

PARASITOLOGY Biology 509

Text: **Human Parasitology**; Bogitsh and Cheng, Academic Press 0-12-110870-8

Instructor: Dr. D. Sen

Sp. 2004

200 Ag Eng. Bldg (AEB) 524-6793 P Office Hrs: M & F ~ 9-12

Preface: The course is designed for a one-semester course, the material is somewhat condensed, particularly in the area of physiology and Immunology. The course will appeal to those students interested in the medical aspects of Parasitology and also to those who require a solid foundation in the biology of parasitism.

Human Parasitology incorporates functional morphology and fine structures of some important parasites, physiology, classification, life cycles and general characteristics of disease causing parasites of human being.

The text deals with chemotherapeutic regimens which may prove useful to prospective students interested in medicine. To the end, the authors include expanded coverage of such topics as water-borne parasitic diseases and food-borne zoonoses.

Contents:

Symbiosis & Parasitism

- Commensalism
- Parasitism
- Mutualism
- Hosts
- Vectors
- Factors Influencing Prevalence

Fine Structure

- Organelle
- Flagellum

Amoebae causing Amoebiasis

- *Entamoeba*
- *Iodamoeba*
- *Endolimax*
- *Naegleria*
- *Acanthamoeba*
- *Balantidium*
- Classification
- Life Cycle
- Symptoms and Diagnosis
- Treatment

Giardiasis and Trichomoniasis

- *Giardia*
- *Trichomonas*
- *Chilomastix*
- *Dientamoeba*
- Classification
- Life Cycle
- Symptoms and Diagnosis
- Treatment

Trypanosomiasis and Leishmaniasis

- *Trypanosoma*
- *Leishmania*
- Classification
- Life Cycle
- Symptoms and Diagnosis
- Treatment

Malaria

- *Plasmodium*
- *Babesia*
- *Toxoplasma*
- *Pneumocystis*
- *Cryptosporidium*
- *Cyclospora*
- Classification
- Life Cycle
- Symptoms and Diagnosis
- Treatment

Trematoda:

Schistosomiasis (Blood Flukes)

- *Schistosoma*
- Classification
- Life Cycle
- Symptoms and Diagnosis
- Treatment

Visceral Flukes

- *Fasciola*
- *Clonorchis*
- *Opisthorchis*
- *Fasciolopsis*
- *Echinostoma*
- *Heterophyes*
- *Paragonimus*
- Classification
- Life Cycle
- Symptoms and Diagnosis
- Treatment

Cestoda (Tape Worms)

- *Diphyllobothrium*
- *Taenia*
- *Hymenolepis*
- *Dipylidium*
- Classification
- Life Cycle
- Symptoms and Diagnosis
- Treatment

Nematoda (Round Worms)

- *Trichuris*
- *Trichinella*
- *Strongyloides*
- *Necator*
- *Ascaris*
- *Enterobius*
- Larva Migrans
- Classification
- Life Cycle
- Symptoms and Diagnosis
- Treatment

Water-borne and Food-borne Diseases

Arthropods as Vectors

Common Drugs for Parasitic Infections

Current Chemotherapeutic Regimen

Note: Additional requirement: Special Topic on a parasite of medical importance and class presentation

K S A

Students will

- ~describe the assumption and limitations of science
- ~identify parasitology as integral part of science and human health
- ~identify hierarchy of classification
- ~explain the life-cycles of organisms
- ~recognize reproduction and development of parasitic organisms
- ~know the major concept of ecology
- ~understand the host-parasite relationships

Skills

Students will

- ~use microscope to identify the specimen
- ~differentiate closely related organisms by morphological features
- ~surf the Internet for fact finding venture
- ~attend the seminars and evaluate the scientific concepts
- ~demonstrate results qualitatively and quantitatively
- ~communicate scientific ideas through power-point presentation etc.

Abilities

Students will

- ~reject misconception in science
- ~acquainted with more recent scientific articles
- ~make sensible decisions
- ~come up with control and prophylactic methods to eliminate the disease-causing strains of parasitic organisms
- ~become more readily available to serve mankind
- ~involve in scientific research
- ~comprehend and communicate better and ultimately successful in choosing career

Grading: All examinations will be equally weighted including **Midterm** and **Final**. All will be graded according to the standard scale

100% -90%-----A; 89% - 80%-----B; 79% - 70%-----C; 69% - 60%-----D; 59% & below-----F

Regardless the points value of the examination or **quiz**, the total number of points will be converted to the above scale