

Syllabus: Freshman Biology



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Office Hours

Tuesday – Friday after regular classes

St. Mary's College High School

• Freshman Biology Syllabus

Course Description:

This laboratory science course is a survey course in biology that provide students an academic and experiential understand their relationship to and impact on the “living world” around them. This course covers all the fundamental aspects of plants and animals. biology. We begin with a brief survey of the life sciences, scientific method, and the chemistry of life. We sample habitats from the poles to the equator before focusing on the relationships between plants, animals, and the planet.

Next we study the cell life's basic unit we structure structure, function and reproduction for plants and animals.

And that's just the first semester! I failed to mention our trips out in field study during the Freshman experience. In the second semester the pace quickens and meiosis and genetics start us off. We complete a detailed study of the of animals touching on classification, and evolutionary progress over geologic time. We end animals with a survey of body systems before we embark on a two part survey of plants. The year will end with a focus on man, human systems, how they work and effect our bodies and lives.

Students who achieve constantly at a high level will be encouraged to take the SAT II in Biology. Some some sessions will occur prior to the test.

Materials:

Textbook: *Pr-entice Hall BIOLOGY*; Miller/Levine, 2006 edition
 (ISBN: 0-013-166255-4)student edition)

Composition Notebook Marble hard cover composition book (from Mr. Davis \$2)

Internet Access at-home is recommended

3-ring Binder with lined paper or spiral notebook

Pen or pencil

Red pen for corrections

Scientific Calculator

USB storage device

Website:

<http://homepage.mac.com/colbertiii/>

Bookmark this website on your computer. If you forget an assignment from class or lab, this website will provide regular information, useful web links and some pdf's you can print and complete.

Appointment and Telephone Procedures:

Parents and students may use my teacher voice mail box at extension x213 or you may contact me by email at : cdavis@stmchs.org.

• Enduring Understandings

Ecology:

Students understand and appreciate that no organisms, including humans, exist in isolation.

Chemistry and Cells:

Student understands and appreciates that the fundamental life processes of plants and animals depend on a variety of chemical reactions and that occur in specialized areas of the organism's cells.

Students should appreciate the reversible nature of chemical reactions and that the product of one reaction can be the reactant of another. Hence cycles in nature.

Cell Growth and Division:

The student understands the reasons for cell division: multiplication and reproduction and can explain the similarities and differences in these processes. Students understand how cells divide and the stages of this process.

Genetics:

Student understands and appreciates the patterns of diversity of living forms and its relationship to patterns in nucleic acids sequences.

Evolution:

Student understands and appreciate the diversity of species that we see today are a continuing product of selection pressures on genetic variation.

Diversity of Life:

Students will be able to organize and classify the diversity of life using at least two popular systems.

Physiology:

The student will be familiar a the systemic approach to the organization of living organisms, both plants and animals, and be able to trace system function and appreciate how homeostasis is maintained.

***Note: *Enduring Understandings* are a work in progress and as such will be refined and improved through the academic year

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• Course Outline

SEMESTER ONE

- Unit 1 • Introduction • Nature of life • Chemistry
Ch 1 & 2 - Biology & Chemistry
- Unit 2 • Biosphere • Ecology • Communities • Population
Ch. 3, 4, 5, 6 - Ecology, Cycles in Nature, Non living factors, Biomes & Ecosystems, Population, Human impact.
- Unit 3 • Introduction to the Diversity of Life
Ch 18.1 & 18.3 - Classification
- Unit 4 • Cell
Ch 7 - Structure and Function
- Unit 5 • Cellular Energy Cycle
Ch 8 & 9 Photosynthesis & Respiration
- Unit 6- Cell Reproduction
Ch 10 - Cell Growth and Division

SEMESTER TWO

- Unit A • Meiosis • Genetics • DNA • RNA
Ch 11.4,1-3;12.1-4;13.1-3;14.1-2 Meiosis, Genetics,DNA - RNA,Genetic Engineering, the human Genome
- Unit B • Geologic Time • Evolution • Classification
Ch 17, 15, 16, & rest of 18 - Fossils Record • Evolution • Cladistics • Classification [Kingdom vs. Domain] • Other Ideas
- Unit C • Microorganisms • Protista • Fungi
Ch 19, 20, 21 parts - Bacteria, Viruses, Protists, Fungi
- Unit D • Survey of the Animal Kingdom
Selections from Ch 26 - 33 Highlighting Systemic Changes Between Phyla
- Unit E • Plant Survey
Selections from Ch 22 - 24 Plant Diversity, Reproduction, Organs : (roots, stems, & leaves)
- Unit F • The Human Body
Selections from Ch 35 - 40 Systems: Nervous, Skeletal-Muscular, Integumentary, Circulatory, Respiratory, Digestive, Excretory, Endocrine, Reproductive, & Immune

• Grading Elements

Unit Tests (20% of grade):

These will be administered at the conclusion of each learning block and will include concepts covered in class notes, homework, labs, quizzes, and projects. Students are encouraged to engage to spend several time on advanced preparation and study. Students may benefit by working together in study groups to review test material. Tests may include multiple choice, problem solving, and short essay questions. Formulas will be provided - students are expected to understand and manipulate them.

Quizzes (5% of grade):

Quizzes will review material from homework and laboratory. If you have a foreseeable absence on a quiz day, you must inform me and plan an alternate quiz time. If you miss a quiz during an extended illness I will excuse you from taking this quiz.

Assignments (33%) / Class Binder: (0%)

Assignments will fall into one of three categories:

- Practice - 9%
- Organization ... Notebook - 15%
- Practice - 9%

Each assignment must be completed. You must correctly identify, label and number the assignment if you are to receive full credit. You are expected to write the question and show equations with calculations for numerical answers. The assignments must be numbered and dated and begin on a new page. You should expect to spend 35 minutes with homework each night.



Each assignment must be complete. You must correctly identify, label / number the assignment if you are to receive full credit. You are expected to write the question and show equations with calculations for numerical answers. The assignments must be numbered and dated and begin on a new page. You should expect to spend 35 minutes with homework each night.

Reading assignments are expected to be completed before you come to class so that you are able to participate in class discussions and activities. You should bring your book to class whenever you think you might need it as a resource.

Written assignments or class presentation activities are due at the beginning of class on the date due. Assignments will be collected and recorded as turned in, scored and the grade recorded in a computer grade book and returned for study. The teacher will not accept any late assignments without an absence slip excusing the absence and the student will receive a no credit for any missed work.

Students should keep a neat and organized binder with the answer to daily questions, and use it to store handouts, returned homework and class assignments. (keep all your work all year) Your binder may be checked periodically throughout the semester. Your binder is a tool that helps the teacher assess the specific needs of students who require help and maybe collected at the end of either semesters.

Final Exam (12% of grade):

The final exam is comprehensive in its design, covering concepts developed each semester.

Class Notes (15%)

Notes should be taken during every class period in the marble hard cover composition book. Notes include the lecture topics covered during class that day plus any notes from media used for instruction. At the conclusion of note taking students should reflect on the ideas presented and complete a two to three sentence written summary of the days' concepts.

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Laboratory (30% of grade):

Laboratory activities will accompany selected chapters. This allows students to experience the concepts taught as concrete applications. Students will take notes and record measurements during the laboratory process, then analyze and evaluate the concept explored in a lab report. Laboratory procedures and equipment can cause harm and/or be dangerous. Students must exercise self-discipline and follow the directives of the teacher and the safety precautions outlined in the lab description.

A *pre-labs* should be completed prior to doing the lab activity so that you can begin and complete the experiment in a timely manner. Because each lab requires set-up and clean-up, and because labs may require coordination with other teachers and classes *make up* opportunities will be limited. Therefore, if you are going to miss a lab due to a prior commitment for school or otherwise you need to communicate this to the teacher prior to your absence.

All your laboratory work and data must be kept and noted in your marble notebook. Your notes and measurements will be used to prepare your lab report. You will receive credit twice for this information once in the notebook and once in the report. Laboratory reports will be assigned, collected, and evaluated regularly at the completion of an experiment. There is a specific format to be followed (hand-out) in this process.



•Office Hours

Students are welcome to come into my office to get questions answered, review class notes, do homework, or study. If necessary, a student may be required to come into study hour to discuss class material with the teacher. Office hours and days are posted on the top of the syllabus and will be posted in the classroom as well.

NOTE: Many of the classes science teachers teach require after school support on a regular basis. Stu-

dents coming for assistance should have some understanding of what they want to review or need help with. This is important because students who understand their needs (i.e. students with projects or labs) can be more assertive and get more of the teacher's time leaving students who have no clear purpose not get the support they need. It helps to know what you want to learn.

• Grades

Grades are based on all of the work completed by students. Every category of assignment has a designated percent of the grade, every assignment in that category has the same fractional value unless specified by the teacher. If you have any questions, please talk with Mr. Davis.

Grading is difficult because as a teacher I am to evaluate and quantify your progress in my subject area as fairly as I can. I need to turn your work into a letter or a number and that's sometimes difficult. If for any reason you believe I have assigned the wrong grade to your work please come and see me. One thing that I must consider and you must also consider is the rationale behind the letter grade

Grading System	Grading Criteria
<p>A 94 - 100%</p> <p>A- 90 - 93%</p>	<p style="text-align: center;">The "A" Student</p> <ul style="list-style-type: none"> • Consistently superior comprehension and performance on assessments. • Exhibits work with exceptional insight or special creative talents. • Tends toward self-direction in activities and participates in class activities as listener, questioner or commentator. <ul style="list-style-type: none"> • Completes all assignments
<p>B+ 87 - 89%</p> <p>B 84 - 86%</p> <p>B- 80 - 83%</p>	<p style="text-align: center;">The "B" Student</p> <ul style="list-style-type: none"> • Consistently strong comprehension and performance on assessments but may have difficulties synthesizing concepts. • Work is consistent but offers little insight or special creative talents. • Shows occasional initiative but tends to rely on teacher direction. <ul style="list-style-type: none"> • Participates in class activities as listener but is a less frequent questioner or commentator. • Completes all assignments.
<p>C+ 77 - 79%</p> <p>C 74 - 76%</p> <p>C- 70 - 73%</p>	<p style="text-align: center;">The "C" Student</p> <ul style="list-style-type: none"> • Inconsistent or fair comprehension and performance on assessments. <ul style="list-style-type: none"> • Difficulties applying and synthesizing concepts. • Generally addresses the explicit but seldom offers little insight or special creative talents. <ul style="list-style-type: none"> • Relies on teacher direction. • Participates in class primarily as a listener. • Usually comments only if questioned. • Completes most assignments
<p>D+ 67 - 69%</p> <p>D 64 - 66%</p> <p>D- 60 - 63%</p> <p>F 0 - 59%</p>	<p style="text-align: center;">The "D" Student</p> <ul style="list-style-type: none"> • Minimum comprehension and performance on assessments. <ul style="list-style-type: none"> • Often misses explicit relationships. <ul style="list-style-type: none"> • Relies on teacher direction. • Participates in class primarily as a listener. <ul style="list-style-type: none"> • Comments only if questioned. • Fair number of assignments are missing.



- **Academic Integrity**

I hope to fairly assess your achievement in the course and expect that the work you submit to me is entirely yours. Most students do not have trouble meeting their own grade expectations when they put forth their best effort. Trust and honesty are important to me. Please be trustworthy and honest with me and I will reciprocate.

- **Tardies:**

Tardies are unacceptable unless excused by the attendance office.

- **Absences:**

All of every class period is important! The material we cover will most likely will not be repeated in a timely manner especially lab work. If absent, because of athletics or any other pre arranged reason all work due must be turned in prior to your departure and arrangements for missing class time must be made. If you are absent because of illness or unforeseen circumstances you need to turn in late work within two (2) class periods unless you arrange an alternative with teacher. This policy pertains to missed quizzes and exams as well, but If you are going to be absent on an exam day and you know it in advance let the teacher know. If miss an exam you will receive a zero as a placeholder and you have three (3) class periods to make it up. After a week the zero is permanent.

If you miss class notes, be sure to get them! You don't want to miss something that may be on a quiz or an exam. Leave a space in your notebook for the missing day. You need notes for every class period.

- **Telephone policy:**

There are telephones installed in the classrooms. These phones are for emergency use only and are not to be used by students at any time. If a cellular phone is heard, seen, or used in the classroom, it will be taken away and given to Mr. Shum.

- **How to be Successful • How to get ahead and stay ahead • Read the fine print !**

- Be in class and seated when the bell rings.
- Bring appropriate materials to class and lab.
- Be ready and willing to participate each day.
- Notes and work should be legible and understandable to all.
- Don't be absent you'll miss stuff !
- All assignments must be done on time
- Come to class and lab prepared: read assignment the night before and be ready to discuss in class
- Ask questions, participate, and share thoughts and ideas!
- Write down assignments in your *Agenda*.
- Turn in assignments the day they are due absent or not.
- Follow guidelines for projects and assignments.