

COURSE SYLLABUS for BIO 568 – Advanced Invertebrate Zoology
3 credit hours; Fall 2007

Important Note: This syllabus is subject to change at the discretion of the instructor

INSTRUCTOR: Dr. Tamara J. Cook
Lee Drain Building 105B
Phone: 294-1557 email: tcook@shsu.edu
Office Hours: 8:00—10:00 MW; 2:00—4:00 Tu; or by appointment

LOCATION & TIME: LDB 136, Tuesdays from 5:00 – 8:00 p.m.

EVALUATION: 4 Exams @ 150 pts each 600 pts
10 abstracts @ 10 pts each 100 pts
TOTAL POSSIBLE POINTS 700 PTS

GRADING: A = 630+ B = 560-629 C = 490-559 D = 420-489 F < 420

COURSE DESCRIPTION: Invertebrates are the dominant form of life on earth, comprising greater than 75% of all described species. Students will be briefly introduced to the phylum/class level characteristics of the major groups of invertebrate animals. The majority of the course will deal with the evolutionary history and phylogeny of invertebrates, invertebrate ecology, and the myriad solutions invertebrates have evolved to deal with the common problems of reproduction, feeding, osmoregulation, respiration, locomotion and developmental patterns.

COURSE OBJECTIVES: I sincerely hope that you come away from this course with a lively appreciation of the diversity and wonder of invertebrates; an informed perspective on the importance of invertebrates to the world's ecosystems; and an understanding of their importance to scientific thought and human culture. **Be prepared to assimilate much new material. BUT...also be prepared for a great deal of uncertainty; much remains to be discovered.**

EXAMS: There will be one in class exam comprised of definitions and short answer questions. This exam will evaluate how much you have absorbed of general invertebrate characteristics. The other 3 exams will be take home, essay exams that evaluate your ability to synthesize information from lecture and the primary literature. You will be given one week to complete the exam and all answers must be typed and cited appropriately. All exams are worth 150 points each for a total of 600 points towards your final grade.

ABSTRACTS: You are to prepare a short (~ one page) typewritten abstract for ten articles from the invertebrate primary literature (see "Types of Research Articles" posted on Blackboard).. You may NOT use articles I assign in class and you may NOT use review articles. As graduate students you should be at ease with the primary literature as this is where active investigators read about and write about the frontier of research. Each abstract is worth 10 points for a total of 100 points of your final grade.

NOTE: *Please see syllabus posted on blackboard for policies and information regarding Students with Disabilities, Academic Dishonesty, Visitors in the Classroom and Religious Holy Days.*

GENERAL COURSE OUTLINE

Subject area 1—taxonomy and systematics (Aug 20, 27, Sep 4, 11)

- ◆ We will spend the first four weeks of the semester surveying the 33 or so invertebrate phyla. Lectures will focus on phylum/class level characteristics and life history traits.
- ◆ Lecture material taken from a variety of general invertebrate zoology texts
 - *Invertebrates* 2nd edition, by Brusca & Brusca
 - *The Invertebrates: a synthesis*, 3rd edition; by Barnes et al, Blackwell Science
 - *Invertebrate Zoology* 6th edition, by Ruppert & Barnes, Saunders College Publ.
- ◆ **In class exam (1^{1/2} hours) on September 18, 2007**

Subject area 2—evolutionary history and phylogeny (Sep 18, 25, Oct 2, 9, 16)

- ◆ We will spend approximately 4^{1/2} weeks discussing issues such as the evolution of body plans, sources of evidence in invertebrate phylogeny, various invertebrate phylogenetic schemes, and time permitting, the phylogeny of some of the major invertebrate groups.
- ◆ Lecture material taken from the the primary literature and the following texts:
 - *Invertebrate Relationships*, by Willmer, Cambridge University Press
 - *The Shape of Life*, by Raff, University of Chicago Press
 - *Animal Evolution* 2nd edition, by Nielsen, Oxford University Press
- ◆ **First take home exam distributed October 16, 2007; due October 23, 2007**

Subject area 3—comparative functional biology (Oct 23, 30, Nov 6)

- ◆ We will spend 3 weeks considering the myriad solutions invertebrates have evolved to deal with the common problems of reproduction, feeding, osmoregulation and locomotion. If time permits, we will also discuss developmental patterns, respiration and control systems.
- ◆ Lecture material will come from the primary literature and the following text
 - *The Invertebrates: a synthesis*, 3rd edition; by Barnes et al, Blackwell Science
- ◆ **Second take home exam distributed November 6, 2007; due November 13, 2007**

Subject area 4—invertebrate ecology (Nov 13, 20, 27, Dec 4)

- ◆ We will spend the remaining four weeks of the semester talking about various aspects of invertebrate ecology.
 - We will deal with marine, freshwater and terrestrial invertebrates separately
- ◆ Lecture material will come from the primary literature
- ◆ **Third take home exam distributed December 4, 2007; due December 11, 2007**

ORGANIZATION:

The first four weeks (general survey of invertebrate phyla) will be standard lecture presentations using PowerPoint. During this time, the lecture period will be broken into three 50 minute sections, with 10 min. breaks in between.

The first hour of all lecture periods following the first exam will be devoted to class discussion. In general this is how it will work:

- ◆ Each week you will be given a short assignment based on that week's lecture topic
 - All assignments will involve reading journal articles.
 - I will either give you a paper to read or ask you to find an article about a particular group of invertebrates or some aspect of invertebrate physiology or ecology
- ◆ You should read the articles thoroughly and be prepared to discuss them during the first hour of the following following week's lecture period

STUDENTS WITH DISABILITIES: It is the policy of Sam Houston State University that no otherwise qualified disabled individual shall, solely by reason of his/her handicap, be excluded from the participation in, be denied the

benefits of, or be subjected to discrimination under any academic program. Disabled students may request assistance with academically related problems stemming from individual disabilities by contacting the Director of the Counseling Center in the Lee Drain Annex or by calling (936)294-1720.

ACADEMIC DISHONESTY: All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused in any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.

VISITORS IN THE CLASSROOM: Unannounced visitors to class must present a current, official SHSU identification card to be permitted in the classroom. They must not present a disruption to the class by their attendance. If the visitor is not a registered student, it is at the instructor's discretion whether or not the visitor will be allowed to remain in the classroom.

RELIGIOUS HOLY DAYS: University policy states that a student who is absent from class for the observance of a religious holy day must be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence. Students must be excused to travel for observance of a religious holy day. A student who wishes to be excused for a religious holy day must present the instructor with a written statement describing the holy day(s) and the travel involved. The instructor will provide the student with a written description of the deadline for the completion of the missed exams or assignments.