LEARNING OBJECTIVES FOR GENETICS
Exam III

Chapter 9: Molecular Structure of DNA and Chromosomes
- Comprehend the properties of the genetic material.
- Examine the experimental evidence for DNA as the genetic material.
- Relate the structure of DNA to its function.
- Define chromatin and explain the arrangement of DNA and protein in eukaryotic chromosomes.
- Understand the various kinds of DNA sequences in eukaryotic genomes and their functions.

Chapter 10: DNA Replication
- Investigate the way that DNA replicates.
- Appreciate the numerous proteins involved in DNA replication and understand their functions.
- Understand the complexities of eukaryotic chromosome replication.
- Outline DNA sequencing and the polymerase chain reaction (PCR). (see Chapter 15)

Chapter 11: Transcription and RNA Processing
- Understand the structural organization of genes, especially the promoter and its function.
- Consider the events and proteins involved in transcription.
- Understand RNA processing in eukaryotes and its significance.

Chapter 12: Translation and the Genetic Code
- Understand basic protein structure and function.
- Know the basic features of the genetic code [Table 12.1]
- Learn the cellular components necessary to translate mRNA.

Chapter 19: Regulation of Gene Expression in Eukaryotes
- Appreciate the importance of control of gene expression in multicellular organisms.
- Know the different levels at which gene expression is controlled in eukaryotes.
- Understand selected examples of how gene expression is controlled in eukaryotes.

Reading and Problem Assignments for
Principles of Genetics, 6th edition, Snustad & Simmons

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Be sure to review and understand the “Basic Exercises” and “Testing Your Knowledge” sections at the end of each chapter.

(See the STUDENT COMPANION SITE at www.wiley.com/college/snustad for additional useful resources and information)