**BI-102 Learning Objectives – Chapter 14: DNA: The Genetic Material**

**Fall '08**

1. Be able to name and briefly describe the nucleotides subunits and how they are connected to form a nucleotide (see Figure 3.13 – yes this is the correct number) and how nucleotides are connected to form DNA and RNA.
2. Be able to state which nitrogenous bases pair in DNA and RNA (giving the single letter description is sufficient).
3. Be able to describe the typical 3-dimensional structure of cellular DNA.
4. Be able to explain what *semi-conservative replication* means.
5. Be able to name and describe the function of any 3 important enzymes involved in replication.
6. Be able to explain what *Okazaki fragments* are and why they form.
7. Be able to name and describe each of the three stages of DNA replication.
8. Be able to describe any 2 of the 3 major differences between prokaryotic and eukaryotic replication.
9. Be able to explain what telomeres are, what their function is and what the role of telomerase is.
10. Be able to name and describe a specific DNA repair mechanism.