## BIOL 220-01, Biology of Human Parasites, Fall 2010

# Bio 220: Biology of Human Parasites

# Syllabus

# Fall 2010

Time: Monday, Wednesday, and Friday, 11:00-11:50

Course Instructor: Laura Luque de Johnson, luquedejohnsonl@rhodes.edu, phone: 843-3562

Text(s): Foundations of Parasitology (8th edition), Schmidt and Roberts. Medical Parasitology (9th edition), Markell and Voge (Reference).

Location: FJ-C

Office Hours: Monday, Wednesday, and Thursday, 3:00 – 4:00pm, FJ /142-E

### Overview

Humans are vulnerable to many infectious agents including parasites. Parasites can cause severe diseases in humans that range from Amebiasis to Malaria. In this course, parasites from protozoa to hookworms and their human diseases will be discussed. This class will focus on the organism's life cycles, on how the immune system reacts to the parasitic infection and on current and potential therapies. For comparison, infection with and response to viral, bacterial, and fungal parasites will be reviewed.

**WARNING: There will be nudity and graphic photos shown during class and in your textbook.**

## Expectations

Attendance: I expect that you will attend classes on a timely manner. There will be material cover in class that will be part of the exam and not found in the textbook. **During lecture exams, you may not leave the classroom until you have finished your exam. If you leave the room, I will collect your exam at that time.**

Participation: I expect that you should be engaged in the classroom and contribute with comments and questions during lecture and class discussions.

Cell phones: please turn your cell phones off while in class. There will be absolutely no texting while in class. **No cell phones allowed during examinations.** Cell phones must be stored out of sight during all exam, quizzes, and presentations.

Sickness: please notify me (via e-mail or phone) as soon as possible of any sickness that may preclude you from attending class or taking an exam. Doctor's notice might be required.

Disabilities: accommodations will only be made to those who are registered with the office of Student Disability Services mccowenm@rhodes.edu

| Day | Date | Topic | Reading |
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| | | **PRINCIPLES** | |
| Wednesday | August 25th | Introduction and Definitions | Chapter 1 |
| Friday | August 27th | Parasites and the Immune system | Handout # 1 in PDF form |
| Monday | August 30th | Parasites and the Immune system Continues | Handout # 2 in PDF form |
| Wednesday | September 1st | Parasitic protozoa | Chapter 4 pg 43-54 |
| | | **Intracellular Protozoa** | |
| Friday | September 3rd | Kinetoplasta: *Trypanosoma* | Chapter 5 pg 61-74 |
| Monday | September 6th | *No class- Labor Day* | |
| Wednesday | September 8th | Kinetoplasta: *Leishmania* | Ch. 5 pg 77-85/Article |
| Friday | September 10th | Phylum Apicomplexa:*Toxoplasma gondi* | Chapter 8 pg 134-139 |
| Monday | September 13th ** | Immunology of intracellular protozoa | Article |
| | | **Extracellular Protozoa** | |
| Wednesday | September 15th | Giardia: *Giardia duodenalis* | Chapter 6 pg 90-94 |
| Friday | September 17th | Amebas: *E. histolytica*, *N. fowleri* | Ch. 7 pg 107-113, 116-118 |
| Monday | September 20th | Immunology of extracellular protozoa | Article |
| Wednesday | September 22nd | Review | |
| Friday | September 24th | **EXAM I** | |
| | | ***Plasmodium*** | |
| Monday | September 27th | Morphological Characteristics and Life Cycle | Chapter 9 pg 147-156 |
| Wednesday | September 29th | Malaria | Chapter 9 pg 157-164 |
| Friday | October 1st | *Plasmodium* and Human Evolution | Article |
| Monday | October 4th | Proteins of *Plasmodium* parasites | Review Article |
| Wednesday | October 6th | *Plasmodium* and the Immune System | Article |
| Friday | October 8th | *Plasmodium*: Control & Prevention | Article |
| Monday | October 11th | **Presentations** | **Paper Due** |
| Wednesday | October 13th | **Presentations** | |
| Friday | October 15th | **Presentations** | |
| Monday | October 18th | *No classes- Fall break* | |
| | | **Helminths** | |
| Wednesday | October 20th | Trematodes: Digeneans: *Schistosoma* | Ch.15 pg 219-223, 229-237 & Ch. 16 pg 250-262 |
| Friday | October 22nd | Cestodes: Tapeworms: *Taenia saginata* | Ch. 20 pg 313-319, 326-331 & Ch. 21 pg 346-348 |
| Monday | October 25th | Tapeworms: *Taenia solium* | Chapter 21 pg348-351 |
| Wednesday | October 27th | Phylum Nematodes: *Trichinella spiralis* | Ch. 22 pg 369-373, 386-390 & Ch. 23 pg 403-409 |
| Friday | October 29th | Nematode: hookworms | Chapter 25 pg 419-426 |
| Monday | November 1st | Nematode: *Ascaris spp* | Chapter 26 pg 433-437 |
| Wednesday | November 3rd | Nematodes: *Wuchereria bancrofi* | Chapter 29 pg 463-468 |
| Friday | November 5th | Nematodes: *Onchocerca volvulus* | Chapter 29 pg 468-472 |
| Monday | November 8th | Nematodes: *Dranculus medinensis* | Chapter 30 pg 479-484 |
| Wednesday | November 10th | Immunology of helminths | Article |
| Friday | November 12th | A world without helminths | Article |
| Monday | November 15th | **EXAM II** | |
| | | **Ectoparasites** | |
| Wednesday | November 17th | Parasitic insects: Sucking Lice | Chapter 36 pg 573-579 |
| Friday | November 19th | Parasitic insects: Fleas | Chapter 38 |
| Monday | November 22nd | Plague | Article |
| Wednesday | November 24th | *No classes- Thanksgiving Break* | |

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| Friday | November $26^{th}$ | *No classes- Thanksgiving Break* | |
| Monday | November $29^{th}$ | Parasitic Insects: Mosquitoes | Chapter 39 pg 601-610 |
| Wednesday | December $1^{st}$ | Transmission Blocking Vaccines | Article |
| Friday | December $3^{rd}$ | Ticks | Chapter 41 pg 639-648 |
| Monday | December $6^{th}$ | **EXAM III** | |
| Wednesday | December $8^{th}$ | Review Session | |
| **TUESDAY** | December $14^{th}$ | **FINAL EXAM 5:30PM FJ-C** | |

This syllabus will be followed closely, but it is subject to change depending on how the course progresses.

## Grading Policy

Total available points are 500 distributed as follows:

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|---|---|
| 3 EXAMS (100 POINTS EACH) | 300 |
| Presentation | 50 |
| Written Assignment | 50 |
| FINAL EXAM (CUMULATIVE) | 100 |
| | 500 |

**** Moodle Exam Due**: this exam will be averaged out with your lowest exam grade excluding the final exam.

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|---|---|---|---|
| A | = | 100 –93% | 500 – 465 pts |
| A- | = | 92–90% | 460 – 450 pts |
| B+ | = | 89–86% | 445 – 430 pts |
| B | = | 85–83% | 425 – 415 pts |
| B- | = | 82–80% | 410 – 400 pts |
| C+ | = | 79–76% | 395 – 380 pts |
| C | = | 75–73% | 375 – 365 pts |
| C- | = | 72–70% | 360 – 350 pts |
| D | = | 69–60% | 345 – 300 pts |
| F | = | ≤ 59% | ≤ 295 pts |

**Note:** There will be no curve and no exam will be dropped. If you fail to attend an exam you will receive a zero grade for that exam. Make up exams will only be given before the exam date and will include all the material specified in the syllabus. Please let me know at least one week in advance if you are going to need the exam date changed.