**University of Arkansas – Fort Smith**

**5210 Grand Avenue**
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**General Syllabus:**

# BIOL 3704 Invertebrate Zoology

Credit Hours: 4 Lecture Hours: 3 Laboratory Hours: 3

Prerequisite: BIOL 2703/2701 General Zoology/Laboratory and ENGL 1213 Freshman English II or RHET 2863 Advanced Composition

Effective Catalog: 2018- 2019

## I. Course Information

### A. Catalog Description

A survey of the major invertebrate phyla. Introduction to morphology, physiology, behavior and ecology of major invertebrate groups as they relate to phylogenetic relationships, and adaptations for specific habitats and lifestyles.

### B. Additional Information

This is a junior level course for students that are biology majors that have successfully completed at least 8 hours of college level biology including General Zoology. Students are required to collect and preserve insects and/or other invertebrates.

## II. Student Learning Outcomes

### A. Subject Matter

Upon completion of this course, the student will be able to:

1 Compare and contrast physical and chemical characteristics of marine, freshwater and terrestrial environments and evolution of adaptations invertebrates developed to survive these habitats.
2 Compare morphological, embryological, and physiological adaptations of marine, freshwater and terrestrial invertebrates.
3 Identify and name the major invertebrate phyla and describe their general structure, and name representatives of each.
4 Use a dichotomous key to classify invertebrates taxonomically.
5 Collect, preserve and identify common invertebrates.
6 Define biological terms used to describe the structures and functions of invertebrates.
7 Discuss ecological relationships of invertebrates within a phylum and between

phyla.

8 Identify key evolutionary innovations that led to diversification in various invertebrate groups.

**B. University Learning Outcomes**

**Analytical Skills**

**Critical Thinking:** Students will compare and contrast physical and chemical characteristics of marine, freshwater and terrestrial environments and evolution of adaptations invertebrates developed to survive these habitats.

**Communication Skills (written and oral)**

Students will communicate with their lab partners to arrange work assignments for field trips. Students will make a scientific presentation in both oral and poster form.

## III. Major Course Topics

A. Introduction to aquatic and terrestrial habitats
B. Introduction to diversity, classification and phylogeny of invertebrates
C. Body plans, development, and life histories of the following groups of animals:
    1. Protozoa
    2. Mesozoa
    3. Parazoa: Phylum Porifera
    4. Diploblastic eumetazoa: Phyla Cnidaria and Ctenophora
    5. Triploblastic eumetazoa: Acoelomates: Phyla Platyhelminthes and Nemertea
    6. Triploblastic eumetazoa: Pseudocoelomates: Phlya Rotifera, Gastrotricha, Kinorhynca, Nematoda, Nematomorpha, Priapulida, Acanthocephala, Entoprocta, Gnathostomulida, Loricifera
    7. Triploblastic eumetazoa: Coelomates: Phyla Mollusca, Annelida, Sipuncula, Echiura, Onycophora, Tardigrada, Arthropoda, and Echinodermata
    8. Phylum Chaetognatha, hemichordates and non-vertebrate chordates
D. Ecology of selected local invertebrates.
E. Identification of selected local invertebrates.