



Course Information

Tropical Medicine

BIOL 4122

Spring 2026/QERC

Instructor Information:

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Office Hours: Online/Zoom

Course Description

This course introduces students to the most important bacterial, viral, parasitic, and mycotic pathogens in the tropics and to clinical features of the associated diseases. The course will focus on diseases not ordinarily covered in depth in a microbiology course, such as malaria, tuberculosis, leprosy, leishmaniasis, schistosomiasis, helminth infections, among others. Topics covered will include geographic distribution, etiology, transmission, pathogenesis, clinical features of relevant diseases, immunologic considerations, diagnosis, histological identification of medically important parasites, treatment, control and the social determinants of health. The class will also look into the Costa Rican health system and the social determinants of health within developing nations. Also, human behavior associated with the transmission of infection and of local perceptions of the disease will be considered.

Learning Outcomes

Upon successful completion of the course, students will be able to:

- Identify the most common tropical diseases.
 - Describe their pathways of transmission
 - Explain their pathology

- o Articulate how these diseases influence communities both socially and economically
- Summarize current diagnostic and treatment methods.
- Microscopically identify many of the causative medically important parasites.
- Evaluate these control mechanisms on their effectiveness.
- Articulate the relationships between the health of the environment and human health.
- Explore the delivery of medicine, the effect of health systems, and social causes of poor health in the rural tropics.
- Observe health care practices in the tropics.

Course Materials

Hotez, P.J. 2008. *Forgotten People, Forgotten Diseases*. ASM Press, Washington DC and Journal articles and excerpts provided by the instructor.

Important Journal Periodicals for this course are:

[PAHO](#)

[PLOS Neglected Tropical Disease](#)

[Parasites and Vectors](#)

Grade Determination

Your course grade will be determined by the following:

- o Paper - Comparison on 5 points of difference between Costa Rica and US healthcare (20 points)
- o Paper - Diseases and epidemics that have affected Costa Rica over the past 10 years (20 points)
- o Paper - Critical analysis of socialized medical care in Costa Rica (40 points)
- o Microscopic identification of medical histology specimens (20 points) (see list below of specimens in the Histology section)
- o Presentation on a tropical disease (50 points)
- o Case-Based Group Activity (20 points)
- o Discussion Forums x 4 - *Forgotten People, Forgotten Diseases* (10 points each x 4 = 40 points total)
- o Final exam (90 points)
- o Total = 300 points

Grades will be assigned, based upon the following scale: 90.00 - 100% = A; 80.00 - 89.99% = B; 70.00- 79.99% = C; 60.00 - 69.99% = D; 59.99% or less= F. Cheating or plagiarism will result in a failing 0% for that assignment/test (it will also be reported to the Academic Dean). A second time of cheating will result in a failing grade for the course. Your grade will be posted to your **“Canvas” Grade Book** as soon as the test is graded.

Five points Comparison Between CR and USA Healthcare system

This is a 500-word double-spaced paper excluding references (APA) where you will look into Costa Rica's healthcare system and compare it to the US's. Your paper should explain the system currently in operation in CR. Tentatively you will be able to visit healthcare facilities while in CR. Include interviews with CR citizens, which may include health care professionals, indigenous tribal members, foreigners living in CR, and/or undocumented immigrants.

Paper Disease & Epidemics

Write a Paper (500 words, double-spaced, excluding references (APA)) where you will report/describe the diseases and epidemics that have affected Costa Rica over the past 10 years.

Disease Presentation:

Choose a tropical disease (sign up on Google Doc by February 15) and prepare a 10-15 minute powerpoint presentation to give during your professor's time in Costa Rica. Include the history, global prevalence, etiology, pathology, clinical presentation (include photos) how it is diagnosed, and treatment methods in your presentation. Also, discuss the prevalence of this disease in the tropics, if applicable, and how you would develop a treatment plan for this disease considering social and economic implications.

Histology:

The Medical Parasitology Slide/CD-ROM Set contains some of the following slides. Students' knowledge of parasitology will be enriched with this set of slides and the award-winning CD-ROM *A Colour Atlas of Medical Parasitology* by Cooke and Stewart. The CD-ROM's informative text and images include examples of protozoa, nematodes, trematodes, and cestodes that commonly infect humans. Microscope slides will also be reviewed in person during the tropical medicine course.

- *Giardia lamblia* Trophozoites
- *Leishmania donovani*
- *Ancylostoma duodenale*
- *Trypanosoma cruzi*
- *Plasmodium falciparum*
- *Schistosoma mansoni*, Female
- *Schistosoma mansoni*, Male
- *Schistosoma mansoni* Eggs
- *Schistosoma mansoni* Sporocysts
- *Taenia solium* Cysticercus, Sec
- *Taenia solium* Cysticercus, Wm
- *Taenia solium* Eggs
- *Ascaris lumbricoides* Male And Female, Cs
- *Ascaris lumbricoides* Eggs
- *Onchocerca volvulus* Female

- *Trichinella spiralis* Female
- *Trichinella* Encysted Larvae, Wm
- *Trichinella* Encysted Larvae, Sec
- Trichuris
- Trichuris Eggs
- *Vibrio cholerae*
- *Mycobacterium leprae*
- *Onchocerca volvulus*
- *Leptospira*
- *Tunga penetrans*

A Colour Atlas Of Medical Parasitology Cd-Rom

Critical Analysis Paper

Write a critical analysis of the socialized medical health care program of Costa Rica. Your paper should explain the system currently in operation in CR, compare and contrast the public and private options available to the lower, middle and upper class CR citizens. Include interviews with CR citizens, which may include health care professionals, indigenous tribal members, foreigners living in CR, and/or undocumented immigrants. You may include a particular disease found to be a challenge in the tropics when you discuss the system. Also, provide a critical analysis of this system and its positive and negative attributes. Your paper is due **no later than Thursday, April 24**. Digitally submit this paper in a Word document; double spaced, "Normal" 1" margins, with your name, class and date in a Header. The paper must not exceed 1500 words.

Discussion Forums

We will be reading the book *Forgotten People, Forgotten Diseases* by Peter Hotez, M.D., Ph.D. throughout this semester. The discussion forums will cover 3 chapters worth of reading and will require a thoughtful response in addition to 1 reply to a classmate. This book transforms the tropical medicine course from a purely academic subject into a practical, ethical, and globally relevant discipline that better prepares students to meet real health challenges.

Class Discussions:

We will have a class discussion when I am in Costa Rica. You should write down specific things that you would like to discuss in advance. I will also provide some questions for discussion a few days before my visit.

Final:

There will be a comprehensive final.

Course Policies and Guidelines

SNU believes there is a strong relationship between class attendance and academic progress. Regular class attendance, therefore, is expected of all SNU students. Please

read the Class Attendance statement in the SNU Catalog. Practice for teams or organizations is not considered an excused absence.

This syllabus may be modified to accommodate your travel schedule and other courses while you are in Costa Rica. Modifications will be posted on Canvas and sent through email.

Inclusivity and Respect

As a Christ-centered community, we endeavor to foster a supportive environment of dignity and inclusivity in which all stakeholders, regardless of their perspectives and individual differences, are treated with respect and charitable discourse.

Disability Statement

Mission: The mission of Disability Services is to provide and coordinate support services that enable students with disabilities to receive equal access to all aspects of university life. Students needing assistance with a learning, physical or psychological disability that may affect his or her academic progress are encouraged to contact [Disability Services](#).

Institutional Guidelines and Services

Students and faculty of Southern Nazarene University should be familiar with the [SNU Institutional Guidelines and Services](#) not listed in this syllabus.

Schedule

Topic/Assignment	Due Date
<i>Forgotten People, Forgotten Diseases</i> Chapters 1-3: Discussion	February 1, 2026
Five points Comparison Between CR and USA Healthcare system	February 15, 2026
<i>Forgotten People, Forgotten Diseases</i> Chapters 4-6: Discussion	February 22, 2026
Paper Disease & Epidemics in CR in the last decade	March 8, 2026
<i>Forgotten People, Forgotten Diseases</i> Chapters 7-9: Discussion	March 15, 2026
<i>Forgotten People, Forgotten Diseases</i> Chapters 10-12: Discussion	April 5, 2026
Disease Presentation	Apr 6-7, 2026
Critical Paper Analysis	April 24, 2026
Final Exam	TBD