

MEDICAL PARASITOLOGY
 EEB 3895 (Section 01; 3 credits)
 Fall 2016

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Lecture: Mondays and Wednesdays, 9:05–10:20 am; Where: TLS Rm. 301

Website: http://hydrodictyon.eeb.uconn.edu/eebedia/index.php/EEB_3895_Medical_Parasitology_Fall_2016

Course description: Parasitic agents of human disease: protozoan, helminth, and arthropod parasites of medical importance and their basic morphology, classification, and life-cycles; diagnosis of infection; current topics in parasitic diseases.

Format: Class periods will include a blend of lectures and group activities.

Prerequisites: Three credits of introductory biology or approval of instructor.

Required text: *Foundations of Parasitology* 8th (2008; Roberts & Janovy) or 9th (2012; Roberts, Janovy & Nadler) edition; McGraw Hill.

Course objectives:

The course is focused on the biology of the parasites responsible for human diseases. It is organized by parasite group and aims to provide: (1) an overview of the major parasite taxa infecting humans globally, (2) an appreciation of the diversity of life-cycles, portals of entry, sites infected, modes of reproduction these parasites employ, and (3) a basic understanding of the pathology associated with, and diagnosis of, infection with each major parasite group.

Specific learning outcomes: The course will provide a sound parasitological foundation for students who wish to pursue a career in a medical or related academic field.

- (1) Know fundamental concepts of parasitology and the technical vocabulary used in the field
- (2) Identify common human parasite taxa based on morphological, biological, clinical, and geographic criteria, and the diseases they cause.
- (3) Understand the human body as a home to parasites in terms of portals of entry and exit, and sites occupied by parasites.
- (4) Appreciate the complexity of parasite life-cycles and transmission strategies.
- (5) Hone critical thinking skills by applying fact-based knowledge of human parasites to scenarios involving infection diagnosis and prevention.

Grading:

3 Lecture Exams (90 points each)	270 points
Final Comprehensive Essay Exam	100 points
Class Participation (see * below)	30 points
TOTAL POSSIBLE POINTS:	400 points

(Final grade will be calculated as a percentage of the total number of the 400 points earned)

Useful websites:

<http://asp.unl.edu> -The American Society of Parasitologists (general parasitology)

<http://www.astmh.org> -The American Society of Tropical Medicine and Hygiene (medical parasitology)

<http://www.dpd.cdc.gov> -Center for Disease Control (CDC) resource for identification of parasitic disease agents (US government infectious diseases surveillance agency; focused on human and zoonotic parasites)

http://www.who.int/neglected_diseases/diseases/en/ -World Health Organization (WHO) Programme on neglected tropical diseases (Note that 11 of the 17 targeted diseases deemed important globally are caused by parasitic organisms!)

<http://www.who.int/topics/malaria/en/> -WHO Global Malaria Programme focusing on prevention, treatment and control of this protist infection

Major Parasite Group	In class activity*	Class Period	Lecture Topic
	E1	M Aug 29 W Aug 31 M Sept 5	Introduction; General Concepts of Parasitology The human body as a home to parasites; CDC & WHO Labor Day (No class)
Protozoan Diseases			
	E2	W Sept 7 M Sept 12 W Sept 14 M Sept 19	Introduction to zoonotic infections; <i>Giardia</i> : Giardiasis; <i>Naegleria</i> : PAM <i>Entamoeba</i> : Amoebiasis; Trichomoniasis <i>Trypanosoma</i> : African Trypanosomiasis (Sleeping sickness) <i>Trypanosoma</i> : American Trypanosomiasis (Chaga's disease)
	E3 (S1)	W Sept 21 M Sept 26	<i>Leishmania</i> : Leishmaniasis <i>Plasmodium</i> : Malaria
	(S2)	W Sept 28	<i>Plasmodium</i> : Malaria
	E4	M Oct 3 W Oct 5 M Oct 10	Exam I (Covers material up to end of Sept 28th) <i>Toxoplasma</i> : Toxoplasmosis and related diseases <i>Cryptosporidium</i> : Cryptosporidiosis and related diseases
Helminth Diseases			
	E5	W Oct 12 M Oct 17	Liver flukes: Fascioliasis; Clonorchiasis Lung flukes: Paragonimiasis
	E6 (S4)	W Oct 19 M Oct 24	Blood flukes: Schistosomiasis Blood flukes: Schistosomiasis
	E7	W Oct 26 M Oct 31	Tapeworms: Cysticercosis; Taeniasis Tapeworms: Echinococcosis; Diphyllbothriasis
	(S5)	W Nov 2 M Nov 7	Exam II (Covers material from Oct 5th through Oct 31st) Nematodes: Ascariasis; Toxocarosis
	E8 (S6)	W Nov 9 M Nov 14	Nematodes: Hookworm disease Nematodes: Filariasis; Dracunculiasis
	E9	W Nov 16 M Nov 21 W Nov 23	Nematodes: Trichinosis; Trichuriasis Thanksgiving (No class) Thanksgiving (No class)
Arthropod Diseases			
	(S7)	M Nov 28	Mites, ticks, and tick-borne diseases
	E10	W Nov 30	Fleas and lice
	(S8)	M Dec 5	Human parasites and climate change
	E11	W Dec 7	General considerations
Tentative date		M Dec 12 6–8 pm	Exam III (Covers Nov 7th though Dec 7th) & Final (Comprehensive Essays)

* The course will include be a series of in-class activities consisting of 11 Exercises (E1-E11 above) and 8 Skype conversations (S1-S8 above) with relevant parasite experts from around the country. Your grade for class participation will come from your participation in these activities. You *must* participate in *at least* 9 in-class Exercises (18 points). You will each also be asked to co-lead the Skype conversation with 1 of the 8 parasitologists (5 points), but will also be expected to be present for *at least* 7 of these conversations (7 points).