

**Biochemistry- Nucleic Acids**  
**CHEM 3813**  
**Spring 2020**

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Teaching Assistant:  
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University of Colorado Anschutz Medical Campus  
Dept. of Biochemistry and Molecular Genetics

**Class Schedule:**    **Now online**  
Synchronous class on Mon, Wed, Fri 8:00am-8:50am MDT  
zoom url: <https://udenver.zoom.us/j/331133045>

**Office Hours:**    **Now online**  
Tuesday 10:00am-11:00am  
Thursday 10:00am-11:00am  
or by appointment as needed  
zoom url: <https://udenver.zoom.us/j/346421627>

**Textbook:**        Lehninger Principles of Biochemistry, 5<sup>th</sup>, 6<sup>th</sup>, or 7<sup>th</sup> Edition  
ISBN-10: 1-4641-2611-9  
An electronic copy of the 5<sup>th</sup> edition is available freely online

**Homework:**    Varied types of homework will be assigned throughout the term. A total of 6 color picture essays (CPE's), each covering one chapter of the book will be due throughout the term. 3 additional 10pt homework assignments will also be assigned. All assignments will be turned in through Canvas.

**Exams:**        There will be 1 mid-term exam and a comprehensive final exam each worth 100 pts.

**RNA structure Report:**    Each student will prepare a report on an RNA or DNA structure of their choosing and create a short movie highlighting its 3-dimensional structure.

<b>Grading Summary:</b>	homework/CPE's	150 points
	midterm and final exams	200 points
	RNA structure report	100 points
	total	450 points

CHEM 3813-1 Spring 2020  
Tentative Schedule (subject to revision)

Date		Topics Covered	Assessment	Reading Chapter
30-Mar	Mon	Syllabus, Intro		
1-Apr	Wed	Nucleotides and nucleic acid structure		8
3-Apr	Fri	Nucleic acid chemistry		8
6-Apr	Mon	Nucleic acid synthesis and sequencing		8
8-Apr	Wed	Recombinant DNA	CH8 CPE due	8 and 9
10-Apr	Fri	Restriction enzymes and molecular cloning		9
13-Apr	Mon	Mutagenesis and genome editing technologies		9
15-Apr	Wed	High throughput sequencing and genomics	CH 9 CPE due	9
17-Apr	Fri	Catch-up		9
20-Apr	Mon	DNA Topology		24
22-Apr	Wed	Nucleosomes and accessing DNA		24
24-Apr	Fri	DNA replication	CH 24 CPE due	25
27-Apr	Mon	DNA repair		25
29-Apr	Wed	DNA recombination		25
1-May	Fri	Review		25
4-May	Mon	Review	CH CPE due	25
6-May	Wed	<b>Exam 1</b>		
8-May	Fri	RNA structure project introduction		
11-May	Mon	Transcription and RNA Metabolism		26
13-May	Wed	RNA Processing and Splicing		26
15-May	Fri	Reverse Transcription and RNA replication		26
18-May	Mon	RNA Day, Review	CH 26 CPE due	26
20-May	Wed	Viral RNAs		
22-May	Fri	Flexible (Guest Lecture)		
25-May	Mon	<b>Memorial Day- No Class</b>		
27-May	Wed	The Genetic Code		27
29-May	Fri	Protein Synthesis		27
1-Jun	Mon	Protein Synthesis II		27
3-Jun	Wed	Protein Targeting and Decay	CH 27 CPE due	27
5-Jun	Fri	Review		28
8-Jun	Mon	<b>Comprehensive Final Exam</b>		
	8am-9:50am			

**Course Website:** <https://canvas.du.edu/courses/94717>

I'll use Canvas to supplement in-class instruction. Course assignments, lectures and supplementary materials will be uploaded as they accumulate. I will make an effort to post each day's lecture slides prior to the day's lecture.

## **Additional Policies:**

### **Diversity and Inclusion Statement:**

Inside and outside of this classroom I expect everyone to respect one another and help foster a positive learning environment. I will do my best to create an open and inquisitive classroom and would appreciate your help. If specific issues arise please let me know immediately in person or by email. We can work together to help resolve and correct them.

A copy of the Chancellor's Statement on Diversity, Equity and Inclusive Excellence can be found at: <http://www.du.edu/chancellor/vision/diversitystatement.html>

Additional resources addressing Diversity and Inclusion can be found on the Office of Diversity and Inclusion's website at: <http://www.du.edu/diversity-inclusion/index.html>

### **DU Honor Code:**

All members of the University of Denver are expected to uphold the values of *Integrity*, *Respect*, and *Responsibility*. These values embody the standards of conduct for students, faculty, staff, and administrators as members of the University community.

Our institutional values are defined as:

*Integrity*: acting in an honest and ethical manner;

*Respect*: honoring differences in people, ideas, and opinions;

*Responsibility*: accepting ownership for one's own conduct.

A complete explanation of University's policies and procedures regarding student conduct can be found at: <http://www.du.edu/studentlife/studentconduct/media/documents/honorcode.pdf>

### **Title IX Statement:**

The University prohibits discrimination on the basis of sex, including sexual misconduct, in its educational programs and activities. The University is committed to complying with Title IX of the Education Amendment Act of 1972 and ensuring that the University's education programs and activities are operated in a manner consistent with applicable federal law, regulations, and provisions.

Further information concerning DU's Title IX policies can be found at: <http://www.du.edu/equalopportunity/policies/index.html>

## **Students with Disabilities/Medical Issues:**

University of Denver complies with the American with Disabilities Act and Section 504 of the Rehabilitation Act. Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs and what we can do jointly to accommodate them. If you qualify for academic accommodations because of a disability or medical issue please submit a Faculty Letter to me from Disability Services Program (DSP) in a timely manner so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities/medical issues. Please contact the Disability Services Program located on the 4th floor of Ruffatto Hall; 1999 E. Evans Ave., to coordinate reasonable accommodations for students with documented disabilities/medical issues. 303.871/2278/7432/ 2455. Information is also available on line at <http://www.du.edu/disability/dsp>; see the Handbook for Students with Disabilities.

\*Note that Letters of Accommodation from DSP are now being handled electronically. Please ensure that you have your letter forwarded through DSP to me within the first week of class.

There are other resources available on campus to help students with their learning and study needs. The Learning Effectiveness Program (LEP), a fee based program that offers support services to DU students with LD and/or ADHD, which provides academic counseling, tutoring and other specialist services (<http://www.du.edu/disability/lep>, 4th floor of Ruffatto Hall, 303.871.2372). The Writing Center supports and promotes effective student writing helping with all kinds of writing projects: class assignments, personal writing, professional writing, and multimedia projects. They serve any student affiliated with the University and invite students in all classes, at all levels of writing ability, and at any stage of the writing process to visit us. To Schedule an Appointment: <http://myweb.du.edu>, Student & Financial Aid tab, Writing Center, 303.871.7456. They are located in the AAC and offer evening and weekend hours. The Career Center partners with faculty, staff, senior administration and employers, to help students and alumni make informed decisions about work and life. They offer self assessment, career and educational options, self marketing strategies and real world experiences and can be contacted at <http://www.du.edu/studentlife/career>, 303.871.2150 and are located in the basement of the Driscoll Center.

## **Religious Accommodations:**

University policy grants students excused absences from class or other organized activities for observance of religious holy days, unless the accommodation would create an undue hardship. Faculty are asked to be responsive to requests when students contact them in advance to request such an excused absence. Students are responsible for completing assignments given during their absence, but should be given an opportunity to make up work missed because of religious observance.

Once a student has registered for a class, the student is expected to examine the course syllabus for potential conflicts with holy days and to notify the instructor by the end of the first week of classes of any conflicts that may require an absence (including any required additional preparation/travel time). The student is also expected to remind the faculty member in advance of the missed class, and to make arrangements in advance (with the faculty member) to make up any missed work or in-class material within a reasonable amount of time.