



Life Sciences 3: Introduction to Molecular Biology

UCLA Summer Session A – 22 June 2009 to 31 July 2009

Lectures: M/W/F 9:00-10:50am

Location: FRANZ 1178

Instructor Information:

- Angel P. Tabancay, Jr., Ph.D.
- Office Hours: M 8-9am and W 8-9am in FRANZ 1178
- Email: tabancay_LS3@yahoo.com (Please write "LS3" somewhere in the subject line)

Course Objective:

This 6-week intensive course will give you a broad overview into the world of molecular biology, biochemistry, and molecular genetics. We will discuss protein structure and function, DNA structure and replication, transcription and translation, techniques in recombinant DNA technology, and recent advances in the study of whole genomes and proteomes.

Lecture Information:

- Required Textbook: "Cell and Molecular Biology: Concepts and Experiments" by Gerald Karp, 2007 – 5th Edition.
- Lectures will cover and expand on material discussed in the textbook. Please use the lecture material to help focus your studying and reading.
- Copies of the lecture material will be posted on the course Blackboard (<http://www.lsic.ucla.edu/classes/summer09/>). I will be posting lecture slides **the day before lecture by 9:00pm**. Please print them out and bring them to lecture. In the event that slides are not posted the day before, I will provide copies of the slides the day of lecture.
- Lectures will be BruinCasted at <http://www.oid.ucla.edu/webcasts/courses/2008-2009>

Discussion Sections:

- You are required to attend your assigned discussion section (unless you make arrangements with the Teaching Assistant (TA) and LS Core Office)
- TAs will lead the sections. TAs will discuss important topics/concepts covered in the lectures, assigned readings, and labs.
- TAs will have 2 hours of Office Hours every week. Please feel free to attend the Office Hours of any of the TAs. Exact times/locations for each TA's office hours will be announced.
- There are 4 Teaching Assistants. Here are their respective sections:
 - **Asif: 1C, 1D**
 - **Deepthi: 1A, 1B, 1F, 1J**
 - **Erin: 1E, 1I**
 - **Karen: 1H, 1G**

Laboratory Sections:

- You will be responsible for attending your assigned laboratory section. Please purchase a Life Sciences 3 Lab Manual at the UCLA Bookstore.
- *Lab Grade Transfers*: Students who took the course within the last academic year are allowed to transfer their previous lab portion grade and may be exempt from attending laboratory

sections during Summer Session A. Please make sure you follow the correct procedures for taking this option.

Administrative Concerns:

For additional issues regarding LS3 enrollment, scheduling, grade transfers, access to Blackboard, etc. please contact Lily Yanez or Jane Park (Email: lscore@lifesci.ucla.edu) in the LS Core Curriculum Office (LS Building, Room 2305).

Examination Schedule:

Please see the midterm/final exam schedule below. Please mark your calendars to make sure that you do not have scheduling conflicts! You **MUST** take midterm/final exams on the dates/times scheduled. There are NO exceptions.

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|-------------------------------------|-------------------------------------|
| ➤ MIDTERM 1 on 8 July 2009 | 9:00 – 10:20am in FRANZ 1178 |
| ➤ MIDTERM 2 on 20 July 2009 | 9:00 – 10:20am in FRANZ 1178 |
| ➤ FINAL EXAM on 31 July 2009 | 9:00 – 10:50am in FRANZ 1178 |

Exams will cover material from lecture, reading assignments in textbook, and discussion sections. Exam questions will be in **short answer format**. It will be specified which lectures/topics will be covered on a given exam. Students will sit every other seat, as best as we can accommodate. No cellular/wireless devices of any type may be used and they must be placed on off/silent mode. We will do our best to return exams in a timely manner. Grades will be posted on MyUCLA. An answer key for the exam will be posted in front of the LS Core Office after the exam takes place. Exams are **photocopied** after grading.

Policy for Regrades on Exams:

A request for a regrade of an exam must be made within **1 WEEK** of the exam being returned to you. If there is a simple addition error or you believe there is an error in grading, please write a brief explanation of why you think you deserve more points, attach it to the front of your exam, and return it to the LS Core Office. Please keep a photocopy of your exam for your records. The exams will be re-graded as soon as possible. Please be advised that during this process, the entire exam will be re-evaluated. Therefore, it is possible that your score may *increase or decrease*.

Grading:

Your overall grade will be determined as outlined below:

Lecture (80%):

MIDTERM 1	120
MIDTERM 2	120
FINAL EXAM	160

Lab (20%):

There are 5 total labs worth 20 points each.

The lowest lab score from Lab 1 – 3 will be dropped. **40**

Lab 4 or 5 cannot be dropped. **40**

Lab-related questions on FINAL EXAM **20**

TOTAL POINTS: 500

(These are your 500 points to earn during this session. There are **NO** additional homework assignments, in-class questions/quizzes, participation points, or extra credit. Please do not ask.)

Academic Dishonesty:

Please DO NOT participate in any form of academic misconduct including cheating and any other types as described in the official [UCLA Policy for Academic Misconduct and the UCLA Student Code of Conduct](http://www.registrar.ucla.edu/soc/notices.htm#Anchor_student_37516) (http://www.registrar.ucla.edu/soc/notices.htm#Anchor_student_37516). Any instances of academic dishonesty will be dealt with according to official UCLA policy. Plain and simple, please do not do it. That is it.

Our Goal: Approximate Lecture Outline with Assigned Readings

LECTURE	DATE	TOPICS DISCUSSED	ASSIGNED READING
1	06/22	Introduction; Prokaryotic vs. Eukaryotic Cells; Brief Review of Chemistry; Biological molecules; Proteins	Ch. 1: 7-21, 25-29; Ch. 2: 31-38, 42-49
2	06/24	Proteins Structure; Enzymes Basics	Ch. 2: 49-75, Ch. 3: 88-107
3	06/26	Techniques in Protein Analysis; Proteomics	Ch. 2: 68-73 Ch. 18: 746-753
4	06/29	Introduction to Nucleic Acids: DNA and RNA; Gene and Genome Structure	Ch. 2: 75-77 Ch. 10: 395-409, 422-425
5	07/01	Prokaryotic Transcription; The Genetic Code	Ch. 11: 429-432; 464-484
HOLIDAY	07/03	Happy Fourth of July...NO CLASS!	
6	07/06	Prokaryotic Translation; Prokaryotic Gene Regulation	Ch. 11: 464-484 Ch. 12: 509-515
EXAM	07/08	MIDTERM 1: 9:00-10:20am in FRANZ 1178	
7	07/10	Eukaryotic Transcription; Processing of RNA	Ch. 11: 436-437, 444-459, 531-532
8	07/13	Eukaryotic Gene Regulation; Microarray Analysis	Ch. 12: 515-518; 518-531
9	07/15	Eukaryotic Translation	Ch. 11: 471-472; 475-476; 491; Ch. 12: 532-538
10	07/17	Mechanism of DNA Replication: Prokaryotic and Eukaryotic	Ch. 13: 542-561
EXAM	07/20	MIDTERM 2: 9:00-10:20am in FRANZ 1178	
11	07/22	Errors in DNA Replication and Mechanisms of DNA Repair	Ch. 13: 562-569
12	07/24	Introduction to Viruses; Cancer Overview	Ch. 1: 21-24 Ch. 16: 665-682
13	07/27	Molecular Biology Toolbox I: Restriction Enzyme Analysis, Recombinant DNA Technology, Libraries, Screening Methods	Ch. 18: 758-763; 767-769
14	07/29	Molecular Biology Toolbox II: DNA Sequencing, PCR, Genomics, Microarray Analysis, RNAi, ChIP	72-74; 415-419; 459-464; 515-518; 523-524; 763-765, 765-767
EXAM	07/31	FINAL EXAM: 9:00-10:50am in FRANZ 1178	

*This is our proposed schedule. Changes/adjustments may occur during the session.