|  |  |
| --- | --- |
|  | *Fairfield Ludlowe High School - Fairfield Warde High School* **ADVANCED PLACEMENT BIOLOGY**  |
| Dr. Ryan Kelly | 347 |
| Full Year | Insert Period |
| rkelly@fairfieldschools.org |
| COURSE DESCRIPTION |
| The Advanced Placement Biology course is a college-level laboratory course. The course focuses on helping students gain enduring understandings of biological concepts and the scientific evidence that supports them through a “student directed” approach. The key concepts and related content that define the AP Biology course and exam are organized around four underlying principles called the *big ideas*, which are as follows: evolution, cellular processes: energy and communication, genetics and information transfer, and interactions.  A student-directed, inquiry-based lab experience supports the AP Biology curricular requirements by providing opportunities for students to design plans for experiments, data collection, application of mathematical routines, and refinement of testable explanations and predictions. Such a lab experience reinforces the curriculum’s focus on quantitative skills.   |
| COURSE OBJECTIVES |
| Students will understand that:* the fundamental life processes of plants and animals depend on a variety of chemical reactions that occur in specialized areas of the organism’s cells.
* mutation and sexual reproduction lead to genetic variation in a population.
* a multi-cellular organism develops from a single zygote, and its phenotype depends on its genotype, which is established at fertilization.
* genes are a set of instructions encoded in the DNA sequence of each organism that specify the sequence of amino acids in proteins characteristic of that organism.
* the genetic composition of cells can be altered by incorporation of exogenous DNA into the cells.
* the frequency of an allele in a gene pool of a population depends on many factors and may be stable or unstable over time Evolution is the result of genetic changes that occur in constantly changing environments.
* as a result of the coordinated structures and functions of organ systems, the internal environment of the human body remains relatively stable (homeostatic) despite changes in the outside environment.
* organisms have a variety of mechanisms to combat disease.
* stability in an ecosystem is a balance between competing effects.
 |
| UNITS OF STUDY |
| * Introduction and Biological Themes
* Biological Chemistry
* Cells
* Cellular Energetics
* Heredity
* Molecular Genetics
* Evolution
* Diversity of Organisms
* Structure and Function of Plants and Animals
* Ecology
* Independent Project
 |
| COURSE POLICIES AND REQUIREMENTS |
|  GRADING |
|  | Summative Assessments: | 100%66% Tests; 34% Labs and projects |
|  | Formative Assessments: |  0% |
|  | Behavioral Characteristics: |  0% |
|  |  SEMESTER GRADE FINAL GRADEMarking Period 1 = 40% Each Marking Period 20% each = 80%Marking Period 2 = 40% Midterm Exam = 10%Midterm Exam = 20% Final Exam = 10%A midterm exam will be administered during the scheduled exam time. A final exam will be administered prior to the College Board AP Exam (end of April). Both exams will be mock AP Biology exams; covering one semester of material. You will be assessed through multiple choice, grid-in, and free response questions. |
|  MATERIALS |
|  | \* A notebook dedicated to this course.\* A folder or 3-ring binder dedicated to this course to keep hand-outs, assignments, etc.\* A separate one subject notebook that you will bring to class as a lab notebook.\* Recommended: purchase an AP Biology review book (such as Barrons) to help review for unit tests and the AP test.\* There is also a study guide that accompanies our textbook that can be purchased. It is called "Study Guide to accompany Life: The Science of Biology" ninth edition. I have some copies available in class that you can look at and decide if you want it.\* The textbook is also available for purchase as an e-book online at ebooks.bfwpub.com/life9e |
|  EXPECTATIONS OF STUDENTS |
|  | • Class attendence is very important. We cover large amounts of material in short periods of time. If you are absent it is your responsibility to make up the work. • Students are expected to spend at least 40 min. a night reading and taking notes on the textbook.• Prepare for lab activities by reading any lab introduction and procedures given ahead of time. |
|  EXTRA HELP |
|  |  I am available for make-up work and extra help after school. Use the sign-up sheet. Please sign up! I'm here to help. I want you to succeed!  |
| - |