Instructor Information:
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Office hours: TBA

Course Description
In this course, we will examine parasites and parasitism, emphasizing the influence of parasites on the ecology and evolution of free-living species, and the role of parasites in global public health.

Learning Outcomes:
At the end of the course, students will be able to:

1. Demonstrate through tests and on writing assignments an understanding of parasitism, including the diversity of symbiotic associations and their populational, dynamic and contextual nature.
2. Demonstrate through tests and on writing assignments an understanding of views of parasites and parasitism, including social and cultural perceptions of parasitism, and varying views of parasitism among scientists from different disciplines.
3. Demonstrate through quizzes, class activities and tests an understanding of the taxonomic diversity of parasites, and the universality and variety of symbiotic associations.
4. Demonstrate familiarity with common protozoan and helminth parasites of humans as well as some related parasites of livestock and companion animals on quizzes, class activities and tests.
5. Analyze case studies and scenarios, interpret data and use evidence to address problems in parasitology, including clinical, public health and biological issues.
6. Analyze research challenges in diagnosis, treatment and control of parasitic infections in humans and in veterinary contexts through examination of evidence.
7. Demonstrate an understanding of the roles of parasites and of infectious diseases on the ecology and evolution of their hosts, and of the role of symbiosis in the evolution of life on earth.

Broad thematic divisions in the course:
- Nature of symbiosis, parasitism and parasites (learning outcomes 1-3)
- Helminth parasites: basic knowledge and current challenges (learning outcomes 3-6)
- Protozoan parasites: basic knowledge and current challenges (learning outcomes 3-6)
- Basic biomedical concepts related to pathogenesis, diagnosis and treatment of parasite infections and basic public health concepts related to outbreak investigation, prevention and control of in parasite infections (learning outcomes 4-6)
- Ecological and evolutionary roles of parasites (learning outcomes 5, 7)
Accommodations, Diversity and Inclusion:

**Accommodations for persons with disabilities:** SUNY Geneseo will make reasonable accommodations for persons with documented physical, emotional, or cognitive disabilities. Accommodations will be made for medical conditions related to pregnancy or parenting. Requests for accommodations including letters or review of existing accommodations should be directed to the Office of Disability Services in Erwin Hall 22 or disabilityservices@geneseo.edu or 585-245-5112. Students with letters of accommodations should submit a letter to each faculty member at the beginning of the semester and discuss specific arrangements. Additional information on the Office of Disability Services is available at www.geneseo.edu/dean_office/disability_services.

**Accommodations for English language learners:** individuals who have been using English as a primary language of instruction for 6 years or fewer and are actively working to improve English fluency may receive extra time on some tests. Please see me for assistance if this applies.

**Diversity and inclusion:** Parasitology is about people as well as about parasites, and the use of inclusive language contributes to creating an environment conducive to learning for everyone. This will include use of individuals’ preferred names and pronouns, use of neutral pronouns, use of individuals’ preferred group descriptors, and using language that is people-centered and non-discriminatory. Especially critical in parasitology is the use of non-judgmental descriptions of human behavior. Inclusive language is dynamic and socially constructed, and requires communication and commitment to growth as we learn from each other.

**Required Texts And Materials**

**Required text:**

We will make extensive use of a free online resource from the Centers for Disease Control, DPDx Laboratory Identification of Parasites of Public Health Concern, [https://www.cdc.gov/dpdx/](https://www.cdc.gov/dpdx/).

**Additional required materials:** You will need to print your own laboratory reference guide for each lab test. This will require approximately $10 in printing costs. This cost is offset by the low cost of the textbook and by not having a separate laboratory manual.

Additional articles, notes and case studies will be available on Canvas. Consult the syllabus and the overview in each weekly module for specific information about what to read before class, and what to bring with you to class (either downloaded or printed). Bringing your laptop to class each day is strongly recommended.

**Evaluation**

- **Day to day:** formative quizzes, homework, participation, summative quizzes 15%
- **Thematic book review** 15%
- **Mini tests (4@5% each)** 20%
- **Tests (2@15%)** 30%
- **Laboratory (tests, 3@5%, notebook and day-to-day activities 5%)** 20%
Additional information about evaluation:

**Overview:** This class uses a variety of assessments designed to deepen understanding and promote learning. If you have questions about the role or function of any assignment, please ask.

**Day to day quizzes and activities:** Details matter in Parasitology, and you need some familiarity with particular parasites to contribute actively to discussion in class. **Reading quizzes** ensure that you are familiar with foundational information before class discussion. There will be a quiz each week on particular parasites, emphasizing the life cycle. Questions are mostly multiple choice or true/false, and they may be online or on paper, and either before or during class. Some quizzes may be completed both individually and with peers. Watch weekly announcements for instructions. Late completion requires coming to office hours at the earliest reasonable opportunity, and providing a reasonable explanation for your absence. will most likely be 14 quizzes, with your lowest score dropped and a small bonus for completing all of the quizzes.

**Assignments** fall into two categories, preparatory and reflective. **Preparatory homework assignments** are short, one-paragraph assignments usually done outside of class to prepare for the following class, and address readings that do not lend themselves to objective questions. These are also intended to help you prepare for class. If you know you will be absent for class, these should be completed early and turned in before class. Opportunities to complete these at a later date will be very limited and require explanation. **Reflective assignments** look back on earlier work and have more flexible deadlines, but generally cannot be completed after the test. There will be around 18 homework assignments. Please note that there may be additional or alternative adjustments to due dates for students working with the Offices of the Dean of Students or Disabilities Services; these arrangements will be made on a case-by-case basis.

**Mini-tests:** These quizzes are integrative “practice runs” for the final exam and may include multiple choice, true/false, short answer and short essay questions, as well as individual and group components. There will be 5 of these quizzes. Day-to-day activities and mini-tests provide models of questions; most questions will require you to use information learned through the reading and in class in novel ways.

**Tests:** There will be two larger tests that may include multiple choice, multiple select, justified true/false, short answer and essay questions. Some or all may be taken online in class with a secure lockdown browser. Day-to-day activities and mini-tests provide models of questions; most questions will require you to use information learned through the reading and in class in novel ways.

**Integrative book review:** This is a larger written assignment requiring that you read a book about parasites or parasitology, and connect it to major themes and concepts from this class. There are two alternative deadlines for this assignment. There are very limited options for extensions for the first deadline, and you may have to submit your paper on the second deadline if you miss the first.
**Laboratory:** The laboratory represents one-quarter of your grade. The laboratory grade includes three practical tests and your laboratory notebook/resource that you use during the practical tests (20%) as well as quizzes and in-class assignments (5%).

### Tentative Schedule of Topics and readings

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPICS &amp; READINGS</th>
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<tbody>
<tr>
<td>Week 1:</td>
<td>1/20 Martin luther king day, no class</td>
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<td></td>
<td>1/21 no class</td>
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<td>1/22 introductions &amp; syllabus; definitions of parasitism. Reading: a vein is a</td>
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<td>river. Homework assignment to bring to class.</td>
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<td></td>
<td>1/28 Lab: Amebas</td>
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<td>1/29 What are parasites, Chapter 1; A pig from Jersey. Quiz in class and</td>
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<td></td>
<td>homework assignment.</td>
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<td>Week 3:</td>
<td>2/3 Flagellates, Chapter 4. Quiz in class.</td>
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<td>2/4 Lab: Flagellates</td>
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<td></td>
<td>2/5 Gunn &amp; Pitt: Pathology (part only). Bogitsh et al., Parasite-Host</td>
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<td>interactions (part only). Homework assignments and quiz.</td>
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<td>Week 4:</td>
<td>2/10 Leishmanias (Chapter 5, part only); quiz</td>
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<td>2/11 Thomas: Lab: Leishmanias and trypanosomes</td>
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<td>2/12 Are the pros as well as cons to being parasitized? Homework.</td>
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<td>Week 5:</td>
<td>2/17 Trypanosomes, Chapter 5 (part only). Quiz.</td>
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<td>2/18 Lab: Practical test</td>
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<td></td>
<td>2/19 Loker &amp; Hofkin: Parasite control (chemotherapy); Herron &amp; Freeman, Virulence.</td>
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<td></td>
<td>Homework.</td>
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**Tentative schedule, continued**

### Week 6:
- **2/24** plasmodium and babesia
- **2/25** lab: malarias, babesia, and relatives.

### Week 7:
- **3/2** Misc. protozoa, Chapter 7 (part). *Cryptosporidium* and *Cyclospora, Toxoplasma*. Quiz.
- **3/3** Lab: Misc. protozoa

### Week 8: catch up and review
- **3/9** Chapter 7 (part) *Balantidium, Blastocystis, Pneumocystis*; Catch up and review; Quiz.
- **3/10** Lab: start nematodes
- **3/11** Lecture test – protozoa
- **3/13** Integrative assignment – first due date

### Week 10
- **3/30** Nematodes (chapter 8, part): Ascaris, Trichuris, hookworms. Quiz.
- **3/31** Lab: practical test
- **4/1** Parasites and sexual selection: Parasites and picking the perfect partner. Homework and quiz.
Tentative Schedule, continued

Week 11
- 4/6 filariae (chapter 9). Quiz.
- 4/7 lab: filariae; start cestodes

Tentative schedule, continued

Week 12
- 4/13 Cestodes, Chapter 10. Adult tapeworm infection. Quiz.
- 4/14 Lab: Cestodes

Week 13
- 4/20 Cestodes, continued: larval tapeworm infection. Quiz
- 4/21 Lab: Trematodes lecture quiz
- 4/22 GREAT DAY, no classes

Week 14
- 4/28 Lab: Trematodes and review
- 5/1 Integrative assignment – second due date

Week 15
- 5/5 Lab: Practical test & quiz
- 5/6 Catch up and review
- 5/8 Final Exam 12:00-3:20

Important Note: Readings, homework and assignments are subject to change. A more complete and current guide to weekly readings including areas of emphasis will be available in the announcements each week in Canvas.
Important policies

Copyright: Many of the materials that are provided in this course have been created by Dr. Muench, or by the publisher of our textbook. Students would be best to assume that all course materials are protected by copyright, and reproduction of this material is prohibited without the author’s consent. Thus, you are prohibited from sharing or posting copyrighted material to any websites outside our Canvas course site. You are also prohibited from reproducing material to be shared with more limited groups such as student organizations. Be aware that United University Professionals, the union representing faculty on this campus, is seeking to take legal action against these and other sites, and that posting or selling copies of materials to such sites may put you in legal jeopardy.

Communication: Set up Canvas to provide daily updates via email or text in order to ensure that you receive any updates or changes to the schedule in a timely manner. E-mail is usually the fastest way to get in touch with me. Please include your name (not just your email address) and the course name or number in all e-mails sent to me because of the large number of students with whom I interact in the course of my job.

Professional behavior in class: Your active participation in class activities contributes not only to your own learning but also to the learning of others in the class. Attendance in class is expected; plan to arrive on time and stay throughout the class. Use laptops, cell phones and other technology only for class-related purposes during class. In lab, take frequent breaks to prevent eye strain, but plan to use the entire scheduled laboratory time for reviewing slides and other class activities.

Missing lecture or lab, making up quizzes and in-class assignments: Class is participatory, and frequent absences will affect learning. Because discussion is an important component of class, your absences affect the learning experience for others as well as yourself. Quizzes, homework and in-class activities are intended to help prepare for class and to process new information as you go; while you can sometimes make up the points, you are missing out on the learning experience.

Missing laboratory: Although you will be able to review slides at your own convenience, you will find that it is helpful to work through the slides with your group during class time. Some quizzes and activities in lab have a practical component, and are difficult to make up at another time. Even if you are excused or are provided with a substitute assignment, you will not have the same learning experience. For these reasons, lab attendance is even more critical than lecture attendance.

Making up laboratory practical tests is extremely difficult: Laboratory practical tests are time-consuming and difficult to set up, and difficult to keep secure. You should make every effort to avoid missing these tests, and documentation of valid reasons will be required in order to take the test at another time. In the event that you must miss a practical exam, you may have to take an exam that is substantially different from that taken by other students. For similar reasons, there are also some necessary limitations on the accommodations that can be provided for students with disabilities. Students seeking accommodations should discuss the issue with me early in the semester to discuss what is and is not possible, and seek additional support from the Office of Disabilities Services.
**Academic dishonesty:** Cheating on exams and plagiarism are serious breaches of trust and will be treated accordingly. Cheating here is defined as taking a test under substantially different conditions from those for other students. This includes both collaboration and use of notes beyond what is specified in the instructions provided. Taking an online test in a location other than the classroom (or Testing Center) may be treated as cheating, as will facilitating this by providing a password to another student. Plagiarism is defined here as ANY form of misrepresentation of the authorship or originality of your work. Plagiarism includes (but is not limited to) copying others’ work directly (including internet sources), modifying only minimally the work of others, presenting ideas without citing the original sources, turning in a paper written by someone else or turning in the same work in more than one course. Because academic dishonesty is defined in detail here, a claim of ignorance will not serve to excuse the behavior. **Cheating on a test or plagiarism will result in a failing grade on the test or assignment, and may result in a failing grade for the course.**

**Appealing grades:** Any graded work may be submitted for re-evaluation along with a written appeal. Appeals should be submitted promptly, **within one week** of when the work is returned to you. The appeal should contain a brief **written** explanation of your concerns, including your understanding of the test question or assignment directions and why you believe your work meets the requirements. When you turn in the work for appeal, we will schedule a conference to go over it as well.

**Explanation of final grades:** Because there are more points available to earn than are needed to earn 100%, there is flexibility in how you earn your grade. Grades are determined using the scale presented below, with rounding to the nearest whole number, and **almost always without any adjustment or curve**. There are no quotas for particular letter grades, and helping others can only help you, and cannot hurt your grade in any way. The point distribution is as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
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<tbody>
<tr>
<td>A</td>
<td>(&gt;93%)</td>
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<tr>
<td>A-</td>
<td>(90-92%)</td>
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<tr>
<td>B+</td>
<td>(87-89%)</td>
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<tr>
<td>B</td>
<td>(83-86%)</td>
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<tr>
<td>B-</td>
<td>(80-82%)</td>
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<tr>
<td>C+</td>
<td>(77-79%)</td>
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<tr>
<td>C</td>
<td>(73-76%)</td>
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<tr>
<td>C-</td>
<td>(70-72%)</td>
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<tr>
<td>D</td>
<td>(60-69%)</td>
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<td>E</td>
<td>(&lt;60%)</td>
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**For your consideration:**

**Important disclaimer:** Even though we will discuss diagnosis throughout the course, you will not be qualified to diagnose parasitic diseases on completion of this course. It is especially important not to use the class as an opportunity for self-diagnosis.

**Instructional format:** Transfer of information through lecture will make up only a portion of class time, and small group discussion or discussion with the full class will make up the rest. You must obtain your first exposure to new ideas outside of class through independent reading and other assignments to make meaningful discussion possible.

**Working in groups:** In this class, you must work in groups in class. You will seldom have to meet with your groups outside of normal class time.

**Topics included:** Parasitism is the predominant trophic mode on earth, and the range of organisms we could examine is enormous. In this course, we will focus primarily on protozoa,
helminths and arthropods that parasitize animal hosts including humans. Viruses, prokaryotes, fungi and plants are largely excluded.

**Difficult discussion topics:** In this class, you will see some graphic and disturbing images. Understanding disease transmission requires discussing bodily functions and behaviors that you may not normally discuss in public. Treating others with respect, both those present in the room, and those portrayed in images, videos and case studies, is essential for learning.

**Evolution:** The Theory of Evolution provides the central explanatory framework in biology, and will be an important theme running throughout the Parasitology course. I welcome the opportunity to discuss any questions or concerns you may have about evolution, including those related to religious belief.

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