

MCB 6937 Syllabus Genetics of Microorganisms: Spring 2024

Molecular Biology, Weaver 5th Edition

Week	Topic
Week 1	Introduction, Chapter 1: Initial Concepts Chapter 2: Molecular Nature of Genes Chapter 3: Introduction to Gene Function
Week 2	Chapter 4: Molecular Cloning (part 1) Chapter 4: Molecular Cloning (part 2) Chapter 4: Molecular Cloning (PCR) Chapter 4: Molecular Cloning (gene editing)
Week 3	Chapter 5 – Molecular Tools (Part 1) Chapter 5 – Molecular Tools (Part 2) Chapter 5 – Molecular Tools (Part 3) Chapter 5 - Molecular Tools (Part 4) CRISPR-Cas9
Week 4	Chapter 6 – Mechanisms of transcription (Part 1) Chapter 6 – Mechanisms of transcription (Part 2) Chapter 6 – Mechanisms of transcription (Part 3)
Week 5	Chapter 7 – Operons (Part 1) Chapter 7 – Operons (Part 2)

Chapter 7 – Operons (Part 3)

Chapter 7 – Operons (Part 4)

EXAM 1 Feb 12

Week 6 Chapter 8 & 9: DNA Protein Interactions
Ascent of Genetics

Week 7 Chapter 10: Eukaryotic Transcription
Topics in Genomics

Week 8 Chapter 11: Eukaryotic General Transcription Factors
Topics in Genomics

Week 9 Chapter 12: Eukaryotic Transcription Activators
Chapter 13: Chromatin Structure

**PRESENTATIONS (don't forget you will need to sign up)
Presentations will go from Week 9 to Week 13 as needed.**

Week 10 Topics in Genomics

EXAM 2 Mar 22

Week 11 Chapter 14: Posttranslational modifications
RNA processing I, RNA splicing, Introns, Exons

Week 12 Chapter 15: RNA processing II
CAP, Polyadenylation

Week 13 Chapter 17: Translation
Elongation, Termination

Chapter 18: Translation
Ribosome

PRESENTATIONS

Week 14 Chapter 20: DNA replication I:
Mechanism, Enzymology, Mutation, and Repair

Chapter 21: DNA replication II
Detailed mechanism, Termination

Week 15 Epigenetics

EXAM 3 April 24

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