

Syllabus CHEM 6573

**Molecular Biochemistry**

Schedule: Tuesday, Thursday 9:35-10:55 am,

Location: CoC 102

Office hours: Mondays and Fridays 3:30 – 4:30 pm; or by appointment

Prerequisites: CHEM 6501 and CHEM 6502, or equivalent.

Textbook: *Molecular Cell Biology* by Lodish et al., 6<sup>th</sup> edition, W.H. Freeman and Co., 2007

Other recommended textbook:

*Biochemistry* by Voet & Voet, 4<sup>th</sup> edition, Wiley

Honor Code: Each student must sign his/her exam and quiz stating that he/she conforms to the Georgia Institute of Technology Honor Code (see: <http://www.deanofstudents.gatech.edu/Honor/>).

Slides: The slides shown in class are placed on <https://t-square.gatech.edu/portal/>

Evaluation: The course contains 5 examination categories, the results of which will be counted according to the following scheme:

Exams 1, 2a/b	15 % each (only the better result of 2a and 2b will be counted)
Exam 3	20 %
2 Quizzes	15 %
Presentation	20 %
Essay	15 %

**Grades (Tentative):** 80-100 = A, 66-79 = B, 56-65 = C, 46-55 = D. Below 45 = F.

For Pass/Fail: Pass = 66-100, Fail = below 65.

**Requests for Re-grading:** Requests for reconsideration of graded materials must be made in writing during the week the exams are returned.

**Attendance Policy:** Attendance at exams and class activities is mandatory.

**Essays** must be at least 1 page but no more than 2 pages (**font: Arial 11, single spacing, 1 inch margins**). Essays handed in late will receive no credit.

Power Point slides of the **presentations** must be submitted to the course instructor no later than 24 hours ahead of time.

Tentative list of topics and approx. timeline:

Week	Date(s)	Topics	Chapter(s)
1-2	Aug 23, 25, 30,	<i>I. Fundamentals</i> Cells and their building blocks, Basic Organic Chemistry, Basic Thermodynamics	1, 2.2-2.4
2	Sep 1	<b>Quiz 1</b> (Chapters 1, 2.2-2.4)	3.3
		<i>I. Fundamentals</i> Basic Kinetics	
3	Sep 6	<i>II. Proteins</i> Structure and Function	2.1, 3.1
3	Sept 8	<b>Exam 1</b>	<b>1, 2, 3.1</b>
4, 5	Sept 13, 15, 20	<i>II. Proteins</i> Structure and Function <b>No Class on Sept 22</b>	3.2-3.5
6	Sep 27	<i>III. Molecular Genetics</i> DNA, RNA and Viruses	4.1, 4.7
6	Sep 29	<i>III. Molecular Genetics</i> DNA Replication, Repair and Recombination	4.2, 4.5, 4.6
7	Oct 4	<b>Exam 2a</b>	<b>3.2-3.5, 4.1, 4.7</b>
7, 8	Oct 6, 11, 13	<i>III. Molecular Genetics</i> Transcription, mRNA processing, Protein Biosynthesis	4.3, 4.4, 8.1
9	Oct 20, 25	<i>III. Molecular Genetics</i> Structure of Chromatin, Control of Gene Expression	6.6, 7
10	Oct 27	<b>Exam 2b</b>	<b>4.2-4.6, 6.6, 8.1</b>
11	Nov 1	<b>Hand out of Topics for Essay and Presentation</b>	5.2
		<i>IV. Molecular Genetic Techniques</i> PCR, DNA cloning	
11	Nov 3	<b>Quiz 2</b> (Chapters 5.2, 6.6, 6.7)	5.3
		<i>IV. Molecular Genetic Techniques</i> DNA sequencing, Microarrays	
12	Nov 8	<i>No Class</i>	13
12, 13	Nov10, Nov 15	<b>Quiz 3</b> (Chapters 5.3, 13)	14.2
		<i>V. Intracellular Organization</i> Protein Sorting, Vesicle traffic	
13	Nov 17	<i>V. Intracellular Organization</i> Vesicle traffic	14.3-14.6
14	Nov 22	<b>Exam 3</b>	<b>6.6, 7, 5.2, 5.3, 13, 14.2-14.6</b>
15	Nov 29	<b>Hand in of Essay</b>	17, 18
		<i>V. Intracellular Organization</i> Cytoskeleton	
15, 16	Dec 1, 6, 8	<b>Student Presentations</b>	