

# North Hennepin Community College

## BIOL 2020: Animal Biology

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 0

Lab Hours/Week: 0

OJT Hours/Week: \*.\*

Prerequisites:

This course requires any of these three prerequisite categories

1. Both of these

BIOL 1001 - Biology I (Minimum grade: 1.67 GPA Equivalent)

BIOL 1101 - Principles of Biology I (Minimum grade: 1.67 GPA Equivalent)

Or

2. BIOL 1002 - Biology II

Or

3. BIOL 1102 - Principles of Biology II (Minimum grade: 1.67 GPA Equivalent)

Corequisites: None

MnTC Goals: Goal 03 - Natural Science

This course provides a framework for understanding the phylogenetic relationships among the major groups (phyla) of animals. Knowledge of the ecology, morphology, and evolutionary history of the phyla informs the student's understanding of how diverse groups of animals have solved the common problems of existence (e.g., feeding, movement, respiration, and reproduction) and how their solutions have given rise to increasing levels of structural complexity. The laboratory is an integral part of the course; activities are hands-on and require dissection of preserved animals.(3 hours lecture, 4 hours lab) Pre-requisite: Biology 1001/1101 and Biology 1002/1102 with a grade of C or better, or consent of the professor.

**B. COURSE EFFECTIVE DATES:** 08/25/1997 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Topics include: The nature of scientific inquiry and data analysis, principles of animal ecology and evolution theory, architectural patterns of animals, classification and phylogenetic analysis, derived and conserved morphological features of animal phyla, internal and external anatomy, and dissection of representatives of most major animal phyla.

### D. LEARNING OUTCOMES (General)

1. Use the scientific method and describe its strengths and limitations as a method of inquiry. (MnTC G2, comps. a, b, c, d; MnTC G3, comp. a; ELO 1, 2)
2. Practice developing hypotheses and predictions for laboratory and field observations and experiments (MnTC G2, comps. a, b, c, d; MnTC G3, comp. b; ELO 1, 2, 4)
3. Explain and differentiate among predictions, observations, and interpretation of qualitative and quantitative data from comparative and experimental studies. (MnTC G3, comp. c; ELO 1, 2)
4. Apply appropriate statistical and graphical analyses of experimental and observational data, communicating the observations and interpretations both orally and in writing. (MnTC G3, comps. b, c; ELO 1, 2)
5. Demonstrate an understanding of phylogenetic methodologies apply the techniques to the development and interpretation of cladograms. (MnTC G3, comps. a, b; ELO 1, 2, 4)
6. Describe the similarities and differences among animal phyla, using an understanding of the evolutionary history of the phyla. (MnTC G3, comps. A, ELO 1, 2)
7. Articulate the critical role of evolutionary theory in biology. (MnTC G3, comp. a, d; ELO 1, 2, 3)

## **E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

### Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.
2. Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
3. Communicate their experimental findings, analyses, and interpretations both orally and in writing.
4. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.

## **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

## **G. SPECIAL INFORMATION**

1. Knowledge of Human Cultures and the Physical and Natural World - Through study in the sciences, mathematics, social sciences, humanities, histories, languages, the arts, technology and professions.
2. Intellectual and Practical Skills - Including: Inquiry and analysis; Critical and creative thinking; Written and oral communication; Quantitative literacy; Information literacy; Teamwork and problem solving.
3. Personal and Social Responsibility and Engagement - Including: Civic knowledge and involvement - campus, local and global; Intercultural knowledge and competence; Ethical reasoning and action; Foundations and skills for lifelong learning.
4. Integrative and Applied Learning - Including: Synthesis and advanced accomplishment across general education, liberal studies, specialized studies and activities in the broader campus community.