

College of Public Health & Health Professions
PHC: 6036

Special Topic: Environmental Infectious Diseases: A Molecular Approach

Instructor's Information

John A. Lednicky, PhD
Associate Professor
Environmental and Global Health
College of Public Health & Health Professions
Po Box 100188
Gainesville, FL 32610-0188
Tel: 352-273-9204
jlednicky@PHHP.UFL.edu
Office hours arranged

Class days, times, and locations

Mon: 12:50 PM - 1:40 PM; HPNP G-110

Wed: 10:40 AM – 12:35 PM, HPNP G105

Course Description

This course will provide the graduate student with an overview of environmental microbiology and review the latest tools in microbial ecology. The course will emphasize innovative methods in studying microbial diversity. The course is designed for students preparing for careers in public health.

Course Objectives and/or Goals

At the end of this course the student will:

- Possess an introductory understanding of environmental microbiology
- Possess an introductory understanding of molecular amplification, sequencing, and sequence alignment
- Understand the principals of genomics, metagenomics, and proteomics
- Be familiar with innovative techniques for pathogen discovery and pathogen characterization
- Be familiar with tools used to study pathogen diversity
- Be familiar with methods to study communities of pathogens

Topical Outline

Class No.	Lecture Title	Date
1	Introduction to Environmental Microbiology	Aug. 21
2	Introduction to Infectious Diseases	Aug. 26
3	Gastrointestinal Diseases	Aug. 28
4	Arthropod-Borne Diseases - 1	Sept. 4
5	Arthropod-Borne Diseases - 2	Sept. 9
6	Legionellosis and Fungal Diseases	Sept. 11
7	Assessment (Practice test); Classic Diagnostic Microbiology-1	Sept. 16
8	Classic Diagnostic Microbiology-2	Sept. 18
9	Diagnosis of pathogens at different body sites	Sept. 23
10	Prions	Sept. 25
11	Review for exam 1	Sept. 30
12	Exam-1	Oct. 2
13	Molecular Techniques – DNA Sequencing and Alignment	Oct. 7
14	Molecular Techniques – RNA and Protein Methods	Oct. 9
15	Applied Diagnostic Molecular Microbiology	Oct. 14

Class No.	Lecture Title	Date
16	Basic aerobiology with emphasis on airborne microorganisms	Oct. 16
17	Detection and isolation of microorganisms from environmental surfaces	Oct. 21
18	Non-Culturable Microorganisms	Oct. 23
19	Molecular Pathogen Discovery Methods	Oct. 28
20	Examination 2	Oct. 30
21	Pathogen Diversity and Virulence Factors	Nov. 4
22	Biofilms and Complex Microbial Communities	Nov. 6
23	Persistence of Pathogens in the Environment	Nov. 13
24	Metagenomics	Nov. 18
25.	Proteinomics	Nov. 20
26.	Integration of Molecular and Omics Information	Nov. 25
27.	New Developments and Future Directions	Dec. 2
28.	Final Examination	Dec. 4

Course Materials

Required text: Accessing Uncultivated Microorganisms: from the Environment to Organisms and Genomes and Back. Editor: Karsten Zengler, University of California, San Diego, ASM Press, April 2008, Book ISBN or Item Number: 978-1-55581-406-9

Course Requirements/Evaluation/Grading

Students will be graded on a standard letter scale of A to F. Students will be evaluated by their class participation (20%), 3 regular examination scores (15% each), student presentation (15%), and a final examination (20%). Students who fully participate and attend every session will earn at least a B for the class participation portion of the overall grade. To earn an A in class participation, students must attend each session and demonstrate that they prepared for lectures beforehand (through reading assigned text, interacting with the lecturers, and actively participating in group exercises).

Percentage or points earned in class	93%-100%	90%-92%	87%-89%	83%-86%	80%-82%	77%-79%	73%-76%	70%-72%	67%-69%	63%-66%	60%-62%	Below 60%
Letter Grade equivalent	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	WF	I	NG	S-U
Grade Points	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0.0	0.0	0.0	0.0	0.0

For greater detail on the meaning of letter grades and university policies related to them, see the Registrar's Grade Policy regulations at

<http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>

Attendance Policy

Attendance is mandatory.

Policy Related to Make-up Exams or Other Work

Attendance and Make-up Work – I expect you to attend and be prepared to participate in all class sessions. Personal issues with respect to class attendance or fulfillment of course requirements will be handled on an individual basis.

Statement Related to Accommodations for Students with Disabilities

Accommodations for Students with Disabilities

If you require classroom accommodation because of a disability, you must first register with the Dean of Students Office (<http://www.dso.ufl.edu/>). The Dean of Students Office will provide documentation to you, which you then give to the instructor when requesting accommodation. The College is committed to providing reasonable accommodations to assist students in their coursework.

Critical Dates for Examinations and Other Work

On the first day of class the instructor will distribute an updated syllabus and class schedule that will indicate the specific dates of examinations and other class activities.

Expected Student Demeanor

Students are expected to arrive in class ready to learn before the class begins. The use of cell phones, pagers or laptop computers (except for class assignments) is not permitted in class!

Statement of University's Honesty Policy (cheating and use of copyrighted materials)

Each student is bound by the academic honesty guidelines of the University and the student conduct code printed in the Student Guide and on the University website. The Honor Code states: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." Cheating or plagiarism in any form is unacceptable and inexcusable behavior.

Counseling and Student Health

Students may occasionally have personal issues that arise in the course of pursuing higher education or that may interfere with their academic performance. If you find yourself facing problems affecting your coursework, you are encouraged to talk with an instructor and to seek confidential assistance at the University of Florida Counseling Center, 352-392-1575, or Student Mental Health Services, 352-392-1171. Visit their web sites for more information: <http://www.counsel.ufl.edu/> or <http://www.health.ufl.edu/shcc/smhs/index.htm#urgent>

The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services, including primary care, women's health care, immunizations, mental health care, and pharmacy services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: www.health.ufl.edu/shcc

Crisis intervention is always available 24/7 from:
Alachua County Crisis Center: (352) 264-6789.

BUT – Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.