Biol. 445
Cancer Biology
Spring Semester 2019

Wilson Hall 128: T, Th 2-3:15 PM
Instructors:
Professor Bob Duronio (3350 Genome Sciences Building) duronio@med.unc.edu
Professor Mark Peifer (521 Fordham Hall) peifer@unc.edu
TA Hannah Wiedner hwiedner@email.unc.edu

Office hours: See course front page for times and days.

Required text:
It is available for purchase in the Student Stores or from many online sources--Used texts are often available at a reduced price. We will not use any accessory materials from the publisher so a rental online version will also work.

The required reading is indicated below. For each class period complete the Required Reading along with the Lecture Guide BEFORE class, and complete the accompanying online quiz on this material in Sakai. The Lecture Guide and the Powerpoints are found on the “Lecture guides/Powerpoints” section of the main course website

CHECK BACK AS ASSIGNMENTS MAY CHANGE AS SEMESTER PROCEEDS

Powerpoints and Links to other readings are on course website

Online Lecture and reading to complete BEFORE the first day of class:
Basic properties of cancer cells/multigenic nature of cancer/basic genetics
Online lecture: https://unc.voicethread.com/share/6417683/
Plus Weinberg Chapt. 1, pp12-13, Chapt 2.1-2.5 (pp. 31-41), Chapt. 5.1 (pp. 131-135), Chapt. 11.1-11.5 (pp. 439-458)
Thursday January 10  
Viral oncogenes—the story of src (MP)  
Weinberg Chapt. 3.1-3.3 (pp. 71-79), 3.5-3.13 (pp 82-102), Chapt. 5.2 (pp, 135-138), 5.9 (pp. 161-165)

Tuesday January 15  
Current thoughts about src function (MP)  
Weinberg Chapt. 6.3 (pp. 182-188)

Thursday January 17  
The discovery of cellular oncogenes—the story of ras (MP)  
Weinberg Chapt. 4.1-4.4 (pp. 103-110; 112-117), Chapt. 5.10 (pp. 165-169).

Tuesday January 22  
How did model organisms inform our understanding of ras function (MP)  
Weinberg Chapt. 6.2 (pp. 180-182), 6.4-6.5 (pp. 188-192)

Thursday January 24  
Course Exercise 1-TBA

Tuesday January 29  
The EGF-receptor pathway and Herceptin therapy (MP)  
Weinberg Chapt. 4.3 (pp. 110-111), Chapt 5.3-5.6 (138-153), Chapt. 16.1-16.5 (797-824), 16.13 (pp. 844-850)

Thursday January 31  
The EGF-receptor pathway and Herceptin therapy (continued)  
PaperDiscussion

Tuesday February 5  
EXAM 1

Thursday February 7  
Cell Cycle I: Concepts of control  

Tuesday February 12
Cell Cycle II: Cyclin/Cdk regulation

Thursday February 14
Course exercise on the cell cycle

Tuesday February 19
Tumor Suppressors
Weinberg Chapter 7.1-7.7, pages 231-249.

Thursday February 21
Retinoblastoma: mechanism of action
Weinberg Chapter 8.5-8.13, pages 294-329.

Tuesday February 26
p53 and Cell Cycle Checkpoints
Weinberg Chapter 9.1-9.12, pages 331-361; Ch. 16.3-16.4 pages 813-818

Thursday February 28
Course exercise 3 on tumor suppressors

Tuesday March 5
Course Exercise 4

Thursday March 7
EXAM 2

March 9-17 Spring Break

Tuesday March 19
CLASS PRESENTATIONS 1

Thursday March 21
CLASS PRESENTATIONS 2

Tuesday March 26
Cancer Genomics I
Thursday March 28
Special Guest—Dr. Katherine Hoadley, Assistant Professor of Cancer Genetics, UNC School of Medicine
https://unclineberger.org/people/profiles/katherine-hoadley

Tuesday April 2
Cancer Genomics II

Thursday April 4
CLASS PRESENTATIONS 3

Tuesday April 9
Chromatin and Cancer
Weinberg Chapter 1.8, pages 21-24; Ch 10.1 sidebar, pages 402-403

Thursday April 11
CLASS PRESENTATIONS 4

Tuesday April 16
CLASS PRESENTATIONS 5

Thursday April 18
Chromosomal rearrangements—abl and oncogenesis (MP)
Weinberg Chapt 4.6 9 (pp. 124-126), Chapt. 16.6-16.12 (pp. 822-844)

Tuesday April 23
Abl and the dawn of personalized therapy (MP)

Thursday April 25
Course Exercise 5

FINAL EXAM [We do not choose date or time!]