

CELLS, TISSUES AND ORGANS

(Lecture 2)

Tuesday and Thursday

11.00 AM - 12.15 PM

LaKretz 110

Instructors:

Dr. Gordon L. Fain and Dr. Ronald H. Cooper

Fall Quarter

2007

LECTURE SCHEDULE FOR LIFE SCIENCES 2 –2 FALL QUARTER 2007

WK	DATE		LECTURE TOPIC	READING (CHAPTER)
0	Sept 27	Th	1 Introduction to Biological Molecules	2, 3 & CD-ROM
1	Oct 2	T	2 Cell structure I: Characteristics of prokaryotes and eukaryotes	4, pp 68-77
	Oct 4	Th	3 Cell structure II; Overview of cell organelles	4, pp 78-93
2	Oct 9	T	4 Membrane structure and function	5
	Oct 11	Th	5 Enzymes and Energetics	6
3	Oct 16	T	6 Glycolysis and Cell respiration	7
	Oct 18	Th	7 Energy from the sun: Photosynthesis	8
4	Oct 23	T	8 Cell Signaling & Communication	15
	Oct 24	W	Midterm Exam 1, 5 - 6.50 pm. (Lectures 1-6)	
	Oct 25	Th	9 Animal Hormones	42
5	Oct 30	T	10 Animal Reproduction & Development	43 & 20
	Nov 1	Th	11 Neurons I: Na/K Transport, Membrane Potentials, Ion Channels	44
6	Nov 6	T	12. Neurons II: Action Potentials, Synaptic Transmission	44
	Nov 8	Th	13. Sensory Systems	45
7	Nov 13	T	14 Central Nervous System I	46
	Nov 14	W	Midterm Exam 2, 5 - 6.50 pm. (Lectures 7 - 12)	
	Nov 15	Th	15 Central Nervous System II	46
8	Nov 20	T	16. Membrane Transport, Digestion and Absorption	50
	Nov 22	Th	Thanksgiving Holiday. No Lecture	
9	Nov 27	T	17 Excretion and the Kidney	51
	Nov 29	Th	18 Cilia, Skeletal Muscle and Bone	47
10	Dec 4	T	19 Circulation and the Heart	49
	Dec 6	Th	20 Gas Exchange and Breathing	48
Dec 11		Final Comprehensive Examination (See 'Examinations') 6:30 - 9.30 pm Location TBA		

Lectures 1-10 will be given by Dr. Cooper, and lectures 11-20 will be given by Dr. Fain

I. FACULTY AND STAFF:

<i>Instructors:</i>	<i>Office</i>	<i>Office hours</i>	<i>Phone</i>	<i>E-mail</i>
Dr. R.H. Cooper	1812 LSB	Mon 10 - 11 am Wed 5 -6 pm	206-3201	rcooper@physci.ucla.edu
Dr. G.L. Fain	3836 LSB	Mon 11 am – noon Tues 12.30-1.30 pm	206-2411	gfain@ucla.edu

Lab Coordinator:

Dr. Gaston Pfluegl 2340 YHS 794-4113 drpfluegl@gmail.com

Teaching Assistants:

Behnood Khodayari	TAbehn@gmail.com
Sara Chalifoux	sarachalifoux@ucla.edu
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Course Administrator:

Ms. Lily Yanez 2305 LSB M – F 9-12, 1-4.30 pm 825-6614 yanez@lifesci.ucla.edu

*T.A. Office hours will be announced during the first discussion section

II. TEXTBOOK AND SUPPORTING MATERIALS

Purves, Sadava, Orians, and Heller. 2007. *Life, The Science of Biology, 8 th Edition*.
On reserve in the College Library (Powell). Text available for purchase at
ASUCLA Bookstore.

LS2 Laboratory Manual and “The Nature and Properties of Biologically Important
Macromolecules” (Interactive CD). Available for purchase at ASUCLA Bookstore.

Discussion Articles. Available on-line through University of California–10 campuses website of Scientific American Archive Online.

Article 1. Christian de Duve, *The Birth of Complex Cells*. Scientific American: April 1996; 8 pages

Article 2 [TBA](#)

Article 3. TBA

Article 4. TBA

III. DISCUSSION SECTION AND LABORATORY SCHEDULE

A Lab Manual should be obtained from the UCLA Bookstore. **It is important that you attend each laboratory at your designated time; there is no provision to make up a missed lab session.**

Packaged with the Course reader is a CD-ROM entitled “The Nature and Properties of Biologically Important Molecules” which runs on either a PC or Mac format. You are expected to familiarize yourself with this material as only limited lecture time is available to cover this basic material. During the week 1 lab you will have an opportunity to clarify any questions you have concerning material on the CD-ROM with your TA. Midterm 1 will contain a certain number of questions on this material.

WEEK	WEEK OF	TOPIC	ASSIGNMENT /SESSION DUE DATE
1	Oct 2	Lab 1: Introduction to Scientific Method; Biomolecules CD-ROM Review	Lab Report due Week 2
2	Oct 9	Discussion:	Article 1/Due Week 3
3	Oct 16	Lab 2: Metabolism	Lab Report/Due Week 4
4	Oct 23	Discussion:	Article 2/Due Week 5
5	Oct 30	Lab 3: Pigments of Photosynthesis	Lab Report/Due Week 6
6	Nov 6	Discussion:	Article 3/Due Week 7
7	Nov 13	Lab 4: Rat Dissection	In-class assignment
8	Nov 20	No Discussion (Thanksgiving week)	No assignment.
9	Nov 27	Discussion:	Article 4/Due Week 10
10	Dec 4	Lab 5: Histology and Microscopy	Identify unknown slides in lab.

Please note that with the exception of weeks 7 & 10 (assignment completed in lab) all other assignments will be due at the BEGINNING OF THE DISCUSSION SESSION THE FOLLOWING WEEK. Failure to turn in the assignment at the above time will result in a LATE PENALTY (2 point deduction PER DAY for every day beyond the due date).

Questions for assignments based on the *Scientific American* articles will be given out in class at the beginning of the week in which the assignment is to be carried out; thus, depending on the timing of your particular discussion section, you will have at least **one week** to complete the assignment before the due date. Copies of the question sets will also be posted on the course web-site.

During the discussion sections your T.A. will review aspects of the lecture material which may require clarification, go over *Scientific American* articles assigned for that week (you should have read these beforehand as the T.A. may ask *you* questions), and discuss answers to previously graded assignments.

IV. GRADING

100	• Midterm Exam 1	
100	• Midterm Exam 2	
20	• Section (4 <i>Scientific American</i> article assignments - 5 points each)	
80	• Laboratory Exercises	
	Scientific Method Lab Report	10 pts
	+ Proposal for further Research	5 pts
	Metabolism Lab Report	18 + 4 pts*
	Photosynthesis Lab Report	15 + 4 pts*
	Rat dissection assignment	8 pts
	Histology lab questions	16 pts
	* denotes 4 quiz points	
200	• Final Exam (comprehensive)	

500 • **Total Points Possible**

The rooms where examinations are to be held will be announced in lecture and also posted on the course web-site. Examinations will be based primarily on material covered in lectures, but will also cover material from reading assignments and from the *Scientific American* articles. The final exam (entirely multiple-choice) is **comprehensive**, although it emphasizes material from the last third of the course. The final exam will include questions (worth 20 points) based on the laboratory experiments. The two midterm exams will include both multiple-choice type questions as well as short-answer questions.

NO MAKE-UP EXAMS WILL BE GIVEN !! If you are unable to take an examination or final because of illness, or other emergency, you are responsible for contacting

the Life Science Core Curriculum office (2305 Life Sciences Building; tel. 825-6614) **before** the examination. You are required to have written verification from a physician regarding the illness, or parent (emergency).

V. ACADEMIC INTEGRITY:

All students are held responsible for the information given in the UCLA Student Conduct Code (www.deanofstudents.ucla.edu) and are expected to be aware of the University policies on academic integrity. Please note section 102 regarding academic dishonesty, cheating, fabrication, plagiarism, and multiple submissions of work in multiple courses. All written assignments are to be the original work of each individual student or, for the three Lab Reports, the Lab team. Evidence of plagiarism or cheating during examinations will be referred to the Dean of Students.