

GENETICS BIOL 305

Fall 2015

IMPORTANT DATES

8/27	Last day to Drop/Add
9/23	TEST 1
10/18	1 st Wiki definition is due
10/19-10/20	Fall break
10/23	Midterm grades available
10/26	TEST 2
10/29	Last day for W
11/24	Genetic disease project due
11/25-11/27	THANKSGIVING
12/7	Last day of class
12/14	TEST 3 (FINAL time)

COVERED TOPICS and book chapters

The book chapter and pages indicated are for the 5th edition. Let me know if you need info for edition 4

Module 1: Chromosome structure Chapter 11 section on centromere and telomere

Module 2: Meiosis and cell division Chapter 2

Module 3: Basic genetic transmission pattern (monogenic inheritance) Chapter 3, except 3-4

Segregation of alleles

Linkage versus independent assortment

Probability

Module 4: Sex linkage and pedigree Chapter 4, except 4-3 and Chapter 6

Module 5: Macromolecules structure and molecular processes Chapters 10 , 14, and section 15-3

DNA and RNA structure

Protein structure and function

Central dogma

Module 6: What is a gene? Chapter 13 and 17 sections 1 and 3

Gene types and structure

Basic transcription review

Module 7: Simple mutations Chapter 15 sections 1 and 2, Chapter 18 sections 1 and 2

Genetic code and translation

Mutation types

Effects on protein structure/function

Effects on phenotype

Module 8: DNA polymorphisms Some parts of chapter 19

Types of polymorphisms

Methods for detection

Module 9: Dominance revisited chapter 3 section 4

Partial and codominance

Allelic series

Lethal alleles

Module 10: Oligogenetic inheritance and gene interactions Chapter 5

Genes as phenotypic determinants

Epistasis

Modifier genes

Penetrance and expressivity

Suppressors and enhancers

Module 11: Population genetic Chapter 25

Module 12: Complex traits and quantitative genetics Chapter 24

Module 13: Chromosome mutations and transposable elements Chapter 8 and 18 section 4

Module 14: Traditional gene mapping Chapter 7

Deletion analysis

Complementation

Recombination mapping

Module 15: Genome-based gene mapping parts of Chapter 20

FISH

Homology and synteny

Pedigree mapping and haplotypes

Association studies

