

Biochemistry of Cancer (11:115:421)

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Book: *The Biology of Cancer*, Weinberg 2013

Amazon offers the rental of a kindle/ebook version for a significant savings. Link: https://www.amazon.com/Biology-Cancer-2nd-Robert-Weinberg/dp/0815342209/ref=sr_1_1?ie=UTF8&qid=1483630403&sr=8-1&keywords=biology+of+cancer

*This book is not required. However, many of the lectures will be focused off material from this book.

Learning Goals: By the end of this semester students will be able to:

1. Explain the basic biochemical mechanisms of cancer.
2. Read current articles related to cancer research and discuss them.
3. Generate a novel hypothesis in cancer research and describe how to experimentally test it.

Course Organization: This course meets two times a week. For the first half of the semester, we will have lectures and meet in the scheduled room. For the second half of the semester, we will split into groups so we can do journal clubs focused on current research papers.

Student Requirements:

Exams: There is one exam in this course, a midterm that covers all the foundation lectures for the course. The midterm will be taken home and students will be given a week to complete it. Additional details concerning the midterm will be discussed in class.

Journal Clubs: During the second half of the semesters, we will have journal clubs. Each week you will be responsible for being able to explain an assigned current research paper. During Journal Club you will be asked to explain some aspect of the paper, and to participate in discussions. Group Assignments will be announced the week prior to starting Journal Clubs.

Final Paper: The final assignment will be to write a grant proposal focusing on the topics that we have covered in class. A detailed description of the format and expectations will be given to students following the midterm assignments. Student workgroups will be assigned and on the last Thursday class, groups will meet to talk about each other's proposals. Dr. White will be on hand to help with questions concerning the final projects.

Student performance in this course will be evaluated based on:

Journal Club	(40%)
Midterm exam	(30%)
Final report	(30%)

Grades are based on the writing assignments *and participation in class discussions*. Students are expected to come to class prepared. **Cell phones and beepers must be turned off during class.** Late papers will not be accepted unless the student makes prior arrangements with the professor.

BIOCHEMISTRY OF CANCER (Monday/Wednesday) 11:115:421

week	DATE	TOPIC		READING	ASSIGNMENT
1					
	1-22 (W)	INTRODUCTION	LW		
2	1-27 (M)	Cancer Etiology: The Biology and Genetics of Cells and Organisms; The Nature of Cancer	HD	Ch. 1/2	
	1-29 (W)	Cancer Etiology: Tumor Viruses	HD	Ch. 3	
3	2-3 (M)	Oncogenes & Tumor Suppressors	HD	Ch. 4/7	
	2-5 (W)	Receptors and Second Messengers	LW	Ch. 5/6	
4	2-10 (M)	Cell cycle & Apoptosis	LW	Ch. 8/9	
	2- 12(W)	Multistep Carcinogenesis	LW	Ch. 11	
5	2-17(M)	DNA Damage	LW	Ch.12	
	2-19 (W)	Metastasis and Angiogenesis	LW	Ch 13/14	
6	2-24 (M)	Cancer and the Immune System	HD	Ch. 15	
	2-26(W)	Cancer Chemotherapy	HD	Ch. 16	
7	3-2 (M)				
	3-4(W)				
8	3-9(M)	SPRING BREAK!			
	3-11(W)				
9	3-16 (M)	SPRING BREAK!			
	3-18 (W)				
10	3-23(M)	How to read a paper/ What is Journal Club?			
	3-25 (W)	TBA			
11	3-30 (M)	Groups 1&3			
	4/1 (W)	Groups 2 & 4			
12	4-6 (M)	Groups 1&3			Specific Aims for Final Paper
	4-8(W)	Groups 2 & 4			
13	4-13 (M)	Groups 1&3			
	4-15(W)	Groups 2 & 4			
14	4-20 (M)	Groups 1&3			
	4-22 (W)	Groups 2 & 4			
15	4-27 (M)	Meet for grant reviews			
	4/29 (W)				
	5-4 (M)	LAST CLASS			Grant Proposals Due

**Note the course schedule is subject to change: dates, time, location. The updated information will be available to students on the canvas site and the course schedule site.*