

# Biology II Syllabus

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Prep./Conference Period: TBA

Course Description Per Course Catalogue: Biology II is a field and laboratory course designed to further develop skills in the use of laboratory techniques and apparatus. The course is also designed to give the student some experience in the use of the scientific methods while conducting investigations. The course offers concentrated studies in cellular biology, histology, microbiology, taxonomy, entomology, evolution, human anatomy and physiology, along with comparative invertebrate and vertebrate Anatomy. The course also studies importance of species within ecosystems and human interactions with ecosystems. Notebooks and other projects may be required for the completion of this course.

## Biology:

This biology course involves the continued scientific study of living organisms and how human interaction with biotic and abiotic materials affects the biosphere.

This is an interactive, highly hands-on course in biology. Through out the study, students are encouraged to apply critical thinking, ask questions, and explore the nature of science.

This course has a yearlong project that involves an endangered species, its ecological importance, and its conservation. Throughout this project, students work as a team, log satellite tracked data, do research, and are required to dispense information to other *Homo sapiens sapiens* both of school age and beyond.

There will also be readings periodically based upon biological topics which we are covering or that appear in the news.

The course is built upon the following themes:

- Nature of Science (science as a process)
- Unity with Diversity
- Systems and interactions
- Evolution
- Science, technology, and society

## Materials:

1. Textbook – must be signed and covered. This will be provided by the end of week two or upon completion of major schedule changes.)
2. Writing utensil – you must supply your own pen or pencil daily. Pencils must be used for microscope drawings.
3. 3-Ring Binder –this should be at least a 1 inch binder; bring daily for notes, handouts, and sketches. (This serves as your notebook for the course.)
4. Science fee – must be paid A.S.A.P. once they have been adopted. In the past this has been \$15.
5. Metric ruler
6. A thumb drive – for storing computer generated information.
7. Calculator – a simple one to add, subtract, multiply, and divide.
8. Paper- Loose leaf (Some printer paper will be used as well, but not enough to require purchasing a ream.)
9. You – you are required to attend class on a regular basis.

## Grading:

1. Grading scale: A=93-100%  
B= 84-92%  
C= 74-83%  
D= 65-73%  
F= 0-64%
2. Grades will be given for tests, quizzes, homework, labs, student response system lecture questions, presentations, projects, etc.
  - a. Each week there is a set of multiple choice review questions, which are completed and graded on-line with immediate feedback.
3. There will be only a few extra credit opportunities a year. Generally once per grade period.
4. Point deductions will be made for lab violations / horseplay.

### Extra Help:

I encourage you get extra help when you need it. I am usually available after school, but check with me to make sure I don't have a meeting or other appointment.

### Topics

#### Semester 1:

Overview of Course

Review of

How scientists/biologists work

Graphing

Data Tables

Data Collection and Analysis

Microscopes

Microscope Drawings

Basic Biological Drawings

Dissections

Directional Terminology

Reptiles

Orders

Turtle Project

Presentations

Insects

Orders

Standard Entomology

Collections

Forensic entomology

Mollusks

Orders

Shells

Dissections

Evolution

Review of History/People

Theories

Fossils

Dating

Index

Geologic Time Scale

Molecular evolution

Fit/Natural Selection

Hardy Weinberg

Superposition

Skeletal Remain Comparisons

Laetoli Footprints

Height estimation based on trace fossils

#### Semester 2:

Complete Evolution section

Turtle Project Continues

2<sup>nd</sup> Presentation

Fish

Orders

Dissections

Scales

Aging

Amphibians

Orders

Calls

Mammals

Orders

Dissections

Human Systems

Skeletal

Nervous

Circulatory (Heart/EKG)

Tissues

Autopsy

#### Bio II Dissections Include:

Crayfish

Squid

Shark

Perch

Pig