



Radnor High School
Course Syllabus



Biology
0324

I. Course Description

1.0 Credit, Unweighted

Length: Year; Format: Meets Daily

Prerequisite(s): Physical Science

Co-requisite(s): Topics of Geometry

This course focuses on biological concepts and principles that are fundamental to a literate view of the living world. Laboratory experiments and library research studies are designed to nurture and develop skills and understanding that help explain important biological events. Instruction is organized around thematic topics that include: classification of local flora and fauna, microbes and man, and man and the environment. Students work in laboratory activities where both individual and group accountability is valued.

II. Materials & Equipment

Textbook :Biology An Everyday Experience

III. Course Goals & Objectives

Biology is an academic course where learning is accomplished through guided instruction. A moderate pace is used to develop thinking skills and to prepare students to meet the Pennsylvania graduation requirements. Students are involved in laboratory investigations where both individual and group work is assigned. At the close of the course, students are able to:

- Identify and characterize major life forms using a modern taxonomical system
- Understand the basic chemical and structural basis of living organisms
- Describe how genetic information is inherited and expressed
- Explain the mechanisms of the theory of evolution
- Explain the role of mutation and gene recombination in changing a population
- Apply the concept of natural selection to illustrate and account for species survival or extinction

IV. Course Topics (Summary Outline)

1. Kinds Of Life

- The Study of Life
- Features of Life and the Cell

- Classification

2. Kingdoms

- Viruses and Monerans
- Protists and Fungi
- Plants
- Simple Animals
- Complex Animals

3. Body Systems: Maintaining Life

- Nutrition
- Digestion
- Circulation
- Blood
- Respiration and Excretion
- Support and Movement

4. Body Systems: Controlling Life

- Nervous and Chemical Control
- Senses
- Animal Behavior
- Drugs and Behavior

5. Plant Systems

- The Importance of Leaves
- Plant Support and Transport
- Plant Response, Growth and Disease

6. Reproduction and Development

- Cell Reproduction
- Plant Reproduction
- Animal Reproduction
- Animal Development

7. Traits of Living Things

- Inheritance of Traits
- Human Genetics
- DNA-Life's Code
- Evolution

8. Relationships In The Environment

- Populations and Communities
- Ecosystems and Biomes
- Solving Ecological Problems

V. Assignments & Grading

Common cumulative midterm

Common cumulative final

Common Labs:

Brine Shrimp Lab

Microscope Lab

Homologous Structures Lab

Biochemistry/Organic Lab

Diffusion/Osmosis Lab

Fermentation Lab

Surface Area to Volume Ratio Lab

Plant/Animal Interrelationship

Owl Pellet Lab

Inheritance of Chromosome

DNA Extraction Lab

Electrophoresis Lab

Immunity Lab/Contamination Lab

Respiratory System Lab

Circulatory System Lab

Digestive System Lab