**Plainview High School**

TCB Tutorials:

Tuesdays and Thursdays

All others by appointment only.

**AP Biology**

**Amanda Martin, amanda.martin@plainviewisd.org**

***Campbell Biology,* 9th Edition, 2011**

**Course Overview**

This AP Biology course is designed to offer students a solid foundation in introductory college-level biology. By structuring the course around the Four Big Ideas, Enduring Understandings, and Science Practices (see back) I assist students in developing an appreciation for the study of life and help them identify and understand unifying principles within a diversified biological world.

What we know today about biology is a result of inquiry. Science is a way of knowing. Therefore, the process of inquiry in science and developing critical thainking skills is the most important part of this course. This course has been structured to go much deeper than memorization of content—reasoning through failures and unexpected results is the core of AP Biology.

At the end of the course, students will have an awareness of the integration of other sciences in the study of biology, understand how the species to which we belong is similar to, yet different from, other species, and be knowledgeable and responsible citizens in understanding biological issues that could potentially impact their lives.

**Grading Policy**

|  |  |
| --- | --- |
| 40% | Tests |
| 20% | Labs |
| 20% | Quizzes |
| 20% | Class work/Homework |

**Scope and Sequence\***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Unit** | **Topic** | **Dates** | **Book Chapters** | **Big Ideas** |
| 1 | Introduction to Science/AP Biology | Aug 17 – Aug 25 | 1, 2, 3 | 1, 2 |
| 2 | Biochemistry and Intro to Cells | Aug 28 – Sept 15 | 4, 5, 6, 7 | 1, 2, 3, 4 |
| 3 | Cellular Energy and Related Processes | Sept 18 – Oct 13 | 8, 9, 10 | 1, 2, 4 |
| 4 | Cell Communication and the Cell Cycle | Oct 16 – Oct 31 | 11, 12 | 1, 2, 3 |
| 5 | Genetic Basis of Life | Nov 1 – Nov 15 | 13, 14, 15 | 1, 3, 4 |
| 6 | Gene Activity and Biotechnology | Nov 16 – Dec 15 | 16, 17, 18, 19, 20, 21 | 1, 2, 3, 4 |
| ***FIRST PRACTICE EXAM – December 18 – 20 (In-class)*** | | | | |
| 7 | Evolution and Phylogeny | Jan 9 – Feb 13 | 22, 23, 24, 25, 26, 27 | 1, 3, 4 |
| 8 | Diversity in the Biological World | Feb 14 – Mar 29 | 40, 43, 48, 49 | 1, 2, 3, 4 |
| 9 | Ecology | Apr 2 – May 3 | 51, 52, 52, 54, 55, 56 | 1, 2, 3, 4 |
| ***SECOND PRACTICE EXAM – SATURDAY, May 5*** | | | | |
| Go over practice test, review for *real* test May 7 - 11 | | | | |
| ***AP Biology Test: May 14, 2018 – 8:00 AM*** | | | | |

\*All dates are subject to change. This schedule has been laid out to enhance communication between teacher/student.

**THE BIG IDEAS:**

**Big idea 1**: The process of evolution drives the diversity and unity of life.

**Big idea 2:** Biological systems utilize free energy and molecular building blocks to grow, to reproduce and to maintain dynamic homeostasis.

**Big idea 3:** Living systems store, retrieve, transmit and respond to information essential to life processes.

**Big idea 4:** Biological systems interact, and these systems and their interactions possess complex properties

**The Investigative Laboratory Component**

The course is also structured around inquiry in the lab and the use of the seven science practices throughout the course.

Students are given the opportunity to engage in student-directed laboratory investigations throughout the course for a minimum of 25% of instructional time. **[CR7]**  Students will conduct a minimum of eight inquiry-based investigations (two per big idea throughout the course). **[CR6]** Additional labs will be conducted to deepen students’ conceptual understanding and to reinforce the application of science practices within a hands-on, discovery based environment. All levels of inquiry will be used and all seven science practice skills will be used by students on a regular basis in formal labs as well as activities outside of the lab experience. The course will provide opportunities for students to develop, record, and communicate the results of their laboratory investigations.

**Science Practices (SP)**

1. The student can use representations and models to communicate scientific phenomena and solve scientific problems.

2. The student can use mathematics appropriately.

1. The student can engage in scientific questioning to extend thinking or to guide investigations within the context of the AP course.
2. The student can plan and implement data collection strategies appropriate to a particular scientific question.
3. The student can perform data analysis and evaluation of evidence.
4. The student can work with scientific explanations and theories.
5. The student is able to connect and relate knowledge across various scales, concepts and representations in and across domains.

**About The Exam…**

The exam is 3 hours long and has two sections — multiple choice/grid-in, and free-response. You are allowed to use a four-function calculator (with square root) throughout the exam.

**Section I:** Multiple Choice | 69 Questions | 1 hour and 30 minutes | 50% of Exam Score

**Section II:**Free-response | 8 Questions | 1 hour and 30 minutes (includes a 10-minute reading period) | 50% of Exam Score

* **Long Free-response** (2 questions, one of which is lab or data-based)
* **Short Free-response**(6 questions, each requiring a paragraph-length argument/response)