AP Biology - About The Class **Mr. Zimny**

Course Description

AP Biology is an introductory year long college-level biology course. Students cultivate their understanding of biology through inquiry-based investigations as they explore the following topics: evolution, cellular processes — energy and communication, genetics, information transfer, ecology, and interactions. This course follows the College Board Advanced Placement syllabus and students must take the national college board exam in May.
Successfully passing the AP Biology Exam is meant to take the place of two 4 credit college level lab science general biology classes. It is typically recommended to college students that they spend 6 hours a week in the classroom/ laboratory and an additional 6 to 9 hours outside of class studying per week for each of these two classes. Prerequisites for this class are an (A) Average in General Biology & an (A or B) average in General Chemistry

Big Ideas

The AP Biology curriculum framework is divided into broad groups of concept that run throughout most of biology called Big Ideas; they are supported by additional themes and concepts as articulated in the learning objectives.

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.

Science Practices

The AP Biology Exam also asks students to develop and use certain scientific practices in the effort to model actual, genuine scientific research. The exam asks students to establish lines of evidence and use them to develop and refine testable explanations and predictions of natural phenomena. Focusing on these disciplinary practices enables teachers to use the principles of scientific inquiry to promote a more engaging and rigorous experience for AP Biology students. The 7 science practices are:

- Use representations and models to communicate scientific phenomena and solve scientific problems;
- Use mathematics appropriately;
- Engage in scientific questioning to extend thinking or to guide investigations within the context of the AP course;
- Plan and implement data collection strategies in relation to a particular scientific question;
- Perform data analysis and evaluation of evidence;
- Work with scientific explanations and theories; and

• Connect and relate knowledge across various scales, concepts, and representations in and across domains.

Laboratory

It is strongly recommended that the course be taught using an inquiry model, allow students to take ownership over their learning. It is also recommended that approximately 25% of the time spent in class be spent performing labs. The following labs will be attempted should ample enough time be permitted:

Lab 1: Artificial Selection
Lab 2: Mathematical Modeling: Hardy-Weinberg
Lab 3: Comparative Evolution: DNA BLAST
Lab 4: Diffusion & Osmosis
Lab 5: Photosynthesis
Lab 6: Cellular Respiration
Lab 7: Cell Division: Mitosis & Meiosis
Lab 8: Biotechnology: Bacterial Transformation
Lab 9: Biotechnology: Restriction Enzyme Analysis of DNA
Lab 10: Energy Dynamics
Lab 11: Transpiration
Lab 12: Animal Behavior
Lab 13: Enzyme Activity

In summary, these labs allow students to show their mastery of laboratory skills and knowledge. Frequently questions from the AP Exam mirror the activities performed in these labs. Additional activities and labs may also supplement this list.

AP Biology Examination

The AP Biology Examination is 3 hours in length and is designed to measure a student's knowledge and understanding of modern biology, as well as critical reasoning skills.The exam consists of two main sections: a 90 minute, 69 question multiple choice section, worth 50% of the exam score and a 8 question free response section, worth the other 50% of the exam score. The multiple choice section consists of 63 "true" multiple choice questions and 6 grid-in questions. The free response section consists of 2 long free response questions and 6 short free response questions. Students are alloted 1 hour and 30 minutes for each section. The exam was redesigned in approximately 2008. This year's exam will be administered May 11, 2020.

Grading Policy

Grades

As per the school district's policy on grading, the following components make your overall grade Tests/ Quizzes/ Other Assessments 40%

Projects & Labs 30%

Classwork 20%

Homework 10%

Classwork grades will consist of a weekly, holistic grade based upon teacher observations. Class work is a weekly/biweekly grade. It could be a large project like bio eyes packet or a bunch of informal observations. Actions such as copying or not taking notes may result in points off. Lab reports are group assignments and groups should remain intact until the end of a quarter. For AP Biology the 10% of portion of the grade consisting of homework will be merged into the classwork grade meaning there is a 30% component from homework & classwork.

Late Policy

Be aware that students who are absent **must make-up all missing work, including classwork,** unless you have an exemption from the teacher. This provides motivation to be here every day. Please be aware that if you miss an extended period of school (3+ days) you or a family member should contact Mr Zimny and/or the school. **Even if you have a valid and approved reason for missing school for an extended period, expect to have work to make up.** In the event of an extended absence, a student must take responsibility to discuss the situation with me in order to receive find out what they missed. The student will have the same number of day(s) absent to complete the missed assignment(s). For example, if a student missed 2 days of school, he or she would have 2 days to complete the assignment(s) upon his or her arrival back to school. If a student fails to comply with this expectation, he or she will receive a zero for that assignment. Quizzes must be made up within 1 week of the absence or they will turn into a zero.

Late classwork will not be accepted, late projects will be accepted up to one week after its due date. After one week late any work not turned in will be graded as a zero. Any work handed in late is only eligible for partial credit on a case by case basis, typically late work is only eligible for half credit of whatever grade it would normally receive. A verbal extension on some work may be granted. Please note that such an extension might be until "first thing the next day." Please note that this means by the end of Advisory the following school day.

Academic Integrity Policy

The school has an established policy on Academic Integrity. A copy of it can be provided at your request. Please know that submitting someone else's work as your own and fabricating data count as violations of the school's Academic Integrity Policy in addition to cheating. Additionally during all formal exams cell phones will be collected at the beginning of the period and returned at the end of the period. Any actions deemed in violation of the spirit of the academic integrity policy will be referred to the Dean and may result in potential disciplinary and academic consequences.The academic integrity policy extends to all members of a group for group work. So for example if a member of group hands in plagiarized work for their portion of the group project or report all members of the group are subject to potential consequences.

Materials
Please purchase or have the following items:
A binder or notebook & folder for classwork (I prefer a binder over the notebook & folder option, but you are Seniors so you should know what works best for you)
A writing utensil (A daily expectation)
Lab notebook with carbon copy pages
Barron's AP Biology 6th Edition Test Prep Guide*

*=this is technically optional, but highly recommended

Class Expectations

In my class, I have 4 simple rules. They are:

1. *Be professional*- be on time: present physically and mentally; show up: be prepared, have all materials required for the day with you when you arrive; look the part: be in proper dress code; act the part: be ready to participate and learn, come to class with a positive attitude and abide by the rules in the student handbook
2. *Be Humble*- you will be happier, more well received by others and more successful long term. It is a privilege to go to this school behave as such. 3. *Treat others as you would want to be treated* - treat others with respect at all times in this classroom, anything less will not be tolerated; do not interfere with others' education, an education is a sacred thing and no one has the right to take away from another's right to one; cooperate with others, leave your ego at the door, it will make everyone's lives easier; respect other adults, other staff, faculty and guests were students once too; and lastly respect your peers.
4. *Work hard/ Try your best*- no one can ask anything else of you if are giving your best effort

AP Biology is a rigorous course. The science is challenging, and the exploration is frequent. We will function as a community of learners. If you are committed to the work, as well as to listening and learning from one another, this class will ultimately become one in which we are all teachers and students. Each member of the class will have a voice. We will learn from one another, read findings out loud, work collaboratively on research and assignments, and share our thoughts and ideas. Recognize that learning is a lifelong experience and maintain a positive attitude. Believe in your own potential and the potential of your classmates. Always think critically, NOT negatively.

The purpose of the class expectations is to create a positive and safe learning environment for each and every student. This will allow everyone to achieve at his or her highest level. Each student is expected to treat his or her classmates the same way they would like to be treated. No insults, put-downs, or teasing will be tolerated. Students are expected to take education seriously. Knowledge is something no one can ever take from you and you can carry with you wherever you go. All students are capable of succeeding in this classroom if they are dedicated to doing so.