions and presentations. Active student participation is essential and will be accounted for in the final grade. If you are unable to attend class, you should contact the instructor in advance. Every Friday, in particular, is dedicated to discussion and groupwork and will be student driven so attendance is needed.

**PackBack interactive discussion:** Being in an online course can feel like an isolating experience. The goal of this interactive component of the course allows students to link the digital world and real world with concepts covered in this course. PackBack is a moderated discussion board that is student-driven. The goal is for you to develop a better understanding of the topics and to spark your curiosity of events in the world. In order to receive your points per week, you must **post at least 2 Answers relevant to our class subject matter** per week. By answering questions, the goal is to build some level of engaged community and collaborative learning driven by student interests. Your question and answers for each module are due by 11:59 PM on the respective due date provided in class. Before you start posting, be sure to read the Community Guidelines found in the tutorial on Packback. If your post doesn't follow the Packback Community Guidelines, there is a chance it will be removed and you won't receive points for that post.

**Paper discussions:** Research paper(s) pertinent to topics addressed in readings, unit videos, and other exercises will be discussed with respect to rationale, hypothesis, research data, and analysis. Papers will be

discussed using Packback and in class discussion. Papers will be available to start working on **one week prior** to the due date. These discussions are important to translate science knowledge into understanding i.e. the application of science.

**Quizzes:** Each chapter will have a quiz associated with it and will be delivered via Blackboard. A time window will be made available for students to login and take the quiz. Quizzes will consist of 5 questions from the lecture material and will be timed. Importantly, makeup quizzes will only be allowed with pre-approval of the instructor or with an acceptable, documented reason such as unexpected illness, family emergencies, or other unavoidable events. The format of a make-up quiz could vary from the original. Alternatively, an oral quiz may also substitute if acceptable with student.

**Lecture Groupwork:** Students will receive adequate preparation time for research article discussions and in class assignments. Scoring of discussions will be evaluated based on participation in class. Undergraduate students will work with assigned graduate students to drive discussions and complete assignments.

**Projects:** Group projects will be assigned throughout the semester. Students will work in small groups and turn in projects together. Details and rubric for projects will be uploaded to Blackboard.

**Homework:** Questions pertaining to lecture material will be uploaded onto Blackboard and students are required to work problems out of their own (no groups allowed) and submit answers on Blackboard. Homework problems of key topics will help you check whether you understand the concepts fully, and also help to integrate the material into the greater context. Homework is due on Monday by 11pm (AK time).

**Literature reading and discussion:** Each week at least one piece of primary literature will be assigned and uploaded onto Perusall. Students will be required to read and participate in a discussion on the Perusall website. In addition, students will participate in an in class discussion of papers and clinical applications on every Friday. Registration instructions for Perusall will be given during the first day of class as well as on Blackboard.

**Work Ethic:** It is expected that all work turned in by each student is work completed by the student. Student's submitted work must be conducted and written by that student. Any copying or plagiarism will earn a zero for that assignment and will be reported to the University. All work must be that of the student and not homework help sites (Chegg), peers, tutors, etc. Anyone caught using these resources on assignments strictly told to not use them will earn a zero for the assignment and will be reported to the University.

**Late assignments:** Are not accepted. Students are given at least one week to complete assignments.

## Ethical considerations

The Chemistry and Biochemistry Department *Policy on Cheating* states: *Any student caught cheating will be assigned a course grade of F. The students academic advisor will be notified of this failing grade and the student will not be allowed to drop the course.* Examples of cheating include, but are not limited to:

- Copying another student's answer while taking a quiz or exam
- Using another student's clicker for any reason
- Using another student's work while writing lab reports

Students must also adhere to UAF policies, the student code of conduct as well as the University of Alaska Honor Code, which states: *Students will not collaborate on any quizzes, in-class exams, or take-home exams that will contribute to their grade in a course, unless permission is granted by the instructor of the course. Only those materials permitted by the instructor may be used to assist in quizzes and examinations. Students will not represent the work of others as their own. A student will attribute the source of information not original with himself or herself (direct quotes or paraphrases) in compositions, theses, and other reports. No work submitted for one course may be submitted for credit in another course without the explicit approval of both instructors. Violations of the Honor Code will result in a failing grade for the assignment and, ordinarily, for the course in which the violation occurred. Moreover, violation of the Honor Code may result in suspension or expulsion.*

**Use of Chegg (or other similar sites) on Graded Assessments constitutes an Academic Integrity Violation and will result in strict adherence to the Department Policy on Cheating. (Yes I will check).**

## **Student protections and services statement**

Every qualified student is welcome in my classroom. As needed, I am happy to work with you, disability services, veterans' services, rural student services, etc to find reasonable accommodations. Students at this university are protected against sexual harassment and discrimination (Title IX), and minors have additional protections. As required, if I notice or am informed of certain types of misconduct, then I am required to report it to the appropriate authorities. For more information on your rights as a student and the resources available to you to resolve problems, please go the following site: [www.uaf.edu/handbook/](http://www.uaf.edu/handbook/)

## **Student success**

There are a large number of resources to help students who would like to perform at their best. The student may make an appointment to see the instructor for help. (The instructor will attempt to reply to email questions within 24 hours during the school week.) The Chemistry and Biochemistry Department has established the Chemistry Learning Center (CLC), which offers student led instruction. Students may also see a tutor for additional assistance.

## **Disabilities**

Students with a physical or learning disability are required to identify themselves to the Disability Services office, (907) 474-7043, located in the Center for Health and Counseling. The student must provide documentation of the disability. Disability Services will then notify the instructor of special arrangements for taking tests, working homework assignments, and doing lab work.