SYLLABUS
GENERAL PARASITOLOGY (BLY 459)

DR. JACK O’BRIEN  FALL, 2005

OFFICE HRS: Monday, Tuesday, Wednesday 10:00 AM - noon
OFFICE: LSB Rm 52
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E-mail jobrien@jaguar1.usouthal.edu


LECTURE: Monday, & Wednesday 9:05 - 9:55 AM, LSB Rm 131
LAB: Tuesdays 2:00 - 4:30 PM   LSB Rm 240
Wednesdays 2:30 - 5:00 PM     "          "

LECTURE TESTS % of Grade
October 10, 2005  25
December 5, 2005  25
December 12, 2005 (9:00 AM) 10 (Comprehensive)

LABORATORY TESTS (All lab sections)
October 12, 2005 (9:05 AM) 15
December 12, 2004 (8:00 AM) 15 (Comprehensive)

COLLECTION Due December 5, 2005 10

Goals of the course: To give the students an understanding of the taxonomy, ecology, and evolution of parasites. Students will learn representative examples from local ecosystems as well as parasitic diseases of humans. It is assumed the students will be already familiar with the fundamentals of evolution, ecology, anatomy, and immunology as taught in General Biology I & II (BLY 121 & 122).

Changes in course requirements: In the past, unforeseen circumstances such as hurricanes, availability of specimens, sickness, and family emergencies have resulted in changes being made to the class schedule or the requirements as listed above. Hopefully not, but if changes have to be made in examination dates or other course requirements, you will be notified beforehand in class or on my page on the department website.

Death & dissection: Many stages of internal parasites can only be acquired at the cost of the life of the host organism. Consequently, you may be asked to kill animals such as frogs, earthworms, shrimp, fish, & insects prior to dissection. Every effort will be made to minimize discomfort to the organisms and all techniques have been approved by the Institutional Animal Care and Use Committee (IACUC) of the university. If you will be significantly uncomfortable with this aspect of the class I recommend that you withdraw.

Attendance: You are encouraged to view specimens on display as many times as possible. Labs will be offered Tuesdays and Wednesdays and you are WELCOME TO ATTEND THE OTHER SCHEDULED LAB SESSION during the 2nd hour (after my introductory lecture).

Make-up exams: Laboratory practical exams are scheduled for time periods assigned to lecture. Thus, all students will take their lab exams at the same time. Since lab practicals require hours of preparation and set-up, each exam will be given only once and there will be no early nor make-up exams. Students who miss a lab exam without a valid excuse (as defined in the USA Student Bulletin) will earn a score of zero for that test. If you have a valid excuse for missing a written examination, inform me with documentation with enough time before the exam to work out a solution.

Grade determination: Your grade will be determined on a sliding scale depending upon the highest total achieved by an undergraduate in the class. Thus, if your point total is ≥90% of the highest undergraduate point total, you will receive an “A,” between 90-80% is a “B,” and so on. Another (and less precise) way of expressing this policy is that the scores will be scaled a few points. A tentative grade distribution will be announced after each examination is graded.

Students with disabilities: In accordance with the Americans with Disabilities Act, students with bona fide disabilities will be afforded reasonable accommodation. The Office of Special Student Services will certify
a disability and advise faculty members of reasonable accommodations.

Academic Misconduct: You will require only pencils and erasers during every examination. Therefore, during lecture and laboratory tests, you will be asked to leave all personal items such as head caps, notebooks, backpacks papers, books, purses, etc in the front of the room. POSSESSION of a cell phone, a “palm pilot”, or an electronic device that can receive and/or store information on or near one’s person during an exam will be considered academic misconduct. Any student who, in the opinion of the lecturer, is guilty of academic misconduct will receive a grade of 0 (zero) for that test or assignment.

“The University of South Alabama is committed to the fundamental value of academic honesty. The student handbook, the Lowdown, defines plagiarism as one form of academic misconduct which is “subject to investigation and disciplinary action through appropriate university procedures.” Plagiarism is using somebody else’s ideas and/or words in your writing without correctly identifying the sources. As one resource for helping you avoid plagiarism, your written work in this class may be submitted to Turnitin.com or a similar detection method, for an evaluation of the originality of your ideas and proper use and attribution of sources. Assignments submitted to Turnitin.com will be included as source documents in a restricted access database solely for the purpose of detecting possible plagiarism of such documents. As part of this process, you may be required to submit electronic as well as hard copies of your writing. By taking this course, you agree that all assignments may be subject to some form of originality review. A paper not submitted according to procedures and format set by the instructor may be penalized or not accepted at all.”

The Student Academic Conduct Policy of the university may be downloaded at the following College of Arts & Sciences website: [http://www.southalabama.edu/arts&sci/conductpolicy.pdf](http://www.southalabama.edu/arts&sci/conductpolicy.pdf).

Pet Peeves My basic rule is that students should not disturb one’s neighbors nor irritate me during formal class periods. Believe it or not, past behaviors for which I have asked students to leave lecture or lab have included the following: cell phone audio alarms, cell phone conversations, talking while I am lecturing, and studying for other classes or reading while I am lecturing.

Web Postings: I will post lecture notes, announcements, test results, and other course-related information on my webpage at the Department of Biological Sciences. [http://www.usouthal.edu/biology/obrien/obrienteaching.html](http://www.usouthal.edu/biology/obrien/obrienteaching.html) Click on “General Parasitology BLY 459” in the upper box. I will make every effort to post my lecture notes before lecture in order that you will have a hardcopy before class. Do not consider the these notes to be a substitution for attending lecture as sometimes I discuss things that are not in the notes. To download a hardcopy of the notes, you will need the software called “Acrobat Reader” which you can download free from at link at the website [http://www.adobe.com](http://www.adobe.com).
<table>
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<th>Week</th>
<th>Starting</th>
<th>Lecture Topics</th>
<th>Laboratory Material</th>
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<tbody>
<tr>
<td>Aug.</td>
<td>22</td>
<td>Introduction, General Principles</td>
<td>Introductory Lecture</td>
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<td>29</td>
<td>(Labor Day) Platyhelminthes: Turbellaria, Monogenea, Aspidogastea</td>
<td>Lab 1: <em>Bdelloura, Gyrodactylus, Cotylaspis, &amp; larval trematodes</em></td>
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<td>Sept</td>
<td>5</td>
<td>Platyhelminthes: Digenea</td>
<td>Lab 2: Adult trematodes: <em>Schistosoma, Fasciola, Paragonimus, Clonorchis</em></td>
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<td>Parasitic plants; Platyhelminthes: Eucestoda</td>
<td>Lab 3: Tapeworms: <em>Diphyllobothrium, Dipylidium, Taenia, Taeniarhynchus, Echinococcus</em></td>
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<td>19</td>
<td>Nematoda</td>
<td>Lab 4: <em>Ascaris, Trichuris, Trichinella, Strongyloides, hookworms, Enterobius</em></td>
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|      | 26       | Nematoda: Filarioidea & Acanthocephala            | Lab 5: Filarial worms: *Wuchereria, Onchocerca, Dirofilaria*  
|       |          | Thorny-headed worms: *Macracanthorhyncus, Neoechinorhyncus* |
| Oct. | 3        | Arthropoda: Crustacea                              | Lab 6: Copepods, rhizocephalan barnacles, cyamid amphipods, bopyrid isopods, sea lice |
|      | 10       | **Lecture Exam** Platyhelminthes ➔ Crustacea (25 pts) | Lab Review & **Lab Exam** Labs 1 - 6 (15 pts) |
|      | 17       | Arthropoda: Insecta                               | Lab 7: Lice, bedbugs, fleas, bot flies, parasitoid wasps; Insect vectors: *Anopheles, Glossina, assassin bugs* |
|      | 24       | Arthropoda: Chelicerata                           | Lab 8: Ticks: *Ixodes*; Mites: chiggers, scabes and mange mites |
|      | 31       | Mastigophora (Flagellates)                        | Lab 9: Flagellates: *Trypanosoma, Leishmania, Giardia, Trichomonas,* termite symbionts |
| Nov. | 7        | Sarcodina (Amebas) & Ciliophora (Ciliates)        | Lab 10: Amebas: *Entamoeba, Naegleria, Acanthamoeba, Sheep ciliates, Balantidium,* |
|      | 14       | Myxozoa, Opalina, Nematomorpha, Nemertea, Hirudinea, Mollusca, Osteichthyes | Lab 11: Myxozoans opalinids, hair worms, egg predators, leeches, Glochidia, Candiru |
|      | 21       | Apicomplexa: Gregarines & Eimeriina (THANKSGIVING) | Lab 12: *Monocystis, Toxoplasma, Sarcocystis, Eimeria* |
|      | 28       | Apicomplexa: Haemosporina                          | Lab 13: *Plasmodium* (Malaria) & *Babesia* |
| Dec. | 5        | **Lecture Exam** Insects ➔ Apicomplexa (25 pts)    | Lab Review; **Collection due** (10 pts) |
|      | 12       | **Comprehensive Exam** (10 pts)                   | **Lab Final Exam** Labs 1 -13 (15 pts) |
STUDENT COLLECTIONS

You will be expected to submit a collection of five examples of local parasites that you collected during the semester. Digital photographs of specimens will be accepted if they show identifying characteristics. Each example that is submitted should be accompanied with a label and a type-written page containing the information described below.

Label Information
Name of collector
Locality collected
Date collected
Taxonomic identification of parasite. It may be difficult to identify many parasites to genus and species, but you will be expected to be reasonably specific. Certainly the phylum and class and, perhaps, order and family may be reasonable. The definition of “reasonable” will be determined by the instructor, you should check with me.
Taxonomic identification of host. This should be easier than above, but you may have to confirm your identification with faculty within the department. Note: “Confirm your identification” does NOT mean pestering people to ID your specimens for you.
Body organ of host containing parasite (Examples: intestine, muscle, gill cavity, gall bladder, external surface, free in body cavity, etc).
If you submit a photograph or photographs of the specimen, each photo should have the magnification indicated: 1X (= life size), 4X, 400X, etc. [Remember on compound microscopes the eyepiece magnifies an additional 10X the magnification of the objective lens.]
If you submit a preserved specimen instead of photographs, you need to indicate the preservative and staining technique, if applicable. (Examples: 70% ethyl alcohol, Permount®, hematoxylin, Wright’s stain, cleared in KOH, etc.)

Written Description
1 A few sentences describing characteristics that enabled you to identify the parasite, i.e. how do you know what it is. If the identity is unclear or there is more than one reasonable possibility state why.
2 At least one paragraph describing the life-cycle (i.e. direct, acquired by eating an intermediate host, hosts in life-cycle, etc) and what stage of the life-cycle is represented by your example (adult, egg, asexually reproducing stage in intermediate host, etc.)
3 Brief synopses of TWO citations from the reviewed literature.

Limitations
1 A maximum of FIVE species and a minimum of FOUR phyla
2 A maximum of TWO ectoparasites
3 I will accept NO examples of plants, fungi and bacteria.
4 Some students may have access through work or a friend to material collected at a veterinary clinic. I want you to make a collection, not have things handed to you; therefore, no more than ONE example from a dog and no more than ONE example from a cat will be accepted.
5 You are NOT to harm any mammals, birds, reptiles, nor any protected or endangered organisms to fulfill this assignment. Dissections of common species of amphibians, fish, molluscs, insects, and crustaceans should provide plenty of material. If you collect specimens by going fishing, remember you must a valid saltwater or freshwater fishing license in the state of Alabama. Be aware that POSSESSION of raptorial birds (hawks, eagles, owls etc) whether dead or alive without a permit is a federal crime; this includes road kills. Do NOT dissect raccoons, mice, nor rats as there is a possibility of exposure to zoonotic diseases. Always wear gloves when dissecting and wash your hands when you are finished.

This component of the course will account for 10% of your course grade.