

BMB 801 Introduction to Molecular Biology Fall 2009 9:10-10:00 MWF 101 BCH
Background reading about methods and model systems is presented in Chapters 21 and 22

Date	Instructor	Text: Molecular Biology of the Gene, VIth Ed. Watson, Losick, Levine et al.
1. September 2	Henry	<u>DNA structure and topology</u> 1. DNA structure Ch. 2, 6
2. September 4	Henry	2. Chromosomes and chromatin Ch. 7
3. September 7	Henry	3. DNA topology and topoisomerases
4. September 9	Henry	4. DNA topoisomerases
5. September 11	Henry	<u>DNA modifying enzymes</u> 5. Restriction endonucleases, polynucleotide kinase, endo/exonucleases
6. September 14	Henry	6. other DNA modifying enzymes
7. September 16	Henry	7. DNA ligases
8. September 18	Henry	<u>DNA Replication</u> Ch. 8 8. DNA primases
9. September 21	Henry	9. DNA helicases
10. September 23	Henry	10. DNA polymerases
11. September 25	Henry	11. DNA polymerase clamps and clamp loaders
12. September 28	Henry	12. <u>Bacterial replication</u> Proteins at the replication fork
13. September 30	Henry	13. Regulation of replication
14. October 2	Henry	14. Mitochondrial DNA replication
15. October 5	Weinreich	15. <u>Eukaryotic replication</u> Proteins, the SV40 virus model
16. October 7	Weinreich	16. Yeast DNA replication: origins and regulation
17. October 9	Weinreich	17. Telomeres and centromeres
18. October 12	Arnosti	18. Reverse transcriptase and retroviruses Ch. 11p. 347-350
October 13th		<u>Midterm 1 (lectures 1-16) 7:30-9:00 p.m.</u>
19. October 14	Arnosti	19. Recombination Ch. 1, 10
20. October 16	Arnosti	20. Recombination at replication forks; specialized recombination Ch. 11
21. October 19	Arnosti	21. DNA damage and repair Ch. 9
22. October 21	Arnosti	22. Overview of transcription, methods, polymerase Ch. 12, 16, 17
23. October 23	Arnosti	23. Prokaryotic and initiation and elongation, sigma factors
24. October 26	Arnosti	24. The <i>lac</i> operon
25. October 29*	Arnosti	25. Termination and attenuation
26. October 30	Arnosti	26. Transcription in eukaryotes Ch. 19, 20
27. November 2	Arnosti	27. RNA polymerase II basal factors and initiation, RNA polymerases I and III
28. November 4	Arnosti	28. Transcriptional activators
29. November 6	Arnosti	29. Transcriptional repressors
30. November 9	Arnosti	30. Chromatin Ch. 7
31. November 11	Arnosti	31. Chromatin part 2
32. November 13	Arnosti	32. Genome-wide and developmental control of transcription
review Nov. 15*		optional review session
33. November 16	Arnosti	33. Capping and polyadenylation
34. November 16*	Arnosti	34. pre-mRNA splicing Ch. 13
November 17th		<u>Midterm 2 (lectures 17-32) 7:30-9:00 p.m.</u>
35. November 18	Arnosti	35. Regulation of splicing
36. November 23	Arnosti	36. Catalytic RNA
37. November 23*	Arnosti	37. RNA editing
38. December 1*	Arnosti	38. mRNA degradation
39. December 2	Arnosti	39. miRNA and RNAi Ch. 18
40. December 4	Arnosti	40. Translation Ch. 14
41. December 7	Arnosti	41. The ribosome; structure and function
42. December 9	Arnosti	42. Alternative codes
43. December 11	Arnosti	43. Translational regulation
(*evening sessions)		(6 p.m. – 7 p.m. BMB 101)
December 18th		<u>Final Exam (cumulative) 7:45 a.m.- 9:45 a.m.</u>