

**ZOOL 4440: General Parasitology**  
**California State University Stanislaus**  
**Course Syllabus Fall 2015**

**Instructor:** Dr. Ritin Bhaduri

**Phone:** (209) 667-3485

**Office Hours:** Tuesday & Thursday 11:00 AM – 12:30 PM, or by appointment.

**Office:** 263 Naraghi Hall

**Email:** rbhaduri@csustan.edu

**Lectures:** TR 9:30 - 10:45 AM in Rm. N221; Lab: Thursday 2:00 – 4:50 PM in Rm N210

**Recommended Text & Atlas:** *Human Parasitology*, 4<sup>th</sup> ed., (2013) Burton Bogitsh *et al.* Academic Press. A Color Atlas of Parasitology by John T. Sullivan, University of San Francisco. ISBN: 0-9665807-7-X.

**Announcements:** We will use Moodle as our learning management system. Create a Moodle account (enrollment code: zool4400001fa15 ) and check for lecture slides, videos, etc. on a regular basis.

**Introduction:** Parasites are exceedingly important with respect to human (& other animals) health and economy. Parasites directly interact with ALL kinds of free-living organisms, including humans; as such, there are more kinds of parasites than free-living organisms. They also present many opportunities for scientific learning and understanding from molecular to ecosystem levels.

**Teaching Philosophy:** My teaching philosophy is that I want to share as much knowledge and understanding of the subject with students as possible. To see my students excel and become empowered with the newly acquired knowledge is what I feel teaching is all about.

**Course description:** General Parasitology is a senior-level animal diversity course. It is a 4-unit lecture and laboratory course. It satisfies the diversity requirement for the B.A and B.S. degrees in Biological Sciences, and is an elective both in Biology and in the following concentrations: Microbiology, Clinical Laboratory Science, and Entomology. Prerequisites: two years of college-level biology or equivalent. It will help if you have had some chemistry, cell biology and genetics, although these are not prerequisites. This course is especially relevant to pre-med, pre-vet, and other pre-health professions students, but also to any person expecting to travel, who expects to interact with other people or animals (especially in tropical countries), any biologist, teacher, etc.

**Objectives:** After completing this course you should be able to learn about and come to appreciate parasites and parasitism. In more detail, this involves learning names of, biology of, diseases caused by, interactions with hosts by, and importance of, parasites. We will cover primarily human parasites plus some examples of parasites of domestic animals.

**Specific Course Objectives**, i.e., what should you be learning: This is a content-heavy course; the primary learning objective is therefore mainly to learn course content. You need to learn thoroughly the information presented in lecture and lab about parasites, including being able to synthesize, organize and summarize such information into coherent thought processes. You need to be able to correlate what you see in lab with lecture materials. Texts are primarily for background reading and pictures/diagrams, unless it is noted that you especially need to know specific pages.

## ASSESSMENT METHODS, GRADES and GRADING:

The best assessment measure for content-heavy courses is exams. Most of your grade will be based on lecture exams and lab quizzes.

**Exams:** There will be three regular exams and a final exam. The final exam will not be comprehensive; it will only include new material covered since Exam 3. Exams will consist of definitions, comparisons, diagrams, short-answer questions, etc. Requests for early exams must be submitted *in writing* to the instructor prior to the scheduled exam. You will need to provide written (documented) evidence of hardship. **No make-up exams will be given after graded exams are returned to the class.**

Assessment	Percentage	Grading Scale
Exam 1	17	A = 90% or higher (A- = 90-92, A = 93 and higher) B = 80 – 89% (B- = 80-82, B = 83-86, B+ = 87-89) C = 70 – 79% (C- = 70-72, C = 73-76, C+ = 77-79) D = 60 – 69% (D- = 60-62, D = 63-66, D+ = 67-69) F = below 60%
Exam 2	17	
Exam 3	17	
Exam 4	17	
Lab Exams	17	
Seminar	10	
Participation	5	
<b>Total</b>	<b>100%</b>	<b>Note:</b> CR/NC is not an option in this course.

A lab notebook is optional but worth up to 5% extra credit. Lab notebooks are due at the beginning of the final lab quiz. Notebooks will be graded on the basis of the number of YOUR drawings (not Xeroxes, digital photos, etc.) and thoroughness of labeling of all drawings.

**Cheating and Plagiarism:** Don't do it! Your work should reflect your own effort and words. Any verified instance of cheating and/or plagiarism will be unpleasant for all involved.

### Important Dates:

- Thursday (Sept 15): Last day to drop the course
- Thursday (Oct 13): Non-Instructional Day – no classes; University offices/services are open
- Wednesday (Nov 11): Veteran's Day holiday, University Closed (no classes)
- Thursday-Friday (Nov 26-27): Thanksgiving Holiday, University Closed (no classes)
- Thursday (Dec 10): Last day of classes
- Friday (Dec 11): Reading Day – no classes, no institutionally-scheduled final exams

### EXPECTATIONS OF STUDENTS

1. Attend all class meetings. If you must miss a class meeting, it is your responsibility to make up any work missed and to obtain and learn all information you missed.
2. Be on time to class and stay in lab until it is supposed to be over.
3. Students are expected to take exams on days and times listed in the class schedule. There are

NO alternatives for lab exams. If you have a legitimate excuse to miss a lecture exam, the instructor needs to know, before the beginning of the exam time, and other arrangements need to be made prior to the exam time. Additionally, you should be prepared to provide documentation (doctor's note, etc.) for missing a lecture exam.

4. Observe lab safety and cleanliness procedures. Please clean up after every lab.

5. Cheating in any form is unacceptable. It is the policy of the Biology Department that anyone caught cheating will receive a grade of F for the course. The instructor reserves the right to request any student even suspected of cheating to take a second, different, exam from the rest of the class.

6. Participate fully and in a positive manner in all class activities.

7. Talking, whispering, and giggling among students during lectures is disruptive for both classmates and the instructor. It is expected that students will refrain from these activities while anyone is lecturing at any time during lecture or lab time. If this becomes a problem, students will be asked to leave class for the duration of these activities.

8. Cell phones must be turned off during lecture or lab time. Cell phones PDA's, head phones, palms, etc. must be turned off, and must be placed out of sight of any student in the class, during all lecture and lab exams. No caps or hats may be worn during lecture or lab exams. Potty breaks are not allowed during lecture or lab exams.

9. People learn best when they take responsibility for their own learning. You need to accept that responsibility.

*It is my hope and expectation that we will all work together to make this course an outstanding experience for all involved.*

**Study Skills:** The following suggestions may help you succeed in this and other classes.

1. **Read** the chapter before class and bring questions you have from the chapter to class.

2. **Attend** class.

3. **Take notes** in a way that is intuitive to you.

4. **Join a study group** with likeminded individuals. Students who study in groups tend to do better than those that study alone. Review terminology with your colleagues on a regular basis.

5. **Study** for the exams sooner than the night before or morning of the exam.

6. **Learn how you learn** and then stick with a style or process that is successful for you. Learning takes time and is difficult (impossible?) to do in a single session before an exam.

7. When studying for exams, focus primarily on lecture notes, concepts emphasized in class, and any assigned readings.

### LECTURE SCHEDULE (Tentative)

<b>Week of</b>	<b>Topics</b>	<b>Chapters</b>
Aug. 25	Course Introduction	1
Sept. 1	Ecology & Evolution of Parasitism, Parasite-Host Interactions	1, 2
Sept. 8	Major parasitic phyla, Introduction to Protozoa	3
Sept. 15	Visceral Sarcomastigophorans, Ciliophora	4
Sept. 22	Visceral flagellates	5
Sept. 29	Blood and Tissue Protozoans (Hemoflagellates)	6
Oct. 6	Blood and Tissue Protozoans (Plasmodium and Human Malaria)	7
Oct. 13	Blood and Tissue Protozoans (Other Apicomplexans)	8
Oct. 20	Introduction to Trematodes	9
Oct. 27	Visceral Flukes	10
Nov. 3	Blood Flukes	11
Nov. 10	Introduction to Cestodes, Intestinal Tapeworms	12, 13
Nov. 17	Extraintestinal Larval Tapeworms	14
Nov. 24	Introduction to Nematoda	15
Nov. 25	Intestinal Nematodes	16
Dec. 1	Blood and Tissue Nematodes	17
Dec. 8	Parasitic Arthropods	18

### LABORATORY SCHEDULE (Tentative)

<b>Date</b>	<b>Topics</b>
Aug. 27	Introduction, <i>Video</i>
Sept. 3	Visceral Amoebas
Sept. 10	Visceral Flagellates

Sept. 17	<b>Lecture &amp; Lab Exam 1</b>
Sept. 24	Hemoflagellates
Oct. 1	<i>Plasmodium</i> species
Oct. 8	Other Protozoans
Oct. 15	<b>Lecture &amp; Lab Exam 2</b>
Oct. 22	Visceral Flukes
Oct. 29	Blood Flukes
Nov. 5	Intestinal Tapeworms
Nov. 12	<b>Lecture &amp; Lab Exam 3</b>
Nov. 19	Intestinal Nematodes
Dec. 3	Blood/Tissue Nematodes
Dec. 17	<b>Lecture &amp; Lab Exam 4</b> (Final), Thursday: 8:30 – 10:30 AM

## Seminar Presentations:

During your 20-minute presentation, you will be required to present a 5-min discussion on general biology/life cycle, followed by a 15-min seminar on 3-4 previously reported clinical case studies associated with the following parasites (listed under topic). Allow 5 min for questions/answers/class discussions.

Presenter	Topic	Date
Baez Jr, Teresa Alejandra	<i>Entamoeba histolytica</i>	10-Sep
Baijnauth, Amanda	<i>Naegleria fowleri</i>	10-Sep
Beas, Gigi Marie	<i>Giardia lamblia</i>	24-Sep
Cardenas, Gregory Robert	<i>Trypanosoma</i> (African)	24-Sep
Dhanoya, Amanjit Singh	<i>Trypanosoma</i> (American)	24-Sep
Ferrer, Cayenne Crisostomo	<i>Leishmania</i> spp.	1-Oct
Hawthorn, Chelsea Breanne	<i>Plasmodium falciparum</i>	1-Oct
Jara, Samantha Kristina	<i>Toxoplasma gondii</i>	8-Oct
Kollmar, Vanessa Nicole	<i>Pneumocystis carinii</i>	8-Oct
Kotelnicki, Samantha Marles	<i>Clonorchis sinensis</i>	22-Oct
Kumar, Sandip Singh	<i>Paragonimus westermani</i>	22-Oct
Moll Lee, Kimberly Miranda	<i>Schistosoma haematobium</i>	29-Oct
Nguyen, Christine Thao	<i>Schistosoma japonicum</i>	29-Oct
Ramirez, Cesar	<i>Taenia saginata</i>	5-Nov
Salcido, Lindsey Danielle	<i>Taenia solium</i>	5-Nov
Simonyas, Shaghayegh	<i>Echinococcus</i> spp.	5-Nov
Sosa, Sheila Irene	<i>Ascaris lumbricoides</i>	19-Nov
Thao, Va Lor	<i>Enterobius vermicularis</i>	19-Nov
Townsend, Bernadette Kaye	<i>Ancylostoma duodenale</i>	19-Nov
Tran, Hung Diep	<i>Trichinella spiralis</i>	3-Dec
Vega, Jorge Luis	<i>Trichuris trichura</i>	3-Dec
Walker, Carrie Ann	<i>Onchocerca volvulus</i>	3-Dec
Wegner, Christopher Wayne	<i>Wuchereria bancrofti</i>	3-Dec
Young, Taylor Nichole	<i>Dermatobia hominis</i>	3-Dec

**Oral Presentation Evaluation Form**

Presenter: \_\_\_\_\_

Seminar Title: \_\_\_\_\_ Total Points: \_\_\_\_/50

**I. Style**

\_\_\_\_\_ The talk fits the time limit. (Note: Presentations are ~20 minutes excluding questions.)

Presentations outside the target time lose 5 points.

\_\_\_\_\_ Enough time is spent on each slide to allow the audience to absorb the information.

\_\_\_\_\_ The visuals have large and concise text and are readable by all audience members. Use bullets.

\_\_\_\_\_ Information in tables and figures are readable by all audience members.

\_\_\_\_\_ The talk is **NOT** read. 5 – 10 points will be deducted if the talk is read.

\_\_\_\_\_ The flow, message, and length of the talk indicate the speaker practiced the talk.

\_\_\_\_\_ The presentation can be clearly heard by all audience members and there are no distracting mannerisms.

**II. Content**

\_\_\_\_\_ The guiding question/message of the talk is stated at the beginning. Include a title slide.

\_\_\_\_\_ Information presented is appropriate for a scientific audience.

\_\_\_\_\_ The introduction is brief in proportion to the length of the talk.

\_\_\_\_\_ Methods are shown in with sufficient detail to support the results.

\_\_\_\_\_ The format of each table/figure is described before focusing on the content.

\_\_\_\_\_ Relevant findings in figures and tables are adequately described.

\_\_\_\_\_ Clear and concise conclusions are stated at the end in a form to reinforce the message.

\_\_\_\_\_ The presenter appears to understand the material.

\_\_\_\_\_ The presenter handles questions well.

\_\_\_\_\_ The presenter appears to have more knowledge of subject (as evidenced by handling of questions) than given in presentation.

\_\_\_\_\_ The information from different articles (sources) is integrated. Include a bibliography slide.

Overall Comments: