Grace Christian School

**ADVANCED BIOLOGY**

**Syllabus**

**GRADE:** 12 **DATE:** August 2020

**BASIC TEXT:**

**Required Textbook:** Mader & Windelspecth. ***Inquiry into Life*. 14th ed.** Dubuque, IA: McGraw-Hill Higher Education, 2014. ISBN: 978-0-07-352552-5

**no required Lab Manual: (BRCC Bio 101 lab handouts)**

**OVERVIEW:** Focuses on foundations in cellular structure, metabolism, and genetics in an evolutionary context. Explores the core concepts of evolution; structure and function; information flow, storage, and exchange; pathways and transformations of energy and matter; and systems biology. Emphasizes process of science, interdisciplinary approach, and relevance of biology to society.

**MAJOR TOPICS & SKILLS:**

FIRST QUARTER

1. Biology & Molecules

2. Cell Structure & Function

3. Membrane Structure & Function

*Paper on film for class on Evolution*

SECOND QUARTER

1. Cell Division

2. Patterns of Inheritance

3. Chromosomes

4. DNA & Biotech

*Worksheets on film for class #4*

THIRD QUARTER

1. Evolution

2. Metabolism: Energy & Enzymes

3. Cellular Respiration & Photosynthesis

4. Microbiology

5. Lymphatic & Immune Systems

*Worksheets on film for class on #5*

*Student Oral Reports on Evolution*

FOURTH QUARTER

1. Plant Anatomy & Reproduction

2. Vertebrate & Invertebrate Anatomy

3. Human Anatomy

4. Population, Community, Ecosystem

*Lab Dissection and Lab Practicum*