MOLECULAR BIOLOGY—BIMM 100
WINTER 2011

PROFESSOR TRACY JOHNSON
5326 NATURAL SCIENCES BUILDING
Johnson_bimm100@ucsd.edu

OFFICE HOURS: Wednesday 9:30-10:45 AM Natural Sciences Building (NSB)/Alternate location, if necessary, TBA

TEXTBOOK: Molecular Cell Biology, 6th edition. Lodish et al. 2008. Text web site http://bcs.whfreeman.com/lodish6e/. This site includes animations, corrections of text errors, etc.

LECTURES: Tuesday and Thursdays, 11:00 AM-12:20 PM
WLH 2001

MIDTERM: The midterm will be held Thursday, February 3, 2010 during the regularly scheduled class.

FINAL: The final exam will be held Thursday March 17, 2011. 11:30 PM-2:30 PM

COURSE WEBSITE: http://www.biology.ucsd.edu/classes/bimm100.WI11
Username: bimm100wi11
PASSWORD: TRnAMRnA (NOTE: Username and password are case-sensitive)

PREREQUISITES: BICD100 (Genetics), BIBC100[02] (structural/metabolic biochemistry), and their prerequisites, including BILD1 and organic chemistry. If a prerequisite has been waived to allow you to take this class, it is your personal responsibility to make up any deficiencies in preparation that you may have.

TEACHING ASSISTANTS:

TA	e-mail	Office Hours & locations
Ann Atwood	aatwood@ucsd.edu	Thurs 1-2 Pete's (Rimac Annex)
Harihar Basnet	hbasnet@ucsd.edu	Wed 4-5 CMMW Rm #345
Jae chung	jic010@ucsd.edu	Fri 12-1 Pac Hall 2140B
Kevin Do	ktdo@ucsd.edu	Wed 6-7 Tioga 6th Fl
Jeff Hagarty	jhegarty@ucsd.edu	Fri 12-1 CMMW Rm TBA
Christopher Kuo	ckuo@ucsd.edu	Thur 10-11 Mandeville Cart
Dexter Lee	dr.dexterbeat@gmail.com	Mon 3:30-5 Leichtag bldg 1st fl

Kelly Lo	kylo@ucsd.edu	Tues 2-3 Café Roma
Eleasa Sokolski	esokolski@gmail.com	Tues 4-5 Mandeville Cart
Duke Yeh	dyyeh@ucsd.edu	Fri 3-4 Leichtag bldg 1st fl

DISCUSSION SECTIONS:

A01	M 08:00a-08:50a	CENTR 217A	Jeff Hegarty
A02	M 09:00a-09:50a	CENTR 217A	Jeff Hegarty
A03	M 10:00a-10:50a	CENTR 217A	Chris Kuo
A04	Tu 4:00p-4:50p	WLH 2114	Harihar Basnet
A05	Tu 5:00p- 5:50p	WLH 2114	Harihar Basnet
A06	W 12:00p-12:50p	CENTR 217A	Kelly Lo
A07	W 5:00p-5:50p	CENTR 217A	Eleasa Sokolski
A08	W 6:00p-6:50p	CENTR 217A	Dexter Lee
A09	W 7:00p-7:50p	CENTR 217A	Kevin Do
A10	Th 08:00a-08:50a	HSS 2154	Ann Atwood
A11	Th 09:00a-09:50a	HSS 2154	Ann Atwood
A13	F 1:00p-1:50p	CENTR 207	Jae Chung
A14	F 2:00p-2:50p	CENTR 207	Duke Yeh

Discussion sections are a valuable part of this course, and although discussion sections are not mandatory, I highly recommend that you take part in them. These sections are taught by a team of dedicated, accomplished scientists-in-training and serve to clarify and emphasize points that have been introduced in lecture. The section leaders craft each meeting to include opportunities for problem-solving, discussion, and expansion on particularly timely topics. There will be no sections the first week of class, but you should sign up for a section on the sheets posted in the lobby of Pacific Hall. Sections will begin the second week of classes.

GOALS OF THE COURSE

Molecular biology is the science of understanding basic principles in biology at a molecular level. The term "molecular biology" also refers to the collection of tools used to carry out these studies. Advances in molecular biology have led to an understanding of human health and disease and also form the basis of recombinant DNA technology and the biotechnology industry. By the end of the course, you should understand the molecular "machinery" that carry out cellular processes and how these processes are regulated. You should also understand the experimental science that has facilitated the understanding of these concepts and allows us to gain a more detailed understanding of cellular processes. Finally, you will have a sense of the exciting new directions in molecular biology and the provocative and, as yet,

unanswered questions that await us. Welcome to what I think will be a challenging and exciting foray into the molecular mechanisms underlying cellular function!

ACCOMPLISHING THE COURSE GOALS

Lecture--Lectures are held twice a week and cover the major concepts indicated on the schedule. Readings from Lodish are noted and any additional reading will be announced in lecture and indicated on the course website. Please note that the indicated schedule and readings may be modified somewhat during the quarter, and any changes will be announced in lecture. Lecture notes will be posted on the class website. However, these notes are **not** intended to replace lecture, and you will be responsible for information provided in lecture and assigned in the text.

Reading--Reading assignments are noted on the schedule. Any additional reading will be announced in lecture and on the web site. You are encouraged to read text material before lectures. You will note that at the end of each chapter, problems and lists of key concepts are given. Additionally, the website for the text has supplemental material, including animations and figures from the text. You are encouraged to try solving these problems and making use of supplementary material before lecture.

Problem Solving--In addition to problems given at the end of the chapter, problem sets will be assigned weekly starting at the end of week 1. They will be posted on the website by Friday afternoon. You are encouraged to work these problems before section and to be prepared to discuss the answers during section. The exam questions will directly reflect the homework assignments.

Group studying --You are encouraged to study with other students in the course. However, work on exams must be solely your own. See "Academic Integrity" statement below.

The Learning Environment—Participation in class (e.g. questions or responses to questions by the instructor) is strongly encouraged and contributes to a rich, interactive learning environment. Please refrain from eating, reading newspapers, surfing the web, texting, and engaging in conversations during lectures and sections. Cell phones, pagers, and messaging devices should be turned off. 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 instructors to stay focused on the material.

Examinations and grading--Your performance in the course will be evaluated by one midterm exam and the final exam. The midterm will be worth 40% and the final exam 60% of your course grade. Exam and grading policies are as follows:

- Exams will consist of short answer, multiple choice, and short essay questions and must be completed in ink. Exams taken in pencil will not be reconsidered.
- Pens and an ID card (student ID or driver's license) will be required at every exam and are the only personal items you may have with you during the exam. All other materials will be stored at the front of the classroom.
- There are no scheduled make-up exams for the midterm or the final. Failure to take the exam will result in a zero. Extraordinary circumstances preventing you from taking an exam must be discussed in advance with the Student Affairs Office (1128 Pacific Hall) or Dr. Johnson. If exceptions are made for these special circumstances, the make-up will be an ORAL exam given by Dr. Johnson.
- Requests for any reconsideration or re-grading must be submitted *in writing* within one week of the date that the exams are returned. These requests must be hand-delivered to me after lectures or during my office hours. If you submit an exam for a re-grade, I will re-grade the entire exam.
- Please be advised that a random sampling of exams **will be photocopied**. If exams submitted for re-grade are found to be altered, this will be considered a breach in academic honesty and will result in failure of the course.
- Grades are established only at the end of the course and are based upon the exam scores. In truly borderline cases, input from section leaders regarding student performance may be taken into consideration. The highest three grades in the class will be averaged, and this score will be set at 100%. Grades are earned based upon the following scale 88-100% "A" range; 78-87% "B" range; 65-77% "C" range; 55-64% "D" range; Below 55% Failing. Plus and minus grades are given based upon natural breakpoints in the score distribution.

Academic integrity--Cheating will not be tolerated and will result in an F in the course, as well as any additional disciplinary actions as indicated by the policy to maintain academic honesty. Please review UCSD's Policy on Academic Integrity: http://www-senate.ucsd.edu/manual/appendices/app2.htm

WELCOME TO BIMM 100: MOLECULAR BIOLOGY!

BIMM 100 SCHEDULE WINTER 2011

Week	Date	Planned Topic	Pages
1	4-Jan	Introduction Nucleic acid structure & Function	1-4, 9-14 44-45, 111-119
	6-Jan	Genes, chromosomes, Chromatin	215-219, 247-263
2	11-Jan	Genome organization Introduction to the "RNA world"	219-226 118-119
	13-Jan	DNA replication & Repair	139-144, 263-265 145-149
3	18-Jan	Transcription: An overview	120-126
	20-Jan	Translation	127-139
4	25-Jan	Recombinant DNA techniques	176-185
	27-Jan	Characterizing and using cloned DNA I	186-192
5	1-Feb	Characterizing and using cloned DNA II	194-195
	3-Feb	**MIDTERM**	
6	8-Feb	Prokaryotic transcriptional control	271-276
	10-Feb	Eukaryotic transcription: Polymerases & regulatory sequences	276-290

7	15-Feb	Eukaryotic transcriptional control Part I: Initiation, activation, & repression	296-311
	17-Feb	Eukaryotic transcriptional control Part II: Regulating transcription factor activity and regulation beyond the promoter	311-316
8	22-Feb	RNA processing	323-341
	24-Feb	mRNA export and post-transcriptional gene regulation	341-344; 347-353
9	1-Mar	Genomics and bioinformatics	243-246; 192-194
	3-Mar	Molecular biology of cancer	1107-1127
10	8-Mar	Identifying gene expression & studying "disease genes"	204-212
	10-Mar	Review	

**********FINAL EXAM MARCH 17, 2011 11:30 P.M.-2:30 P.M.**********