

Molecular Genetics of Human Cancer

Pathology 4450A/Biochemistry 4450A

Live: Tuesdays 5:30-7:30pm

September

S	M	T	W	T	F	S
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	1	2	3

October

S	M	T	W	T	F	S
27	28	29	30	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5

December

S	M	T	W	T	F	S
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2

Lecture:
1/2
3/4
5/6

7/8
9/10
11/12
13/14

15/16
17/18
19/20

21/22
23

Assessment:

Assignment #1
Online quiz

Assignment #2
Mid-term
exam

Mid-term makeup
Assignment #3

Assignment #4
Final exam

lecture 1: Course Introduction and the Hallmarks of Cancer
lecture 2: The 'Cancer Genes' – TP53
lecture 3: The 'Cancer Genes' – Ras and RB
lecture 4: Intro to Cancer Genomics and lessons in cBioPortal
lecture 5: Model systems in Cancer Biology
lecture 6: Multistage Progression

Take home quiz (2.5 hours, lectures 1-6)

lecture 7: Apoptosis
lecture 8: Immortality and Senescence
lecture 9: Genomic Instability: enabling Cancer progression
lecture 10: DNA Repair: Overview and Concepts
lecture 11: DNA Repair Errors in Specific Cancers
lecture 12: Review, feedback

Take home Mid-term (5 hours, lectures 1-12)

lecture 13: Gene-Environment interactions
lecture 14: Cancer Epigenetics - Chromatin
lecture 15: Cancer Epigenetics – Non-coding genome
lecture 16: Cancer Epigenetics – Cancer drivers
lecture 17: Metastasis and Angiogenesis
lecture 18: Cancer Pharmacogenetics
lecture 19: New Cancer Therapies I: Trials and designs
lecture 20: New Cancer Therapies II: CDK4/6 inhibitors
lecture 21: New Cancer Therapies III: Synthetic lethality
lecture 22: New Cancer Therapies IV: Synthetic lethality
lecture 23: Review, feedback

Take home Final exam (7 hours, lectures 1-22)