

MCB 250: Molecular Genetics
Fall 2019

	Day	Date	Lecturer	Lecture Topic	Assigned Reading from Watson et al. Molecular Biology, 7 th Ed (Chapter) Pages
1	M	8/26	Slauch	Introduction To MCB 250; The Central Dogma	(2) 33-41
2	W	8/28	Slauch	Chemical Basis of Molecular Biology	(3) 51-63
3	F	8/30	Slauch	DNA Structure	(1) 5-17*; (2) 21-30; (4) 77-82
	M	9/2		No Lecture-Labor Day	
4	W	9/4	Slauch	DNA Structure and Analysis	(4) 82-92
5	F	9/6	Slauch	Methods for Studying DNA	(7) 147-153
6	M	9/9	Slauch	Protein Structure Homework #1 (Lectures 1-4) due 1:00 PM	(6) 121-133
7	W	9/11	Slauch	Protein Structure; Protein Folding	(6) 133-141
8	F	9/13	Slauch	Methods for Studying Proteins; Protein Purification Quiz #1 (Lectures 1-8) opens 2 PM, closes 9/16 8 PM	(7) 173-177
9	M	9/16	Slauch	DNA Supercoiling Homework #2 (Lectures 5-8) due 1:00 PM	(4) 93-104
	W	9/18	Slauch	<i>Optional Review Session (1:00 PM; Lincoln Hall Theater)</i>	
	W	9/18		Examination I (7:00–9:00 PM) Covers material through lecture 8	
10	F	9/20	Slauch	Chromosome Structure; DNA Condensation; DNA Replication	(8) 220-236; (9) 257-260
11	M	9/23	Slauch	DNA Replication	(9) 260-288
12	W	9/25	Slauch	Replication Initiation and Termination; Telomeres and Telomerase	(9) 288-306; (7) 158-162
13	F	9/27	Slauch	RNA Structure; Transcription in Prokaryotes	(5) 107-116; (13) 429-434
14	M	9/30	Slauch	Transcription in Prokaryotes; Processing of rRNA and tRNA	(13) 434-447
15	W	10/2	Slauch	Transcription in Eukaryotes	(13) 448-463
16	F	10/4	Slauch	Transcription in Eukaryotes; mRNA Splicing	(14) 467-478; (14) 503-506
17	M	10/7	Slauch	Translation in Prokaryotes; The Genetic Code Homework #3 (Lectures 9-13) due 1:00 PM	(15) 509-528; (16) 573-577
18	W	10/9	Slauch	Translation in Eukaryotes	(15) 528-549
19	F	10/11	Slauch	Mutation and DNA Repair Quiz #2 (Lectures 9-19) opens 2 PM, closes 10/14 8 PM	(10) 313-338
20	M	10/14	Slauch	Homologous Recombination; Nonhomologous End Joining Homework #4 (Lectures 14-19) due 1:00 PM	(11) 341-361
	W	10/16	Slauch	<i>Optional Review Session (1:00 PM; Lincoln Hall Theater)</i>	
	W	10/16		Examination II (7:00-9:00 PM) Covers material through lecture 19	
21	F	10/18	Smith-Bolton	What is a gene? (Deadline to drop a course without grade of W)	5-17
22	M	10/21	Smith-Bolton	Molecular analysis of genes	154-165

23	W	10/23	Smith-Bolton	Molecular analysis of gene expression	151-154 & additional reading
24	F	10/25	Smith-Bolton	Overview of gene regulation	615-626 & 182-184
25	M	10/28	Smith-Bolton	Transcriptional regulation in bacteria, Part I	Same as preceding lecture
26	W	10/30	Smith-Bolton	Transcriptional regulation in bacteria, Part II	627-630 & Fig. 18-15
27	F	11/1	Smith-Bolton	Propagation of bacteriophage λ , Part I	636-648 & Box 18-6
28	M	11/4	Smith-Bolton	Propagation of bacteriophage λ , Part II Homework #5 (Lectures 20-24) due 1:00 PM	377-381
29	W	11/6	Smith-Bolton	Activating transcription in eukaryotes	657-665, 672-673, 675, & Box 21-4 (pg. 752)
30	F	11/8	Smith-Bolton	Chromatin remodeling and DNA methylation Quiz #3 (Lectures 20-30) opens 2 PM, closes 11/11 8 PM	667-672 & Figs. 8-39/40 (pg. 242-243), 692-697
31	M	11/11	Smith-Bolton	Differential gene expression in embryos Homework #6 (Lectures 25-30) due 1:00 PM	733-738, 682-686 & Fig 21-7 (pg. 742)
	W	11/13	Smith-Bolton	Optional Review Session (1:00 PM; Lincoln Hall Theater)	
	W	11/13		Examination III (7:00-9:00 PM) Covers material through lecture 30	
32	F	11/15	Smith-Bolton	Establishing body axes in the <i>Drosophila</i> embryo	746-753
33	M	11/18	Smith-Bolton	Transposable elements; Transgenes, Part I	393-405 & 824-827
34	W	11/20	Smith-Bolton	Transgenes, Part II Transgenes, Part II	825-829
35	F	11/22	Smith-Bolton	Gene therapy and genetically modified organisms	Additional reading
	M-F	11/25-11/29		No Lecture-Fall Break	
36	M	12/2	Smith-Bolton	Regulatory RNAs in bacteria	701-711
37	W	12/4	Smith-Bolton	RNA interference (RNAi) in eukaryotes	711-726
38	F	12/6	Smith-Bolton	Regulation of gene expression by alternative splicing Quiz #4 (Lectures 31-39) opens 2 PM, closes 12/11 8 PM	483-486 & 491-496
39	M	12/9	Smith-Bolton	Gene rearrangements in the vertebrate immune system Homework #7 (Lectures 31-39) due 1:00 PM	416-420
40	W	12/11	Smith-Bolton	Evolution of genes and genomes	762-769
	TBA		Smith-Bolton	Optional Review Session (TBA)	
	Thursday	12/19		Examination IV (8:00-11:00 am) Location TBA Covers material through lecture 40	

***We are assuming that you have previously studied Mendelian Genetics. If not, spend more time reading Chapter 1 of the text and seek additional resources if necessary. We will use some of the Mendelian terms (e.g. recessive allele) frequently throughout the course.**
