

HUMAN PARASITOLOGY LABORATORY

Biology 546

T 8:30-10:20 AM

Ackert Hall, Room 228

Spring 2024

Instructor: Dr. Kristin Michel

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Phone: (785) 532 0161

Office Hours: T 10:30-11:30 AM and F 10-11 AM, Chalmers 267. Or by appointment, in person or via Zoom. The easiest way to set up an appointment is to talk to me either before, during or after class, or by email.

TA: Ashmita Pandey

Email: ashmitap@ksu.edu

Laboratory Manual: The pdf of the lab manual is available on Canvas online. Please read each class section before the beginning of class and bring it to every class period.

Objective:

This laboratory is designed to teach students the basics of identification of common eukaryotic parasites of humans.

Pre- and Co-requisites:

This course is targeted for sophomore/junior students. At least one course in General Biology is required as a prerequisite. In addition, Biology 545 (Human Parasitology lecture) is **required** either as a prerequisite or co-requisite.

Outline:

Just as the lecture, the laboratory class is divided into four main groups: Platyhelminthes [Digenes (flukes/trematodes) and Cestodes (tapeworms)], Nematodes, Protozoa, and Arthropods. The labs have been designed to keep fairly close pace with the lectures, at least whenever possible. During each class period students will examine specimens by microscopy using dissecting and compound microscopes. Students will be required to work in groups of 2-3 and share an assigned slide box containing just under 100 permanently preserved specimens. We do not have enough slide boxes or microscopes for students to work alone. So, early during the first class meeting, please pair up with one of your colleagues.

During some laboratories, demonstrations may be set up to supplement the slide collections. These demonstrations generally consist of specimens either too large, too valuable, or too rare to be included in the slide boxes.

Additional to the material provided during class, all students are expected to have reviewed the on-line image tutorial, which can be found in the content section on K-State

online via a link on the “Human Parasitology website”. Additional images that should also be useful can be found at the Animal/Human Parasitology image library, available through the same website.

Course schedule (also listed in the calendar section on K-State Canvas calendar):

DATE	Day	Class #	Topic
16-Jan	Tuesday	1	Introduction and slide box assignment
23-Jan	Tuesday	2	Digenes
30-Jan	Tuesday	3	Cestodes
6-Feb	Tuesday	4	Digenes & Cestodes (Review)
13-Feb	Tuesday	5	***LAB EXAM 1*** (9:30AM-10:20AM) 60 points, Digenes and Cestodes
20-Feb	Tuesday	6	Nematodes
27-Feb	Tuesday	7	Nematodes (Review)
05-Mar	Tuesday	8	***LAB EXAM 2*** (9:30AM-10:20AM), 60 points, Nematodes
12-Mar	Tuesday		Spring Break
19-Mar	Tuesday	9	Protozoa (flagellates)
26-Mar	Tuesday	10	Protozoa (Amoebae)
2-Apr	Tuesday	11	Protozoa (Apicomplexa, ciliates, misc. groups)
6-Apr	Tuesday	12	Protozoa (Review all phyla)
16-Apr	Tuesday	13	***LAB EXAM 3*** (9:30AM-10:20AM), 60 points, Protozoa
23-Apr	Tuesday	14	Arthropoda
30-Apr	Tuesday	15	***LAB EXAM 4*** (9:30 AM-10:20 AM), 60 points, Arthropoda

05-Feb last day to drop with 100% refund; 12-Feb last day to drop with 50% refund; 20-Feb last day to drop without a W

Exams:

Four exams are scheduled for this laboratory. Each exam will be at **9:30 - 10:20 PM**. These will be practical exams, where students cycle through 15 stations and view a specimen at each station (most often through a microscope). There will be two, 2 point questions pertaining to a specimen at each station. The first question will generally ask "what is the species?" The second question will ask about some aspect of parasite biology (i.e. "what is the intermediate host," "where in the host are the adult stages located," etc.). A sample exam is posted on the lab website in Canvas. Separate practicals will NOT be set up for students who miss exams.

Students will be given the list of scientific species names covered in each section, which can be used during the exam.

Per University policy, rescheduling of the exam can be achieved if you have two or more other exams in courses with a catalog number LOWER than 545 within 24 h of the Parasitology final. Please contact me **PRIOR** to the exam if you need to reschedule.

Should you miss an exam due to a valid excuse such as illness, you will be permitted a make-up exam within 1 week of returning to class.

If you have scheduled events that take you out of town on the day of an exam, for instance athletics, military exercises, etc., please make arrangements **ahead of time** and exams can be taken early.

Attendance:

Attendance is required in this laboratory course. Students are allowed to miss two class periods, but only when presenting a valid excuse (illness, accident, etc. as confirmed through office of student life). Attendance is part of the grade, accounting for 22 points total (2 for each class period). Arriving more than 10 minutes late to class, will be counted as tardiness, with a 20% deduction of the attendance points.

Grading policy:

Grading will be 90% (A), 80% (B), 70% (C), and 60% (D). The grades are likely not to be curved.

Academic Honesty:

Kansas State University has an Honor and Integrity System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor and Integrity System. The policies and procedures of the [Honor and Integrity System](#) apply to all full and part-time students enrolled in undergraduate and graduate courses on-campus, off-campus, and via distance learning. A component vital to the Honor and Integrity System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

Students with Disabilities:

At K-State it is important that every student has access to course content and the means to demonstrate course mastery. Students with disabilities may benefit from services including accommodations provided by the Student Access Center. Disabilities can include physical, learning, executive functions, and mental health. You may register at the [Student Access Center](#) or to learn more contact:

Manhattan/Olathe/Global Campus – Student Access Center
accesscenter@k-state.edu
785-532-6441

Students already registered with the Student Access Center please request your Letters of Accommodation early in the semester to provide adequate time to arrange your approved academic accommodations. Once SAC approves your Letter of Accommodation it will be e-mailed to you, and your instructor(s) for this course. Please follow up with your instructor to discuss how best to implement the approved accommodations.

Expectations for Classroom Conduct:

All student activities in the University, including this course, are governed by the [Student Judicial Conduct Code](#) as outlined in the Student Governing Association [By Laws](#), Article V, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.

AI Use in this class:

You may use Artificial Intelligence (AI) tools to assist your learning in this course, including idea generation and grammar assessments for written assignments. It is your responsibility, however, to be transparent in your AI use. To that end, you are required to read and edit, thoroughly, your assignment submissions, particularly any items created using AI.

For every assignment submission, you will include a 150-300 word AI Acknowledgement that includes the following four components:

1. A citation for the tool/s used, as follows: “Title of AI Tool. Prompt or brief description of topic of search depending on tool. Date of creation.”
2. An explanation of why you decided to use the tool(s)
3. A description of how you used the tool(s) to manage assignment requirements.
4. A reflection on your experience using the tool, exploring what worked or didn’t, and acknowledging limitations of the tool for this assignment, potential biases, etc.

Using an AI tool to generate assignment content without proper attribution would be a violation of the [K-State Honor Pledge](#).

Mutual Respect and Inclusion in K-State Teaching and Learning Spaces

At K-State, faculty and staff are committed to creating and maintaining an inclusive and supportive learning environment for students from diverse backgrounds and perspectives. K-State courses, labs, and other virtual and physical learning spaces promote equitable opportunity to learn, participate, contribute, and succeed, regardless of age, race, color, ethnicity, nationality, genetic information, ancestry, disability, socioeconomic status, military or veteran status, immigration status, Indigenous identity, gender identity, gender expression, sexuality, religion, culture, as well as other social identities.

Faculty and staff are committed to promoting equity and believe the success of an inclusive learning environment relies on the participation, support, and understanding of all students. Students are encouraged to share their views and lived experiences as they relate to the course or their course experience, while recognizing they are doing so in a learning environment in which all are expected to engage with respect to honor the rights, safety, and dignity of others in keeping with the K-State Principles of Community <https://www.k-state.edu/about/values/community/>.

If you feel uncomfortable because of comments or behavior encountered in this class, you may bring it to the attention of your instructor, advisors, and/or mentors. If you have questions about how to proceed with a confidential process to resolve concerns, please contact the Student Ombudsperson Office. Violations of the student code of conduct can be reported here <https://www.k-state.edu/sga/judicial/student-code-of-conduct.html>. If you experience bias or discrimination, it can be reported here <https://www.k-state.edu/report/discrimination/>.

Discrimination, Harassment, and Sexual Harassment

Kansas State University is committed to maintaining academic, housing, and work environments that are free of discrimination, harassment, and sexual harassment. Instructors support the University’s commitment by creating a safe learning environment during this course, free of conduct that would interfere with your academic opportunities. Instructors also have a [duty to report](#) any behavior they become aware of that potentially

violates the University's policy prohibiting discrimination, harassment, and sexual harassment, as outlined by [PPM 3010](#).

If a student is subjected to discrimination, harassment, or sexual harassment, they are encouraged to make a non-confidential report to the University's [Office for Institutional Equity \(OIE\)](#) using the [online reporting form](#). Incident disclosure is not required to receive resources at K-State. Reports that include domestic and dating violence, sexual assault, or stalking, should be considered for reporting by the complainant to the [Kansas State University Police Department](#) or the [Riley County Police Department](#). Reports made to law enforcement are separate from reports made to OIE. A complainant can choose to report to one or both entities. Confidential support and advocacy can be found with the [K-State Center for Advocacy, Response, and Education \(CARE\)](#). Confidential mental health services can be found with [Lafene Counseling and Psychological Services \(CAPS\)](#). Academic support can be found with the [Office of Student Support and Accountability \(OSSA\)](#). OSSA is a non-confidential resource. OIE also provides a [comprehensive list of resources](#) on their website. If you have questions about non-confidential and confidential resources, please contact OIE at equity@ksu.edu or (785) 532-6220.

Copyright Notification:

Copyright 2024 (Kristin Michel) as to this syllabus, laboratory manual, and all introductory lectures. During this course, students are prohibited from selling notes to or being paid for taking notes by any person or commercial firm without the expressed written permission of the professor teaching this course. In addition, students in this class are not authorized to provide class notes or other class-related materials to any other person or entity, other than sharing them directly with another student taking the class for purposes of studying, without prior written permission from the professor teaching this course.

Academic Freedom:

Kansas State University is a community of students, faculty, and staff who work together to discover new knowledge, create new ideas, and share the results of their scholarly inquiry with the wider public. Although new ideas or research results may be controversial or challenge established views, the health and growth of any society requires frank intellectual exchange. Academic freedom protects this type of free exchange and is thus essential to any university's mission.

Moreover, academic freedom supports collaborative work in the pursuit of truth and the dissemination of knowledge in an environment of inquiry, respectful debate, and professionalism. Academic freedom is not limited to the classroom or to scientific and scholarly research, but extends to the life of the university as well as to larger social and political questions. It is the right and responsibility of the university community to engage with such issues.

Weapons Policy:

Kansas State University prohibits the possession of firearms, explosives, and other weapons on any University campus, with certain limited exceptions, including the lawful concealed carrying of handguns, as provided in the University [Weapons Policy](#).

You are encouraged to take the [online weapons policy education module](#) to ensure you understand the requirements of the policy, including the requirements related to concealed carrying of handguns on campus. Students possessing a concealed handgun on campus must be lawfully eligible to carry and either at least 21 years of age or a licensed individual who is 18-21 years of age. All carrying requirements of the policy must be observed in this class, including but not limited to the requirement that a concealed handgun be completely hidden from view, securely held in a holster that meets the specifications of the policy, carried without a chambered round of ammunition, and that any external safety be in the “on” position.

If an individual carries a concealed handgun in a personal carrier such as a backpack, purse, or handbag, the carrier must remain within the individual’s exclusive and uninterrupted control. This includes wearing the carrier with a strap, carrying or holding the carrier, or setting the carrier next to or within the immediate reach of the individual.

During this course, you will be required to engage in activities, such as (INSERT YOUR EXAMPLE), that may require you to separate from your belongings, and thus you should plan accordingly.

Each individual who lawfully possesses a handgun on campus shall be wholly and solely responsible for carrying, storing and using that handgun in a safe manner and in accordance with the law, Board policy and University policy. All reports of suspected violation of the weapons policy are made to the University Police Department by picking up any Emergency Campus Phone or by calling 785-532-6412.

Campus Safety:

Kansas State University is committed to providing a safe teaching and learning environment for student and faculty members. In order to enhance your safety in the unlikely case of a campus emergency make sure that you know where and how to quickly exit your classroom and how to follow any emergency directives. To view additional campus emergency information go to the University's main page, www.k-state.edu, and click on the Emergency Information button, located at the bottom of the University’s main page.

Safe Zone:

I am part of the SafeZone community network of trained K-State faculty/staff/students who are available to listen and support you. As a SafeZone Ally, I can help you connect with resources on campus to address problems you face that interfere with your academic success, particularly issues of sexual violence, hateful acts, or concerns faced by individuals due to sexual orientation/gender identity. My goal is to help you be successful and to maintain a safe and equitable campus.

Student Resources:

K-State has many resources to help contribute to student success. These resources include accommodations for academics, paying for college, student life, health and safety, and others. Check out the [Student Guide to Help and Resources: One Stop Shop](#) for more information.

Mental Health:

Your mental health and good relationships are vital to your overall well-being. Symptoms of mental health issues may include excessive sadness or worry, thoughts of death or self-harm, inability to concentrate, lack of motivation, or substance abuse. Although problems can occur anytime for anyone, you should pay extra attention to your mental health if you are feeling academic or financial stress, discrimination, or have experienced a traumatic event, such as loss of a friend or family member, sexual assault or other physical or emotional abuse.

If you are struggling with these issues, do not wait to seek assistance.

- Kansas State University [Counseling and Psychological Services](#) offers free and confidential services to assist you to meet these challenges.
- [Lafene Health Center](#) has specialized nurse practitioners to assist with mental health.
- The [Division of Academic Success and Student Affairs](#) can direct you to additional resources.
- [K-State Family Center](#) offers individual, couple, and family counseling services on a sliding fee scale.
- [Center for Advocacy, Response, and Education \(CARE\)](#) provides free and confidential assistance for those in our K-State community who have been victimized by violence.

K-State IFSA Land Acknowledgement:

As the first land-grant institution established under the 1862 Morrill Act, we acknowledge that the state of Kansas is historically home to many Native nations, including the [Kaw](#), [Osage](#), and [Pawnee](#), among others. Furthermore, Kansas is the current home to four federally recognized Native nations: The [Prairie Band Potawatomie](#), the [Kickapoo Tribe of Kansas](#), the [Iowa Tribe of Kansas and Nebraska](#), and [Sac and Fox Nation of Missouri in Kansas and Nebraska](#).

Many Native nations utilized the western plains of Kansas as their hunting grounds, and others – such as the Delaware – were moved through this region during Indian removal efforts to make way for White settlers. It's important to acknowledge this, since the land that serves as the foundation for this institution was, and still is, stolen land.

We remember these truths because K-State's status as a land-grant institution is a story that exists within ongoing settler-colonialism, and rests on the dispossession of Indigenous peoples and nations from their lands. These truths are often invisible to many. The recognition that K-State's history begins and continues through Indigenous contexts is essential.

Technical Difficulties:

The [K-State IT Help Desk](#) is there to assist you with questions regarding the technology used for your course. Phone: 785-532-7722 or toll-free 1-800-865-6143, Email: helpdesk@k-state.edu

If you have issues with your technology, please contact them first, they are the technology experts. If you miss a deadline due to technical difficulties, make sure it is

documented through communication with the IT Help Desk, then exceptions may be made on a case-by-case basis.