

Lecture #1 – The Nature of Life

I. Course Introduction

- A. Overview
- B. Requirements
- C. Grading
- D. Meeting Time & Place
- E. Who is your instructor?

III. Lecture #1 – The Nature of Life

Biology is the study of life. Why do people study life? There is an innate curiosity about all forms of life among all humans: an intrinsic interest. This curiosity is brought on by a desire to understand our place in the world, how we fit into the grand scheme. I hope this course will either stimulate or reveal an interest you may have in biology. Biology is a multi-disciplined science. As a consequence, it is easy to become overwhelmed in the process of learning about the multitudes of biological processes. Organization, participation, and studying will be essential to your success in this class.

A. **Zoology** is a sub-discipline of biology; Zoology is a **science**

B. Basic Principles of Evolutionary Theory:

- 1. Descent with modification due to natural selection.
 - A. Change through mutations and distributed in organisms across a population.
 - 1) Not change due to growth and development
 - 2) Survival of the fittest is not a social commentary
- 2. Descent
 - A. Reproduction of parents, giving rise to offspring generations
- 3. Modification
 - A. Genetic mutations lead to organism modifications
- 4. Natural Selection
 - A. Change occurs in the frequency of a trait within a **population or species**.
 - 1) Variable traits are selected against when fitness is reduced
 - B. Environmental and ecological conditions change
 - 1) Climate change
 - 2) Predation
 - 3) Sexual Signals
 - 4) Food Availability

Reading: Chapter 1 – pages 1-34 (skip page 29 Hardy-Weinberg Equilibrium)

Questions: Page 33 – 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, and 21.