

BIOLOGY OF HUMAN CANCER -- MCB 132 – FALL 2016

Three hours of lecture and one hour of discussion per week [4 units]

Prerequisites: Biology 1A, 1AL, 1B, 102. 104 or 110 may be taken concurrently.

Lectures:

Tu, Thu 2:00 - 3:30, 106 Stanley Hall

Discussion sections: (Note: no discussion sections first week)

101: Tues 1 - 2 pm, 9 Evans (Tsai-Ching Hsi)

102: Tues 4 - 5 pm, 2066 Valley LSB (Stefanie Engert)

103: Wed 1-2 pm, 110 Barker (Tsai-Ching Hsi)

104: Wed 2-3 pm, 105 Dwinelle (Stefanie Engert)

Web-site:

<http://bCourses.berkeley.edu>. Log on with your CalNet ID and click the MCB 132 Fall2016 tab.

Text:

The Biology of Cancer, R.A. Weinberg, 2nd edition (Garland Science, 2014)

Instructors:

David Bilder

Office: 348 LSA

Phone: 642-8605

e-mail: bilder@berkeley.edu

Office Hours: Tuesdays 3:30-5pm (or by appointment)

Kunxin Luo

Office: GL 41A Koshland Hall

Phone: 643-3183

e-mail: kluo@berkeley.edu

Office Hours: Wednesdays 9 - 10:30 am (or by appointment)

Lin He

Office: LKS 2nd floor lobby

Phone: 642-9562

e-mail: lhe@berkeley.edu

Office Hours: Tuesday 3:30 - 5pm (or by appointment)

GSIs:

Stefanie Engert

e-mail: stefanie.engert@berkeley.edu

Office Hours and location: Mondays 8-9AM and Fridays 4-5PM; 105 GPB

Tsai-Ching Hsi

e-mail: tsaichih@berkeley.edu

Office Hours and location: Thursdays 4-5PM and Fridays 3-4PM; 349 LSA

MCB 132 – FALL 2016 – SCHEDULE

Wk	Date	Lec	Lecturer	Topic	Textbook Chapter
1	Thu Aug 25	1	DB	Introduction to cancer	2
2	Tue Aug 30	2	DB	Experimental approaches to cancer	2
	Thu Sep 1	3	DB	Tumor viruses	3
3	Tue Sep 6	4	DB	Oncogenes I	4
	Thu Sep 8	5	DB	Oncogenes II	4
4	Tue Sep 13	6	DB	Growth factors and their receptors	5
	Thu Sep 15	7	DB	Ras and Growth factor receptor signaling	5, 6
5	Tue Sep 20	8	DB	Oncogenes/tumor suppressors in development	6
	Thu Sep 22	9	DB	Cancer lessons from non-vertebrates	3
6	Tue Sep 27			MIDTERM 1	
	Thu Sep 29	10	KL	Tumor suppressors I	7
7	Tue Oct 4	11	KL	Tumor suppressors II	7
	Thu Oct 6	12	KL	Cell cycle regulation; Rb; the restriction point	8
8	Tue Oct 11	13	KL	P53	9
	Thu Oct 13	14	KL	Regulation of apoptosis	9
9	Tue Oct 18	15	KL	Telomeres and telomerase	10
	Thu Oct 20	16	KL	Genomic instability I	12
10	Tue Oct 25	17	KL	Genomic instability II	12
	Thu Oct 27	18	LH	Tumor progression I	11
11	Tue Nov 1	19	LH	Tumor progression II	11
	Thu Nov 3	20	LH	Tumor progression III - Cancer Stem Cells	11
12	Tue Nov 8			MIDTERM 2 -	
	Thu Nov 10	21	ER	Tumor immunology	15
13	Tue Nov 15	22	LH	Tumor stroma interaction	13
	Thu Nov 17	23	LH	Tumor invasion and metastasis I	14
14	Tue Nov 22	24	LH	Tumor invasion and metastasis II	14
	Thu Nov 24			THANKSGIVING	
15	Tue Nov 29	25	LH	Cancer therapy I	16
	Thu Dec 1	26	LH	Cancer therapy II / Review	16
16	Dec 5 - 9			REVIEW WEEK	
	Tue Dec 13			FINAL EXAM (9:30 - 11:00 AM)	

MCB 132 - GRADING AND COURSE POLICIES - FALL 16

GRADING

1. Midterms and Final

Midterm 1 will have questions based on material covered in Lectures 1 - 9. It will be worth **120 points**.

Midterm 2 will have questions based on material covered in lectures 10 - 17. It will be worth **120 points**.

Midterm 1 and Midterm 2 will be held during normal class hours.

The **final examination** is **NOT** accumulative and will be worth **120 points** (materials covered in lectures 18-26).

The final will be held on **Tuesday December 13** (9:30-11:00 am). Please check the "schedule of classes" for location. **We cannot reschedule the final for students who have other exams on the same day: so check the final exam calendar in the online schedule .**

ADVICE FROM INSTRUCTORS

A biochemistry/molecular course, either MCB 102, MCB104 or MCB 110 is required (may be taken concurrently). All students in MCB 132 must have completed such a course before enrolling or be taking the course this semester.

The single most important element in doing well with this material is keeping up to date. Reviewing your notes before the next lecture and looking at the assigned reading the same day as the lecture has proven to make an enormous difference in the final result. Do not hesitate to ask the instructors questions. Reviewing the material only before exams is a very poor strategy, since each lecture in turn uses the material in previous lectures. Since we assume you have mastered the previous material, it is easy to get left behind.

PLEASE ASK QUESTIONS IN SECTION AND OFFICE HOURS. We will be happy to answer them. The best time to ask them is after reviewing your notes just after each lecture. Email should only be used for administrative purposes.

COURSE MECHANICS

1. **Missed midterms:** The two Midterms and the Final are on announced firm dates. Grades will be posted as soon as possible in announced locations. **There are no make-ups for any of the midterms or final. Students will not be penalized for missing midterms if BOTH of the following conditions are met:**

a. The student makes the request in writing, no later than 2 days after the date of the midterm, and provides acceptable reasons for missing the exam. The request should be supported by appropriate documentation, eg a doctor's note. Examples of acceptable excuses for a missed examination are serious illness or accident or a serious illness or death in the immediate family. **You should NOT schedule professional or medical school interviews on midterm dates. Attending a sport event, family activities or a wedding is not an acceptable excuse.**

b. The midterm that was missed is completed satisfactorily as a take-home problem set, which can be completed with the aid of notes and texts. This will be due in the hands of the relevant instructor no later than 5 p.m. of the third day after the midterm was given. To be completed satisfactorily, the student's score on the take-home test must be at or above the class median for the examination. If the exam is completed satisfactorily and the excuse was acceptable, the missed exam will not count against the student's final grade, i.e. the student's final grade in the course will be based on his/her

performance on the other midterm and the final examination. If the missed exam is not completed satisfactorily as a problem set, or if the excuse was not acceptable, a score of zero will be assigned, and this zero score will be averaged with the student's scores on the other examinations when the final grade is determined.

An incomplete will be granted if the final is missed for an acceptable and documented reason (see item 3 below) and if the student is performing at the passing level or better.

A student is only permitted to miss one midterm at most.

2. Grading system: We will use a hybrid between standards-referenced grading (absolute grading) and norm-referenced grading (grading on a curve). We will calculate the mean score of the top 10% of the class (which in the past has ranged from 88% to 93%) and then use the following cut-offs:

A: $\geq 90\%$ of the mean score of the top 10%

B: $\geq 77.5\%$ of the mean score of the top 10%

C: $\geq 65\%$ of the mean score of the top 10%

D: $\geq 50\%$ of the mean score of the top 10%

Please note that the above system is used as a general guideline. At the end of the course, before assigning final grades, we will make modest adjustments to the cut-offs after reviewing borderline cases and evidence of improvement over the semester.

3. Regrading: The Midterms will be handed back and may be subject to regrading if substantial errors are found. Midterms must be completed in ink. Contact your GSI, and only during his/her office hours, with your request for regrading of questions. All requests must be submitted in writing with a detailed explanation of the specific questions and items you are contesting. You should be aware that other questions may be regraded and that your score could therefore decrease. The final exam cannot be regraded. Midterms are routinely xeroxed before they are handed back and if an alteration is found on an exam question for which regrading is requested, the student will automatically be assigned a zero for that entire test and the Office of Student Conduct will be notified. Copying another's answers during an exam and other forms of cheating will result in the same penalties. The Final cannot be handed back as it is part of your record, but can be examined on request the next semester.

4. Incompletes: See Professor He as soon as possible if you wish to request an incomplete. These requests are rarely granted and only for exceptional cases of prolonged illness or truly exceptional family emergencies that extend over long periods of time. An incomplete will also be given if a student is unable to attend the final exam because of an incapacitating illness or accident or a serious illness or death in the immediate family. Documentation will be required for all such requests. An incomplete can only be assigned if the work that has been completed is of passing quality. If an incomplete has been granted you can obtain an "I" Grade Report Form and instructions on their use from the staff in 2083 VLSB.

5. Letters of recommendation: Any of the three instructors may be approached for a letter of recommendation and are willing to provide a written evaluation for this purpose. So that we may prepare effective evaluations we ask that you follow the procedure outlined here. Be sure to attend at least 2 of the instructor's office hours. In addition, ask your GSI to write a brief note about your participation in section and email it to the instructor. Sometime after the end of the course, request an interview with the instructor and bring a copy of your complete transcript, your CV (resume), your statement of purpose, the career center confidentiality waiver form, and any recommendation forms that need to be completed.

6. Testing accommodations: Students with disabilities who wish to request testing accommodations should make their request to the Disabled Students' Program (DSP) as early as possible in the semester, so that we can make appropriate proctoring arrangements. It may not be possible to honor requests made at the last minute.

7. Safe, Supportive, and Inclusive Environment

Whenever a faculty member, staff member, post-doc, or GSI is responsible for the supervision of a student, a personal relationship between them of a romantic or sexual nature, even if consensual, is against university policy. Any such relationship jeopardizes the integrity of the educational process.

Although faculty and staff can act as excellent resources for students, you should be aware that they are required to report any violations of this campus policy. If you wish to have a confidential discussion on matters related to this policy, you may contact the Confidential Care Advocates on campus for support related to counseling or sensitive issues. Appointments can be made by calling [\(510\) 642-1988](tel:5106421988).

The classroom, lab, and work place should be safe and inclusive environments for everyone. The Office for the Prevention of Harassment and Discrimination (OPHD) is responsible for ensuring the University provides an environment for faculty, staff and students that is free from discrimination and harassment on the basis of categories including race, color, national origin, age, sex, gender, gender identity, and sexual orientation. Questions or concerns? Call [\(510\) 643-7985](tel:5106437985), email ask_ophd@berkeley.edu, or go to <http://survivorsupport.berkeley.edu/>.