

ZOOL 4440: General Parasitology
California State University Stanislaus
Course Syllabus Spring 2020

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Office Hours: Tuesday & Thursday: 9:30 – 11:00 AM, or by appointment.

Lectures: Tues & Thur: 11:00 AM–12:15 PM in Rm. N334; **Lab:** Thur: 5:00 – 7:50 PM in Rm N210

Recommended Text & Atlas: *Human Parasitology*, 4th 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: This course will use Moodle for lecture slides, article links, grades, etc. You need to enroll yourself in our course by (1) logging into <http://moodle.csustan.edu> with your CSUS id name (“jbond” if your email address is “jbond@csustan.edu”) and password. (2) Then, click in the “Course Categories” menu to select the current term and then click on our course name. (3) Finally, you must supply an enrollment key to join the course. The enrollment code is **genparasp20**

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. 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 or semi-tropical countries.

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 and lab exams.

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, fill in the blanks, 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 makeup 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% Note: CR/NC is not an option in this course.
Exam 2	17	
Exam 3	17	
Exam 4	17	
Lab Exams	22	
Seminar	10	
Total	100%	

A lab notebook is required and worth up to 5 points extra credit added to final lab exam grade. Notebooks are due at the beginning of the final exam, and 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:

- Jan 28 – Classes Start
- Feb 21 – Census Date
- Mar 23 – Mar 27: Spring break
- May 14 – Last day of classes

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. All exams will be held during the lab period. If you are tardy, you will not be given extra time to finish the exam. Potty breaks are not allowed during exams. **Once exam has started, you will not be allowed to leave the room until you have finished and turned in your exam.**

5. Cheating in any form is unacceptable. It is the policy of the Biology Department that anyone caught cheating will receive '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. Observe lab safety and cleanliness procedures. Please clean up after every lab

9. 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.

10. 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)

Week of	Topics	Chapters
Jan. 28	Course Introduction	1
Feb. 4	Ecology & Evolution of Parasitism, Parasite-Host Interactions	1, 2
Feb. 11	Major parasitic phyla, Introduction to Protozoa	3
Feb. 18	Visceral Sarcomastigophorans, Ciliophora	4
Feb. 25	Visceral flagellates	5
Mar. 3	Blood and Tissue Protozoans (Hemoflagellates)	6
Mar. 10	Blood and Tissue Protozoans (<i>Plasmodium</i> and Human Malaria)	7
Mar. 17	Blood and Tissue Protozoans (Other Apicomplexans)	8
Mar. 31	Introduction to Trematodes	9
Apr. 7	Visceral Flukes	10
Apr. 14	Blood Flukes	11
Apr. 21	Introduction to Cestodes, Intestinal Tapeworms	12, 13
Apr. 28	Extraintestinal Larval Tapeworms	14
May 5	Introduction to Nematoda	15
May 12	Intestinal & Tissue Nematodes	16

LABORATORY SCHEDULE (Tentative)

Date	Topics
Jan. 30	Introduction, <i>Video</i>
Feb. 6	Visceral Amoebas
Feb. 13	Lecture & Lab Exam 1
Feb. 20	Visceral Flagellates
Feb. 27	Hemoflagellates
Mar. 5	<i>Plasmodium</i> species

Mar. 12	Other Apicomplexans
Mar. 19	Lecture & Lab Exam 2
Apr. 2	Visceral Flukes
Apr. 9	Blood Flukes
Apr. 16	Intestinal Tapeworms
Apr. 23	Lecture & Lab Exam 3
Apr. 30	Intestinal Nematodes
May 7	Intestinal Nematodes
May 14	Blood Nematodes
May 19	Final Exam: Tuesday, 11:15 AM – 1:15 PM in N210

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 10-min seminar on **3** previously reported clinical case studies associated with the following parasites (listed under topic). Allow 5 min for questions/class discussions. Use *PUBMED* and/or *MEDLINE* electronic databases (available via library webpage) to find your case studies.

Presenter	Topic	Date
	<i>Entamoeba histolytica</i>	Feb. 13
	<i>Naegleria fowleri</i>	Feb. 13
	<i>Giardia lamblia</i>	Feb. 20
	<i>Leishmania donovani</i>	Feb. 27
	<i>Leishmania</i> (other species)	Feb. 27
	<i>Trypanosoma</i> (African)	Mar. 5
	<i>Trypanosoma cruzi</i> (American)	Mar. 5
	<i>Plasmodium falciparum</i>	Mar. 12
	<i>Toxoplasma gondii</i>	Mar. 12
	<i>Pneumocystis carinii</i>	Mar. 19
	<i>Cryptosporidium parvum</i>	Mar. 19
	<i>Clonorchis sinensis</i>	Apr. 2
	<i>Paragonimus westermani</i>	Apr. 2
	<i>Schistosoma haematobium</i>	Apr. 9
	<i>Schistosoma japonicum</i>	Apr. 9
	<i>Taenia solium</i>	Apr. 16
	<i>Taenia saginata</i>	Apr. 16
	<i>Echinococcus</i> spp.	Apr. 23
	<i>Necator americanus</i> & <i>Ancylostoma duodenale</i>	Apr. 30
	<i>Ascaris lumbricoides</i>	Apr. 30
	<i>Trichinella spiralis</i>	May 7
	<i>Onchocerca volvulus</i>	May 7
	<i>Wuchereria bancrofti</i>	May 14
	<i>Dirofilaria immitis</i>	May 14

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: