IB 116 Medical Parasitology
July 8 – August 16, 2013
2nd 6-Week Summer Session 2013

Course Instructors:
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A. Course Description

This course has two-3 hr lectures and two-3 hr laboratories per week. We will discuss the biology, ecology, evolution, epidemiology, pathogenesis, diagnosis and prevention of a variety of parasitic diseases that infect humans. You will learn about the host-parasite relationship in the context of how social, economic and ecological, and evolutionary factors contribute to the host-parasite relationship. Laboratory exercises involve microscopic identification of prepared slides and live specimens obtained from dissection and fresh material. Participation on the field trip is required. The prerequisite for this course is Biology 1A and 1B; knowledge of physiology and anatomy is highly recommended.

B. Goals and Objectives

1. You will learn about the most prevalent parasitic diseases affecting animals and people worldwide. Instruction includes:

- Learning the names of parasitic helminths (worms) and protozoa, including their vectors and intermediate and reservoir hosts.
- Learning parasite life cycles, identifying the diagnostically important stages and the biological aspects of the host-parasite relationship.
- Discussions on the epidemiology of the diseases, with special reference to transmission to humans; pathogenesis of the diseases, emphasizing how infections in specific tissues/organs are associated with specific symptoms; treatment, differential diagnosis, and management of the diseases.

2. You will learn to recognize patterns related to the infectious disease process including:

- The impact of parasitic diseases in the context of world health; prevalence and geographical distribution of infection/disease.
- The role of the immune response in moderating or exacerbating the disease.
- The interplay of social, economical, and ecological factors that contribute to parasitic infection and disease.

3. You will develop an understanding of major concepts relevant to parasitic diseases including:

- Discerning the difference between parasitic infection and disease.
- The development of drugs and vaccines against parasitic infections.
- The roles vectors and reservoir hosts play in the persistence of infection.
- Parasitic infections as emerging infectious diseases.

C. Textbooks (Recommended)

The recommended textbooks, entitled Parasitic Diseases by Dickson D. Despommier, Robert W. Gwadz, Peter J., Ph.D. Hotez and Charles A. Knirsch (Apple Trees Productions, 5th Edition ISBN 0-9700027-7-7) **OR** Foundations of Parasitology by Larry S. Roberts and John Janovy, Jr. (and Gerald D. Schmidt) are meant to supplement the lectures and the lab. The latter textbook is more comprehensive than the Despommier et al textbook and covers many groups of parasites that

infect animals. It includes more biological information on each parasite and the group to which it belongs. Copies of both textbooks will be on 2-hour reserve in the Bioscience library and available as reference books in the laboratory.

D. Color Atlas and CD of Parasites (Highly recommended)

The 8th edition (2009) of the atlas includes color plates of parasites and their vectors with a brief explanatory text that emphasizes major characteristics of the parasite's structure, life cycle, and medical significance. The book can be purchased through Amazon.com using ISBN 096658077X or Listing No. 0706E1BPCDR. A CD entitled "Electronic Atlas of Parasitology" is included with the printed atlas (PC only). For more information, send e-mail to: sullivan@usfca.edu. This Atlas is highly recommended for the laboratory work and many students find the atlas very helpful. A copy of this book will also be on 2-hour reserve in the Bioscience library and in the laboratory.

E. Laboratory

The laboratory material is meant to complement the information discussed during lecture. The labs will include demonstration slides, living material, videos and other illustrative material. Students are expected to examine the specimens on mounted slides in further detail using microscopes at their desks. Some of these slides can no longer be obtained and are museum pieces! PLEASE BE VERY CAREFUL HANDLING THE MICROSCOPIC SLIDES – THERE WILL BE A FEE CHARGED TO THOSE WHO CRACK OR BREAK SLIDES.

Each student will be responsible for a laboratory notebook that should include drawings of each of the specimens we cover in the lab. Students are required to have their notebook checked by the instructor at the end of each lab session to obtain participation points.

F. Exam and Participation Format

There will be 3 lecture exams (including the Final Comprehensive Exam) that will cover the material discussed in the lectures. Exams include objective questions and short essay answers. There are 3 lab practicals. Each of these tests is worth 50 points. NO MAKE-UP EXAMS WILL BE GIVEN. The field trip is mandatory and attendance and participation in labs and lecture counts toward the participation points. Students are expected to maintain a laboratory notebook of the specimens covered in each lab session (for participation points).

Lecture exam points	= 300
Lab exam points	= 150
Participation points	= 50
Total points	= 500

G. Cheating and Plagiarism

This will result in dismissal from class, a failing grade and a letter in the student's file.

H. Class Culture

Be respectful and responsible.
No cell phone usage AT ALL.
Address instructors by their last names unless otherwise requested.
Work cooperatively in the lab.

I. Helpful Websites

http://www.cdc.gov/ncidod/dpd/aboutparasites.htm
http://asp.unl.edu/ (for "Parasite Images")
http://www.k-state.edu/parasitology/links