**Dr. A Castro - Science Teacher**

**Hope High School**

Tutoring hours on Thursdays from 3 to 4 pm

Classroom 320.

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**Biology Syllabus for Semester Classes:** 2021-2022 academic school year.

**Textbook: *Biology* by Miller and Levine /Pearson Prentice Hall**

**Course Description:** Biology is devoted to the study of living things and their processes. Throughout the year this course provides an opportunity for students to develop scientific process skills, laboratory techniques, and an understanding of the fundamental principles of living organisms. Students will explore biological science as a process, cell structure and function, genetics and heredity, evolution and classification, diversity of living organisms and their ecological roles, and an introduction to animal structure and function. Projects and reading assignments may be required with each unit of instruction.

**Keys for Success in Biology:**

1. Have a positive attitude!
2. I am here to help you succeed, so feel free to ask me for help. I am available before and after school in my room.
3. Ask lots of questions. If you are unclear about something from the textbook, lab, or from discussion, **ASK**.
4. Make sure that you understand how the lecture, homework, and labs interrelate. Labs and homework are designed to reinforce significant ideas from the text. Make sure that you see these connections.
5. Start studying for tests early. By studying and reviewing each night you are not only helping to prepare for the test more effectively, you are also more prepared for class each day and any quizzes that may be given.

**Additional Information**: My web page DrCastro.weebly.com. The students can see more web resources in the website. The syllabus is posted on the website and the web page will be dynamically updated.

**Classroom procedures course policies**

* Come to class every day, enter class quickly and quietly.
* Be on time, punctuality is essential to doing well in this course.
* Behave in a respectful manner that does not cause problems for anyone.
* As soon as you are seated write the learning objectives and then begin your DO NOW, which will be written on the smart board. You have five minutes to complete the DO NOW.
* You may use the bathroom between classes; if you have an emergency you must completely fill out the hall pass sheet, which includes your name, date, time and destination.
* Keep a binder for all your homework, tests, DO NOWS, hands outs, projects, writing assignments, group work.
* When you are absent or late, it is your responsibility to get the notes or missed work on your time. After every 3 absences a phone call will be made. Late work is never accepted without an excused absence.
* Cutting classes will be penalized as one detention after school for each cut.
* Do not eat or drink in class ever. Only water is allowed. Follow the safety regulations during laboratory activities or procedures.
* No electronic devices in class, no hats, no coats.
* There is no talking during a test or quiz even if you are finished. A respectful volume should be maintained in the classroom at all the time. Every student deserves to have the best possible testing conditions; any disrespectful behavior will negatively impact your grade.

**Required Resources**.

Safety glasses are required for all laboratory activities, a notebook, flash drive, pen or pencil, computers (lab tops) and textbooks will be provided by teacher during classroom time.

**Grading Policy and Procedures**.

**Your work in this class will be assessed in the following ways:**

1. Class Work Assignments and Participation (30%)

Each day you will earn class participation points for work completed in class, successful group participation, on-time completion of homework, quizzes, discussion, focus and appropriate behavior. Absences, sleeping, lateness, unpreparedness, lack of focus and lack of respectful behavior will result in loss of credit. Asking good questions and volunteering may earn extra class participation points.

Bring in documentation for excused absences – notes stamped by the attendance office will restore your lost class participation points– this helps your grade. Note: All work must still be made up.

2. Daily Agenda and Homework (10%)

3. Tests and quizzes (30%)

The key elements of critical and scientific thinking are asking questions and making observations. Expect homework every week, occasional quizzes, and be prepared to hand in all assignments to be graded. Tests will assess class work after completing every unit. You will be asked to answer questions that should be found in class notes and completed assignments. You may also be asked to turn in randomly selected samples of your work from the period between tests. Failure to immediately make up work you have missed will result in poor scores on tests. If you haven’t done it, you can’t use it. You may use only your own work for Open Notes Tests.

3. Projects and Lab Activities (30%).

Major projects will comprise an important part of the assessment for this course. Treat them like important tests – failure to complete or hand in major projects may result in failing this class. Project products may include: class presentations, research papers, Lab notes, Lab reports, Prezi or PowerPoint presentations.

**Course Schedule / General Course Outline/ Assignment Descriptions**.

**UNIT 1: The Nature of Life**

**Chapter 1: The Science of Biology**

**Key Questions Include:**

What are the goals of science?

What procedures are at the core of scientific methodology?

What scientific attitudes help generate new ideas?

Why is peer review important?

What is a scientific theory?

What is the relationship between science & society?

What characteristics do all living things share?

What are the central themes of Biology?

How do the fields of biology differ in their approach?

How is the metric system important in science?

**Objectives  
1.1 What Is Science?   
1.1.1 State the goals of science.  
1.1.2 Describe the steps used in scientific methodology.  
  
1.2 Science in Context  
1.2.1 Explain how scientific attitudes generate new ideas.  
1.2.2 Describe the importance of peer review.  
1.2.3 Explain what a scientific theory is.  
1.2.4 Explain the relationship between science and society.**

**1.3 Studying Life  
1.3.1 List the characteristics of living things.  
1.3.2 Identify the central themes of biology.  
1.3.3 Explain how life can be studied at different levels.  
1.3.4 Discuss the importance of a universal system of measurement.**

**Chapter 2: The Chemistry of Life**

**Key Questions Include:**

What three subatomic particles make up atoms?

How are all of the isotopes of an element similar?

In what ways do compounds differ from their component elements?

What are the main types of chemical bonds?

How does the structure of water contribute to its unique properties?

Why is it important for cells to buffer solutions against rapid changes in pH?

What elements does carbon bond with to make up life's molecules?

What are the functions of each of the four groups of macromolecules?

How do energy changes affect whether a chemical reaction will occur?

What role do enzymes play in living things and what affects their function?

**UNIT 2: Ecology**

**Chapter 3: The Biosphere**

**Chapter 4: Ecosystems and Communities**

**Chapter 5: Populations**

**Chapter 6: Humans in the Biosphere**

**UNIT 3: Cells**

**Chapter 7: Cell Structure and Function**

**Chapter 8: Photosynthesis**

**Chapter 9: Cellular Respiration**

**Chapter 10: Cell Growth and Division**

**UNIT 4: Genetics**

**Chapter 11: Introduction to Genetics**

**Chapter 12: DNA**

**Chapter 13: RNA & Protein Synthesis**

**Chapter 14: Human Genome**

**Chapter 15: Genetic Engineering**