

**Biol 4540/6540 Invertebrate Zoology**  
**Spring Semester 2019**  
**(3 hrs: MWF 11:30-12:20 in BNR 113)**

**Dr. James P. Pitts**  
**Department of Biology**  
**Utah State University**  
**Office: BNR 233**  
**Office Phone: (435) 797-8872**  
**jpitts@biology.usu.edu**

**Office Hours:** Wednesday 1-2 pm or by appointment

**Lecture Text:** Brusca et al. 2016. *Invertebrates*, 3<sup>rd</sup> Ed., Sinauer Associates, Inc.

**Objectives**

Invertebrate zoology includes all aspects of the biology of animals not included in the subphylum Vertebrata. This includes more than 95% of all of the described species of animals. The primary objectives of this course are (1) to provide an overview and highlights of the invertebrate phyla, both extinct and extant, and (2) to gain an overview of the organismal biology of the *major groups* of animal organisms including the chordata but excluding the Vertebrata. The structure, function, behavior, habitat, ecology, evolution and phylogeny of the major groups of invertebrates will be discussed. Topics will be restricted to selected examples that typify major groups or clarify evolutionary relationships.

**General Information**

**Undergraduate Grading:**

3 Lecture Exams (25% each)	75%
Comprehensive Final Exam	25%

**Graduate Grading:**

Research Paper Rough Draft	5%
Research Paper Final Draft	10%
3 Lecture Exams (20% each)	60%
Comprehensive Final Exam	25%

***Cheating will not be tolerated.*** Anyone caught cheating will receive 0 on the test/assignment and the incident will be handled according to the University Academic Honesty/Integrity Policy.

Make-up tests and quizzes are allowed only in exceptional cases, e.g., illness with a doctor's note, death of a relative or close friend, accidents resulting in injury, or natural

disasters. Please notify instructor about your absence **PRIOR** to an examination via phone or email.

Lecture attendance is expected, and more than 5 unexcused absences will count against the attendance portion of your grade (2 points/absence beyond 5).

Cell phones should be turned **OFF** (not just to vibrate) during class.

**Graduate Student Research Papers:** Students will be required to address a topic/problem directly associated with lecture or reading for the class. The research paper can be from a historical perspective or may concern the advent of new scientific research. Explicit instructions will be supplied at a later date, but, briefly, it will be written as follows: 12 font Times New Roman, 1" margins, single spaced, and 5+ pages not including references. The references shall NOT include any information or citations gained from the Internet pages or a website. We will use only refereed journals, textbooks, etc., as references cited. Any deviation from the above format will result in a lower grade.

**ADA Compliance Statement:** Students with physical, sensory, emotional or medical impairments may be eligible for reasonable accommodations in accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973. All accommodations are coordinated through the Disability Resource Center (DRC) in Room 101 of the University Inn, 797-2444 voice, 797-0740 TTY, or toll free at 1-800-259-2966. Please contact the DRC as early in the semester as possible. Alternate format materials (Braille, large print or digital) are available with advance notice. Please note, however, that participation is required in lab for all students.

### **Schedule of Topics**

Jan. 9	Introduction
Jan. 11	Patterns
Jan. 13	Protozoa
Jan. 16	MLK Holiday
Jan. 18	Protozoa
Jan. 20	Protozoa
Jan. 23	Body Plans and Embryology
Jan. 25	Placozoa and Porifera
Jan. 27	Porifera
Jan. 30	Porifera
Feb. 1	Archaeocyatha and Stromatoporodida
Feb. 3	Cnidaria
Feb. 6	Cnidaria
Feb. 8	Cnidaria and Ctenophora
Feb. 10	Exam 1
Feb. 13	Bilateral Animals and Xenacoelomorpha
Feb. 15	Platyhelminthes

Feb. 17	Platyhelminthes
Feb. 20	Presidents Day
Feb. 21	Enigmatic Protostomes
Feb. 22	Mollusca
Feb. 24	Mollusca
Feb. 27	Mollusca
Mar. 1	Mollusca
Mar. 3	Annelida
Mar. 6-10	SPRING BREAK!!!
Mar. 13	Annelida
Mar. 15	Annelida
Mar. 17	Enigmatic Spiralian Phyla
Mar. 20	Gnathifera Phyla
Mar. 22	Exam 2
Mar. 24	Lophophorates
Mar. 27	Lophophorates
Mar. 29	Lophophorates
Mar. 31	Nematoida
Apr. 3	Nematoida
Apr. 5	Scalidophora
Apr. 7	Arthropoda
Apr. 10	Arthropoda
Apr. 12	Arthropoda
Apr. 14	Arthropoda
Apr. 17	Exam 3
Apr. 19	Echinodermata
Apr. 21	Echinodermata
Apr. 24	Echinodermata
Apr. 26	Hemichordata
Apr. 28	Protochordates
Final Exam	May 1, 11:30 am – 1:20 pm