

Biochemistry- Nucleic Acids CHEM 3813

Prof. Michelle Knowles

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Meeting time and location: MWF 11-11:50 am, BAUD 103

Final Exam time and location: Wednesday, June 4, 10-11:50, BAUD 103

Office hours: M 12-1pm, W 9:30-10:30 am in SGM 101



Course Goals: To learn about the chemistry behind DNA replication, transcription, translation, and gene regulation. We will also review modern DNA techniques and discuss the history of discoveries that lead to our current knowledge of nucleic acids and the genome.

Required Materials:

- Lehninger Principles of Biochemistry (6th edition) – Chapter 9 is very different from 5th to 6th edition.
- Clicker connected to Blackboard for quizzes

Grading and Class time:

A. Lectures will be posted after each class. This will include the results from clicker questions. I will number slides sequentially for each Chapter so that you can tie your notes to the slide that is up.

B. Exams (3): All exams are cumulative, but recent material will be emphasized. Approximately half of each exam will be multiple choice and half will be short answer. Exams will take place in Week 4, 7 and during our allotted final time (see the calendar below). Exam 1 and 2 are worth 100 points and Exam 3 is worth 150 points (100 points over the last section and 50 points of cumulative material).

NO MAKE UP EXAMS will be given unless you are traveling on a DU athletic team, music group, or are a member of the US Armed Forces and have a conflict.

If you need more time for the exam please contact me to discuss options.

C. Clicker questions: At the *beginning* of each non-exam class period, there will be 3 multiple-choice, clicker questions. This is done to encourage review of previous notes and the text. Each day is worth 4 points, one point for each question and one point for being present. The lowest three days will be dropped. If you are missing class for a DU sponsored event, please contact me in advance and I will not count this against you. Clicker questions start counting for points on Wednesday Week 1 at 11am.

D. Grading

<i>Assignment</i>	<i>points</i>
Exam 1	100
Exam 2	100
Exam 3 – final exam	150
Clicker questions	80
TOTAL	430

<i>Range</i>	<i>Grade</i>
100.00-92.50	A
92.49-90.00	A-
89.99-87.50	B+
87.49-82.50	B
82.49-80.00	B-
79.99-77.50	C+
77.49-72.50	C
72.49-70.00	C-
69.99-67.50	D+
67.49-62.50	D
62.49-60.00	D-
<60.00	F

E. Accommodations: Students who have disabilities or medical conditions and who want to request accommodations should contact the Disability Services Program (DSP); 303.871.2372/ 2278; 1999 E. Evans Ave.; 4th floor of Ruffatto Hall. Information is also available online at www.du.edu/disability/dsp. Please do this *in advance* of the exam or other times that you may need appropriate accommodations.

F. Course Outline:

<i>Chapter</i>	<i>Topic</i>	<i>Dates</i>
8	Nucleotides and Nucleic Acid Structure <ul style="list-style-type: none">• Properties of the bases• DNA discoveries/history• Structure of DNA• Difference between DNA and RNA	Week 1
9	DNA based information technologies <ul style="list-style-type: none">• PCR, forensics, DNA sequencing• Restriction enzymes	Week 2
24	Genes and Chromosomes <ul style="list-style-type: none">• Compaction• DNA gyrase, topoisomerases	Week 3-4
	EXAM 1	April 18
25	DNA metabolism <ul style="list-style-type: none">• Replication• Repair mechanisms	Week 4-5
26	RNA metabolism <ul style="list-style-type: none">• Transcription• Different roles of RNA	Week 5-6
	EXAM 2 (may include some of Ch27)	May 9
27	Protein Metabolism <ul style="list-style-type: none">• Translation• Ribosomes	Week 7-8
28	Regulation of Gene Expression <ul style="list-style-type: none">• Operons• Activators and Inhibitors	Week 9-10
	FINAL (50 pts cumulative, 100 pts recent)	June 4, 10am