

Reading Assignment for DNA, Chromosomes and Replication Lecture:

MBOC 5<sup>th</sup> ed.

Chapter 4 – DNA and Chromosomes

<u>Pages</u>	<u>Sections</u>
195-210	<p>Introduction</p> <p>The structure and function of DNA.</p> <p>A DNA molecule consists of two complimentary chains of nucleotides.</p> <p>The structure of DNA provides a mechanism for heredity.</p> <p>In Eukaryotes DNA is enclosed in a cell nucleus.</p> <p>Chromosomal DNA and its packaging in the chromatin fiber.</p> <p>Eukaryotic DNA is packaged into a set of chromosomes.</p> <p>Chromosomes contain long strings of genes.</p> <p>Each DNA molecule that forms a linear chromosome must contain a centromere, two telomeres and replication origins.</p>

Chapter 5 – DNA Replication

<u>Pages</u>	<u>Sections</u>
266-284	<p>DNA replication mechanisms.</p> <p>Base pairing underlies DNA replication and DNA repair.</p> <p>The DNA replication fork is asymmetrical.</p> <p>A special nucleotide polymerizing enzyme synthesizes short RNA primer molecules on the lagging strand.</p> <p>Special proteins help to open up the DNA double helix in front of the replication fork.</p> <p>A sliding ring holds a moving DNA polymerase onto the DNA.</p> <p>The proteins at a replication fork cooperate to form a replication machine.</p> <p>DNA topoisomerases prevent DNA tangling during replication.</p> <p>DNA replication is similar in eukaryotes and bacteria.</p> <p>The initiation and completion of DNA replication in chromosomes.</p> <p>DNA synthesis begins at replication origins.</p> <p>Bacterial chromosomes have a single origin of DNA replication.</p> <p>Eukaryotic chromosomes contain multiple origins of replication</p>