

## MCB 4304 Syllabus Genetics of Microorganisms: Summer 2024

### Molecular Biology, Weaver 5<sup>th</sup> Edition

Week	Topic
Week 1	Introduction, (review of Classical Genetics and Meiosis – handout) Risk and Pseudoscience Chapter 1: Initial Concepts Chapter 2: Molecular Nature of Genes Chapter 3: Introduction to Gene Function
Week 2	Case Study 1: Gender Chapter 4: Molecular Cloning (part 1) Chapter 4 – Part 2 Notes on Genetic Engineering Chapter 5 – Molecular Tools (Part 1)
Week 3	Chapter 5 – Part 2 Chapter 5 – Part 3 CRISPR-Cas9 Chapter 6 – Mechanisms of transcription (Part 1) Chapter 6 – Part 2 Chapter 6 – Part 3
Week 4	Chapter 7 – Operons (Part 1) Chapter 7 – Part 2 Chapter 7 – Part 3 Chapter 7 – Part 4
	<b>EXAM 1: June 10<sup>th</sup> (second segment starts; Dr. Lee)</b>
Week 5	Chapter 8 & 9: DNA Protein Interactions Ascent of Genetics
Week 6	Chapter 10: Eukaryotic Transcription Topics in Genomics
Week 7	Chapter 11: Eukaryotic General Transcription Factors Topics in Genomics
Week 8	Chapter 12: Eukaryotic Transcription Activators Chapter 13: Chromatin Structure Topics in Genomics

**EXAM 2 July 8<sup>th</sup> (Third segment starts; Dr. De)**

Week 9	Chapter 12 and beyond: Transcription factors, Enhancers, etc. Signal Transduction
	Chapter 14: Posttranslational modifications RNA processing I, RNA splicing, Introns, Exons
Week 10	Chapter 15: RNA processing II CAP, Polyadenylation
	Chapter 16: Translation Initiation
Week 11	Chapter 17: Translation Elongation, Termination
	Chapter 18: Translation Ribosome
Week 12	Chapter 20: DNA replication I: Mechanism, Enzymology, Mutation, and Repair
	Chapter 21: DNA replication II Detailed mechanism, Termination

**EXAM 3 August 5<sup>th</sup>**

Please follow the schedule (for chapter, lecture videos, exams, etc.) as posted on CANVAS. This syllabus just provides an outline of the course.