BIMM110 - Molecular Basis of Human Disease
Course Information, Winter 2018

Overview of the Curriculum

This course presents 1) genetic, biochemical, and molecular biological approaches used to identify the molecular basis of human diseases; 2) current understanding of selected major human diseases at the molecular and cellular levels; 3) successful and possible therapeutic treatments of these diseases. It is expected that students who take BIMM 110 already have a good background in molecular biology, metabolic biochemistry, and genetics.

Course Objectives:

At the end of the course students should be able to:

1) Explain the molecular causes of representative diseases from class;
2) Use online resources to discover the molecular basis for diseases that we have not discussed in detail;
3) Describe transgenic approaches for treatment and have an understanding of the limitations of these techniques;
4) Suggest basic experimental designs model organisms can be used to understand the mechanisms of diseases; for example, explain the basics of transgenic, knock-out, knock-in approaches, and the use of CRISPR.
5) Interpret data from experiments similar to those we examine in class and in discussion.

Scheduling and Enrollment

BIMM110 (B00) meets at 8:00 - 8:50 AM MWF in Solis 107. Associated 50 min. discussions sections are listed by section below. It is very important that you attend the section for which you are registered. Part of your grade will be based on your participation and assignments in discussion section. Discussion sections will commence on Monday in the second week.

Section	Time	Place	IA	Office Hours
B01	M, 3 pm	APM 2301	Emerald Liu	TBA
B02	M, 4 pm	CENTR 218	Leen Hammam	TBA
B03	Tu, 5 pm	YORK 3000A	Leen Hammam	TBA
B04	Tu, 7 pm	CENTR 220	Anwesh Reddy	TBA
B05	Tu, 8 pm	CENTR 220	Anwesh Reddy	TBA
B06	F, 1 pm	HSS 2321	Courtney WIng	TBA
B07	F, 5 pm	HSS 2321	Tasha Go	TBA

Blackboard Learning Management System
We will be using Blackboard to deliver our course materials over the Internet. You will be able to use this course site to download copies of course materials and view your grades. You can log-on at TritonEd (https://tritoned.ucsd.edu)

Staff Directory

Lecturer

Chris Day	`	cdday@ucsd.edu
Office hours:		Wed 10-11AM
Office:		HSS 1145LA

IAs

Leen Hammam,	lhammam@ucsd.edu
Anwesh Reddy	akamired@ucsd.edu
Emerald Liu	hakugaara@gmail.com
Courtney Wing	cwing@ucsd.edu
Tasha Go	m3go@ucsd.edu

Grade Scale:
We do not curve. Consequently, you are not in competition with anyone for a grade.

Grades will be based on your percentage in the course:

> 90%	A (A-, A or A+)
> 79%	B (B-, B or B+)
> 67%	C (C-, C or C+)
> 55%	D
0-55%	F

Self guided study

There is no required course textbook, but some background reading and scientific papers will be posted on blackboard. All lecture slides will be posted on the website and are available for download after class. The lectures will be video podcasted.

Grades: Exams, Assignments and Participation
Your grade for BIMM110 will be based on your performance on assignments and two exams. The assignments will give you opportunities to work with the material and to practice the kinds of problem-solving skills you will need for the exams.

Course Component	Date	Time	Notes	Points
Mid-term Exam		in class		50
Final Exam	TBA	TBA		100
Problem Sets	week 3, week 5, week 7, week 8, week 10	Drop in assignment box on Triton Ed before posted deadline	Lowest grade of the five can be dropped. 15 pt assigned to each problem set.	60
Participation		In Discussion		20
Genetics in News Assignments		Triton Ed Quizzes		40
			Total	300

Problem sets:
The five take-home problem sets count for just over 20% of your course grade (15 points each, total 60 points out of the 300 total). Note that the lowest score will be dropped.

Return the completed problem sets in the assignment dropbox on Triton Ed BEFORE the posted deadline. They will be graded by your IA. Late assignments will be accepted but are subject to a 10% reduction for each day late.

We encourage you to work together in study groups to discuss the questions and help you understand the material. Use office hours as needed too. If you do choose to work in groups on the problem sets, please list the names of your collaborators on your assignment. Each student must write her/his own answers, in his/her own words, after working with the group. Try not to make the mistake of simply accepting another student's answer and thinking you understand it. You have a better understanding by going through the problem-solving process.

Screen Podcasts
Class lectures are screencast and are available for review at any time during the semester. Be aware that we make use the chalk board too, and these visuals will not be available on the podcast. If you miss a lecture it is your responsibility to find a peer who will lend you their notes.

Course Administration
Dr. Day is the first person to contact for all questions of course enrollment, section changes, grade records, signing up for early make-up exams (allowed only exceptional reasons), and any special needs.

To minimize the amount of class time taken up with administrative details, all announcements and information of general interest will be sent to you by email (normally on Monday mornings) and also posted on the blackboard notice board for the course. It will be your responsibility to consult one of these sources routinely, since most announcements posted there will not be reiterated in class.

Special Needs and Religious Holidays:
Please let Dr. Day know as soon as possible if you have any special needs that we should accommodate or a religious holiday that will conflict with a course activity.

Students' Questions and Feedback:
The staff of this course, lecturer and IAs alike, welcome your questions, suggestions, and comments. We want to get to know you, and we appreciate your feedback.

Board of Directors:
In addition, we would like to have about six volunteers (one from each section) from the class to serve as class representatives and meet after lecture once a week. This is valuable for all of us since it allows students to make constructive suggestions if there are logistical problems or other concerns. In short, student concerns can be aired in a way that real changes can be made. In our experience this open communication helps teaching staff and students alike.

Course success strategies

• Exams will be based on material discussed in lecture or discussion; for reference use the powerpoints and problem sets as a guide.

• You should use a textbook or online resources to reinforce the topics we cover in lecture. Use the index and table of contents to find the appropriate material. These outside resources should be considered as a tool to help you get information and understand the material. We will also post some reading that are pertinent to the topics we cover in class.

Note taking tips
• Print or download the powerpoints before class and take notes right on these pages. While using an electronic device (computer or tablet) is acceptable, research has been shown that the act of hand-writing your notes is more effective than typing them.

• Review and rewrite your rough notes more neatly each week. Think about what 'facts' might be useful for the notecard that you can use in the exam.

• **Ask questions**: in lecture, right after lecture, in discussion section, in office hours. You should get to know your classmates, the IA(s), and the instructors

Studying for exams

• Attend your discussion section. This is a good place to meet your peers and form study groups.

• Form a study group and meet regularly to go over material and problems.

• Be sure you can teach the material to others and show them how to solve the assigned problems.

• Do not wait until the day before the exam to begin reviewing your notes and the material in the textbook. This should occur day to day.

• Ask questions! And sleep!

Academic integrity (https://students.ucsd.edu/academics/academic-integrity/index.html)
Integrity of scholarship is essential for an academic community. The University expects that both faculty and students will honor this principle and in so doing protect the validity of University intellectual work. For students, this means that all academic work will be done by the individual(s) to whom it is assigned, without unauthorized aid of any kind. Anyone caught cheating (includes plagiarizing lab reports, cheating on a test, or changing an answer for a re-grade) will be reported to the Academic Integrity Office.

Inclusion and accessibility (http://disabilities.ucsd.edu)
Any student with a disability is welcome to contact us early in the quarter to work out reasonable accommodations to support your success in this course. Students requesting accommodations for this course due to a disability must provide a current Authorization for Accommodation (AFA) letter issued by the Office for Students with Disabilities (OSD), which is located in University Center 202 behind Center Hall. Students are required to present their AFA letters to faculty and to the OSD Liaison in the Division of Biological Sciences in advance so that accommodations may be arranged. For further information, contact the OSD at 858-534-4382 or osd@ucsd.edu

Date	Week	LECTURE	Assignments
1/8	1	Introduction	
1/10		Gene Function	
1/12			
1/15	2	**Martin Luther King**	No discussions Sections this Week! Genetics in News (Article)
1/17		Genetic Tools	
1/19			
1/22	3	Topic: Inexplicable Disease	Homework 1 Due
1/24			
1/26			
1/29	4	Topic: Trinucleotide Repeat	Genetics in News (Molecular Basis)
1/31			
2/2			
2/5	5	Topic: Colorblindness	Homework 2 Due
2/7			
2/9			
2/12	6	**Midterm Exam In-class (Week 1-5 material)**	
2/14		Topic: Achondroplasia	
2/16			
2/19	7	**Presidents' Day**	No discussions Sections this Week! Genetics in News (Gene Therapy)
2/21		Topic: Breast Cancer	
2/23			
2/26	8	Topic: Epigenetic Diseases (Imprinting and Rett Syndrome)	Homework 3 Due
2/28			
3/2			
3/5	9	Topic: Cystic Fibrosis	Homework 4 Due
3/7			
3/9			
3/12	10	Topic: Mitochondrial Myopathies	Homework 5 Due
3/14			
3/16			
	Exam Week	Final Review TBA	