

Monte Vista Christian School
SCIE 1530 Biology Honors
Course Syllabus

Course Description:

Biology Honors explores the diversity, complexity and interconnectedness of God's design in creation. The unifying themes are detailed studies of basic cellular structures and processes in living organisms, as well as investigations of plants and animals and their relationship to the environment. Extensive laboratory and fieldwork is required. Consideration is given to ecology, evolutionary theory, biodiversity, cell biology, and genetics.

Course Objectives:

At the conclusion of the course, students will be able to:

- Examine and evaluate the scientific and biblical worldviews.
- Understand the limitations of science.
- Utilize scientific methodology, such as observation of natural phenomena, formulation of hypotheses, experimentation, and data analysis.
- Safely operate a compound microscope through laboratory exercises.
- Understand the characteristics and the basic needs of living organisms.
- Identify resources available in an ecosystem and describe biotic and abiotic environmental factors that support it.
- Recognize the diversity of adaptations by plants and animals in varied environments.
- Illustrate the flow of energy and matter through an ecosystem from sunlight to food chains and food webs.
- Explain the basic premise of Darwinian evolutionary theory that species evolved by a random, gradual process of natural selection.
- Distinguish between Darwinian evolutionary theory and Intelligent Design theories.
- Establish a fundamental understanding of the chemical basis of life, including the energetics of respiration and photosynthesis.
- Describe basic cell structure, function, reproduction and protein synthesis.
- Realize the impact of genetic discoveries, and recognize social and ethical questions.
- Recognize and classify living organisms according to their external characteristics.
- Compare the structures and functions of living organisms in a lab setting.
- Develop dissecting skills through the use of preserved specimens.

Texts:

Course material will be provided by your instructor and available in the classroom.

Prerequisite: None

Course Outline:

Unit 1 Investigation and Experimentation

Unit 2 Chemical Basis of Life

Unit 3 The Cell

Unit 4 Photosynthesis and Respiration

Unit 5 Mitosis and Meiosis

Unit 6 Mendelian Genetics

Unit 7 Molecular Genetics

Unit 8 Evolution and Creationism

Unit 9 Ecology

Unit 10 Diversity of Life: Plants

Unit 11 Diversity of life: Animals

Unit 12 Human Physiology

Grading

| <u>Grade Book Categories</u> | | <u>Semester Weighted Configuration</u> | |
|------------------------------|-----|--|-----|
| Assessments | 60% | Quarter | 40% |
| Homework/Lab Assignments | 40% | Quarter | 40% |
| | | Semester Final Exam | 20% |

Category Explanation:

- Assessments – 60%
 - This category include all unit tests. Any projects, laboratory write up may be included in this category according to teacher discretion. Students may view the exact category online on FOCUS.
- Assignments – 40%
 - This category include all daily homework. Any projects, laboratory write up may be included in this category according to teacher discretion. Students may view the exact category online on FOCUS.

Content work expectation:

Students are expected to spend about 4-5 hours a week working on anything related to this class. This might include working on homework, reading the textbook, creating flashcards, and studying for tests.

High School Standard Grading Policy:

Please refer to the policy and procedures posted online in our Parent-Student Handbook.

Class Policies:

The following class policies are non-negotiable. Please see the instructor if you have any concerns with your ability to follow these policies.

1. Respect your peers, teachers, and school property to create an enjoyable and learning environment.
2. Do your own creative work.
3. Stay focused on your creative work.
4. Come to class prepared, on time and excited to learn.

Classroom Expectations:

Students are expected to follow these rules:

1. Be seated at the beginning of class.
2. Raise your hands first and wait until called upon before speaking.
3. Use the bathroom before class starts.
4. Turn in any homework at the beginning of class.

School Policies and Expected Student Learning Results (ESLRs):

Students are subject to all academic policies of the school as found in the Parent-Student Handbook. Furthermore, it is each student's responsibility to read and follow all academic policies of Monte Vista Christian School. In addition to addressing each ESLR every year, we target a specific ESLR each academic year for particular focus.

Tips for the Students:

Attendance and Tardies:

It is important that you be in class. Your participation is valued. Nothing can take the place of being in class, hearing the lectures, seeing the demonstrations and videos, doing the laboratory experiments and interacting with your classmates. If it is necessary for you to be absent from class, it is your responsibility to get the notes from a reliable classmate. You will be held responsible for everything that went on in class. You will also need to pick up or access handouts that were given out. Follow your chapter outline and do the assigned reading and homework. Unexcused absences are reported to the office and will affect your grade.

Make Up Work:

Make-up work is only accepted from students who have excused illness absences. Being gone from class due to school activities, planned appointments or family vacations, requires your work (homework, make-up labs, and / or exams) to be turned in **before** your absence. If you do not turn in your work on or before the due date, you will receive a 0% for the work.

Lab Safety Policy:

The following regulations have been set forth by the State of California. The law requires the class instructor to remove from the lab any person who is not following the regulations. If a student is asked to “sit out” of the lab, because of disregard to the safety of themselves or others, it will affect their grade for that lab. The best that student can do is a makeup lab. This make-up lab is due the same time all the other students are to have their lab reports in. No extra time is given. Follow your chapter outline to know when labs are scheduled, then prepare carefully for your lab. There will also be several outdoor laboratory activities. If you are allergic to certain plants, please let the instructor know.

Tests:

If you are in class on exam day, you are expected to be ready to take the exam. Missing the review session is no excuse. If you are absent on exam day, the day you return to class you must take the make-up exam. Exam dates are announced at least one week in advance, so students can plan their schedules accordingly. If a student has been gone from school for several days due to illness, they should make arrangements with the teacher 24 hours before the posted test date.

Road to success:

To be successful in this class, try following these advice:

1. Do not be distracted during class
2. Spend time daily memorizing any vocabulary and then move on to any concepts.
3. Do not wait the night before to study for tests. Preparing a week in advance is normal.
4. Seek academic assistance if you need any, which can be as easy as emailing your teacher.