

1. CHM 6203 Chemical Biology of Nucleic Acids; Fall 2019

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2. Office Hours. email for appointment

3. Course objectives.

After completing this course the student will:

- be able to recognize the major classes of stable RNAs involved in gene regulation in eukaryotes.
- be able to describe the how chemical (nucleotide analog synthesis, chemical probing, small molecule screening) and molecular methods (molecular cloning, next generation sequencing, selex, genome editing) are combined in the field of nucleic acid chemical biology.
- gain a detailed understanding of the current (<2yrs) nucleic acid chemical biology literature.
- gain additional experience and skill in oral and written scientific communication.

4. Class Schedule – see next page

5. Grading.

Course grade will be based on:

- quality and depth of submitted *Weekly Topic Questions*
- *Answers to Weekly Topic Questions*
- *Research Paper Review* presentation
- Quality and depth of *News and View Article*
- Participation in class discussion!!

6. Class attendance.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

7. Accommodations.

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

8. Recommended textbooks.

There is no single textbook for the material covered in this course. Primary instructional resources will be papers from the current literature, review articles and selected book chapters in the public domain. These resources will be provide online at the Canvas site for this course.

9. Current UF grading policies.

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

10. Online course evaluation process.

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

11. Materials and Supplies Fees

None

19-Aug	Monday			
20-Aug	Tuesday			
21-Aug	Wednesday	RNA primary and secondary structure	Intro reading	
22-Aug	Thursday			
23-Aug	Friday	RNA tertiary structure		
24-Aug	Saturday			
25-Aug	Sunday			
26-Aug	Monday	RNA folding		
27-Aug	Tuesday			
28-Aug	Wednesday	RNA-protein interactions		
29-Aug	Thursday			
30-Aug	Friday	Types of RNA I (mRNA)		
31-Aug	Saturday			
1-Sep	Sunday		1_ riboswitch reading	
2-Sep	Monday	Types of RNA II (microRNAs, lncRNAs, etc.)		
3-Sep	Tuesday			
4-Sep	Wednesday	1_ riboswitches		
5-Sep	Thursday			
6-Sep	Friday	1_ riboswitches		
7-Sep	Saturday		Submit 1_ riboswitch QUESTIONS	
8-Sep	Sunday	Post revised 1_ riboswitch QUESTIONS		
9-Sep	Monday	1_ riboswitch_ PAPER	1_ riboswitch QUESTIONS, 2_ mRNA reading	
10-Sep	Tuesday			
11-Sep	Wednesday	2_ mRNA processing		
12-Sep	Thursday			
13-Sep	Friday	2_ mRNA processing		
14-Sep	Saturday		Submit 2_ mRNA processing QUESTIONS	
15-Sep	Sunday	Post revised 2_ QUESTIONS	Submit 1_ riboswitch QUESTION Answers	
16-Sep	Monday	2_ mRNA processing PAPER	2_ mRNA QUESTIONS, 3_ translation reading	
17-Sep	Tuesday	Post 1_ riboswitch QUESTION KEY		
18-Sep	Wednesday	3_ translation		
19-Sep	Thursday			
20-Sep	Friday	3_ translation		
21-Sep	Saturday		Submit 3_ translation QUESTIONS	
22-Sep	Sunday	Post revised 3_ QUESTIONS	Submit 2_ mRNA QUESTIONS Answer Key	
23-Sep	Monday	3_ translation PAPER	3_ translation QUESTIONS, 4_ tRNA and rRNA reading	
24-Sep	Tuesday	Post 2_ mRNA processing QUESTIONS KEY		
25-Sep	Wednesday	4_ tRNA and rRNA processing		
26-Sep	Thursday			
27-Sep	Friday	4_ tRNA and rRNA processing		
28-Sep	Saturday		Submit 4_ tRNA and rRNA QUESTIONS	
29-Sep	Sunday	Post revised 4_ tRNA and rRNA QUESTIONS	Submit 3_ translation QUESTIONS Answer Key	
30-Sep	Monday	4_ tRNA and rRNA PAPER	4_ tRNA and tRNA QUESTIONS, 5_ mRNA turnover re	
1-Oct	Tuesday	Post 3_ translation QUESTIONS KEY		
2-Oct	Wednesday	5_ mRNA turnover		
3-Oct	Thursday			
4-Oct	Friday	5_ mRNA turnover		
5-Oct	Saturday		Submit 5_ mRNA turnover QUESTIONS	
6-Oct	Sunday	Post revised 5_ mRNA turnover QUESTIONS	Submit 4_ tRNA and rRNA QUESTIONS Answer Key	
7-Oct	Monday	5_ mRNA turnover PAPER	5_ mRNA turnover QUESTIONS, 6_ microRNAs reading	
8-Oct	Tuesday	Post 4_ tRNA and rRNA QUESTIONS KEY		
9-Oct	Wednesday	6_ microRNAs		
10-Oct	Thursday			
11-Oct	Friday	6_ microRNAs		
12-Oct	Saturday		Submit 6_ microRNAs QUESTIONS	
13-Oct	Sunday	Post revised 6_ microRNAs QUESTIONS	Submit 5_ mRNA turnover QUESTIONS Answer Ke	
14-Oct	Monday	6_ microRNAs PAPER	6_ microRNAs QUESTIONS, 7_ lncRNAs reading	
15-Oct	Tuesday	Post 2_ mRNA turnover QUESTIONS KEY		
16-Oct	Wednesday	7_ lncRNAs		
17-Oct	Thursday			
18-Oct	Friday	7_ lncRNAs		
19-Oct	Saturday		Submit 7_ lncRNAs QUESTIONS	
20-Oct	Sunday	Post revised 7_ lncRNAs QUESTIONS	Submit 6_ microRNAs QUESTIONS Answer Key	
21-Oct	Monday	7_ lncRNA PAPER	7_ lncRNAs QUESTIONS; 8_ ribozymes reading	
22-Oct	Tuesday	Post 6_ microRNA QUESTIONS KEY		
23-Oct	Wednesday	8_ ribozymes		
24-Oct	Thursday			
25-Oct	Friday	8_ ribozymes		
26-Oct	Saturday		Submit 8_ ribozymes QUESTIONS	
27-Oct	Sunday	Post revised 8_ QUESTIONS	Submit 7_ lncRNAs QUESTION Answers	
28-Oct	Monday	8_ ribozymes PAPER	8_ ribozymes QUESTIONS; 9_ RNA modification read	
29-Oct	Tuesday	Post 7_ lncRNAs QUESTIONS KEY		
30-Oct	Wednesday	9_ RNA modification		
31-Oct	Thursday			
1-Nov	Friday	9_ RNA modification		
2-Nov	Saturday		Submit 9_ RNA modification QUESTIONS	
3-Nov	Sunday	Post revised 9_ RNA modification QUESTIONS	Submit 8_ ribozymes QUESTIONS Answer Key	
4-Nov	Monday	9_ RNA modification PAPER	9_ RNA modification QUESTIONS; 10_ RNA binding pr	
5-Nov	Tuesday	Post 8_ ribozymes QUESTIONS KEY		
6-Nov	Wednesday	10_ RNA binding proteins		
7-Nov	Thursday			
8-Nov	Friday	10_ RNA binding proteins		
9-Nov	Saturday		Submit 10_ RNA binding proteins QUESTIONS	
10-Nov	Sunday	Post revised 10_ RNA binding proteins QUESTIONS	Submit 9_ RNA modification QUESTIONS Answer K	
11-Nov	Monday	10_ RNA binding proteins PAPER	10_ RNA binding proteins QUESTIONS; 11_ SELEX rea	
12-Nov	Tuesday	Post 9_ RNA modification QUESTIONS KEY		
13-Nov	Wednesday	11_ SELEX		
14-Nov	Thursday			
15-Nov	Friday	11_ SELEX		
16-Nov	Saturday		Submit 11_ SELEX_ QUESTIONS	
17-Nov	Sunday	Post revised 11_ SELEX QUESTIONS	Submit 10_ RNA binding proteins QUESTION Answ	
18-Nov	Monday	11_ SELEX PAPER	11_ SELEX QUESTIONS; 12_ CRISPR reading	
19-Nov	Tuesday	Post 10_ RNA binding proteins QUESTIONS KEY		
20-Nov	Wednesday	12_ CRISPR		
21-Nov	Thursday			
22-Nov	Friday	12_ CRISPR		
23-Nov	Saturday		Submit 12_ CRISPR QUESTIONS	
24-Nov	Sunday		Submit 11_ SELEX QUESTIONS Answer Key	
25-Nov	Monday	12_ CRISPR PAPER	12_ CRISPR QUESTIONS	
26-Nov	Tuesday	Post 11_ SELEX QUESTIONS KEY		
27-Nov	Wednesday			
28-Nov	Thursday	thanksgiving		
29-Nov	Friday	thanksgiving		
30-Nov	Saturday			
1-Dec	Sunday			
2-Dec	Monday			
3-Dec	Tuesday		Submit 12_ CRISPR QUESTIONS Answer Key	
4-Dec	Wednesday	Post 12_ CRISPR QUESTIONS KEY		
5-Dec	Thursday			
6-Dec	Friday			