

MOLECULAR BIOLOGY – BIMM100 SUMMER SESSION ONE 2012

Instructor: Tobey Tam, Ph.D.
Lectures: Tuesday/Thursday: 8:00 -10:50 am
Location: Solis Hall 107
Textbook: *Molecular Cell Biology*, Lodish et al., 6th edition (2008), referred to below as MCB. Website for text: <http://www.whfreeman.com/lodish6e> Note that this site includes animations, corrections of errors in the text and other useful information.

Goals of the Course

Molecular Biology is the science focused on understanding basic principles in biology at a molecular level. This understanding comes from discovering the relevant molecular 'pieces' that contribute to key biological processes, and importantly, how these molecules work together to execute and regulate the processes. Successes in molecular biology have led to increased understanding of human health and disease, and also form the foundation for recombinant DNA technology, the biotechnology industry, biofuels, and the ongoing, enormous progress in genomic sciences.

The goals for BIMM100 are to master the fundamental principles of molecular biology. We will discuss the principles in the context of both the *concepts* they reveal and the *experiments* that allowed the articulation of these concepts. Because molecular biology is a dynamic, living science, we will also consider unanswered questions, important areas of current research, and future directions and applications.

Prerequisites: Genetics (BICD100), Biochemistry (BIBC100[02]) and their pre-requisites (including BILD1 and organic chemistry). You may also wish to review MCB Chapters 1-3.

Professor contact information: Tobey Tam (tmtam@ucsd.edu)

Office Hours: Tuesdays 11-12pm, HSS 1145A

To email me specific questions, please put BIMM100 or Molecular Biology in the subject line, or your mail may not be read promptly.

Course website:

<http://ted.ucsd.edu> – login with your active directory login and password

Lecture notes will be posted to the website as a pdf file for downloading.

Accomplishing the Goals

BIMM100 consists of Lectures, Sections, Reading, Problem Solving, and Office Hours.

The expectation is that by having multiple formats for communicating and working with the information, each student will develop approaches to learning and studying that are individually most effective.

Sections

An important component of the course is your weekly section. The sections are taught by a team of smart, dedicated and accomplished scientists-in-training. Sections serve to clarify and emphasize points that have been introduced in lecture. Section leaders craft each meeting to include problem solving, discussion, and expansion of particularly timely topics. Note that attendance at sections is required for optimal performance in the course. Satisfactory participation and regular attendance in section is worth 15% of your final grade.

Enrolling in discussion sections is required. Starting NOON on July 3, 2012 section enrollment will open at **NOON** at <http://sections.ucsd.edu>. Login there using your UCSD student PID and select this BIMM 100 class. Students enrolled in the class can then enroll in any of the sections that still have space available by clicking the “enroll” button for that section. The section you are enrolled in will then be highlighted in green. Up to 12:00PM on Tuesday, July 10, 2012, you can change your section enrollment if necessary by logging in and clicking on the “enroll” button for a different section. Send questions regarding section enrollment to Hamid Delavar at hdelavar@ucsd.edu (Head Teaching Assistant) . **If you have general questions or concerns also contact Hamid.**

Section	Friday Time	Room	TA	TA Email
A01	8:00 – 9:50 am	Center 201	Sharon Chaing	schaing@ucsd.edu
A02	10:00 – 11:50am	Center 201	Michelle Vo	m1vo@ucsd.edu
A03	12:00 – 1:50pm	Center 201	Andrew Huynh	anhuyh@ucsd.edu
A04	2:00 – 3:50pm	Center 201	Hamid Delavar	hdelavar@ucsd.edu
A05	4:00 – 5:50pm	Center 201	Hamid Delavar	hdelavar@ucsd.edu

TA Office Hours: There will be Office hours on Tuesdays 11-12pm in HSS 1145A and on Thursdays 11-12 pm in Mayer 2651 every week. During section times of week 1, TAs will determine when extra OH will be made to accommodate their sections and these OH will be announced in class and posted on TED.

Reading and Problem Solving

Reading assignments are noted on the schedule. Any additional reading will be announced in lecture. At the end of each chapter, problems of various styles and lists of key concepts are given. These may be discussed in section and will be supplemented by your teaching assistants. The website for the text has supplemental material, including animations and figures. You are encouraged to prepare by reading and solving the problems *before* the lectures and sections.

The Learning Environment

Participation in class and Sections (e.g. questions or responses to questions by the instructor/TA) is strongly encouraged and contributes to a rich, interactive learning environment. In lectures and sections, refrain from eating, newspaper reading, texting, surfing the web, and conversation. Turn off cell telephones and messaging devices. If you must leave class early, please sit in the back in an aisle seat so that you do not disturb

others. Following these guidelines will help you, your colleagues, and your instructors stay focused.

Exams and Evaluations

Your performance in the course will be evaluated by your TA, one midterm exam and the final exam. Your TA (through attendance of section and participation) will award you with 15% of your course grade. Student Guidelines for Friday Sections will detail what is expected from students to earn the 15% for sections. This document is posted on TED.

The midterm will be worth 35% and the final exam 50% of your course grade. These exams will consist of short answer, multiple choice and short essay questions. Exams should be completed in ink. Requests for any reconsideration must be submitted within one week of the date the exams are returned. Only exams written in ink can be considered for re-grading. Exams taken in pencil will not be reconsidered.

There will be no make-up exams. For students with an excused medical absence from the midterm, the final will count for 85% of the final grade (this excuse must be provided in person within 7 days of the midterm). The final exam must be taken on the exam date. No early or late exams will be given for any reason. For students with an excused medical absence from the final, a make-up final will be administered as an oral exam by the professor within the first 3 weeks of the 2nd summer session.

For each exam, the top score will be eliminated, then the three next highest grades will be averaged, and this score will be set to 100%. Grades will then be based on the following scale:

88-100%	– A range
78-87%	– B range
65-77%	– C range
55-64%	– D range
below 55%	– failing

Since your own grade results only from your own scores, and is not influenced by how your classmates do, working together will only help everyone. Group studying is highly recommended.

Students working with OSD

Please provide your AFA letter as soon as possible, but not later than July 10th, so that we can make arrangements with the Biology Student Instructional Services Office.

Academic Integrity

You are encouraged to study with other students and especially to use your Sections as collaborative learning environments. However, work on exams must be solely your own. Lapses in academic integrity will not be tolerated and will be pursued in accord with University policy.

Please review UCSD's Policy on Academic Integrity:
<http://www-senate.ucsd.edu/manual/appendices/app2.htm>

TIPS ON HOW TO DO WELL

Like many upper division courses, BIMM100 is complex enough to reward the student who gives some thought to how to take the course and be an active participant in the learning process.

1. Most importantly, KEEP UP with the material. The pace will seem unrelenting at times because we have fewer than 20 lectures to cover the field of molecular biology, which although a young field, is rapidly benefiting from intense research and new findings.

To keep up and be prepared for the exams you should:

2. Read the textbook, optimally before class. See the topics and pages for reading in the schedule below.
3. Print out lecture slides before lecture
4. Be present and take good notes during lectures on the slides.
5. Participate actively in discussions in class and Sections.
6. Work through problem sets alone or in groups before your Section meetings. These and the previous year's exams (which will be posted for study) give you the best idea of how exam questions will be written and should be answered.
7. Take your solved problem sets to Section and work with other students and your TA.
8. Review extra questions in the Lodish textbook and on the book's website.
9. Be certain to review animations used in lecture and 'narrate' them to yourself or others. Whether you understand the material well, or are struggling with it, discussions with other students, your TA or me will help improve your learning.

Simply memorizing slides and reading is not effective in learning molecular biology. Although you will need to learn the names of enzymes, molecules, and steps involved in various processes, what is most important is understanding the key concepts and using these to formulate predictions, interpret data from experiments, and design experiments yourself. You will develop these skills by following the tips and practices above.

Responsibilities

It is **your responsibility** to put a significant effort into class – coming to class with lecture slides, taking notes, reading the textbook, working through problem sets and actively participating in discussions of the problem sets in Section.

BIMM100 Schedule Summer 2012
Lecture schedule (tentative and subject to change)

Week	Date	Topic	Reading
1	Tues, 7/3	Nucleic Acid Structure Key Processes Key Molecular Processes in Biology II Transcription + Decoding	Chapter 4 (111-131)
	Thurs, 7/5	Translation & DNA Replication Replication, Repair & Viral Intruders	Chapter 4 (132-160)
2	Tues, 7/10	<u>Using Molecular Biology</u> – Recombinant DNA (review 5:166-176 before lecture) Characterizing + Using Clones	Chapter 5 (176-198)
	Thurs, 7/12	Finding Genes & Using Clones Inactivating Genes	Chapter 5 (198-212)
3	Tues, 7/17	MIDTERM (first half of class) Gene Structure & Organizations in Chromosomes	Chapter 6 (217-226)
	Thurs, 7/19	Chromosomes & Invaders Chromatin & Chromosomes	Chapter 6 (226-257)
4	Tues, 7/24	Centromeres & Telomeres Regulating Gene Expression: Basics & Polymerases	Chapter 6 (257-266) Chapter 7 (269-281)
	Thurs, 7/26	Sites & Binders Getting Started & Fine-tuning	Chapter 7 (218-319)
5	Tues, 7/31	After the Message: Processing in the Nucleus More Processing & Regulation in the Cytoplasm	Chapter 8 (323-367)
	Thurs, 8/2	Genomics, New Horizons & Wrap Up REVIEW SESSION (last half of class)	
	Sat, 8/4	FINAL EXAM	8:00-11:00am TBA Location