Biological Agents PUBH 5520

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Office Hours	By appointment		

Meeting time and location: Thursdays, 5:00-8:45, Bowman-Oddy 1230

Text: None

Description: Biological Agents is designed to introduce MS-level students to the organisms that cause human diseases. Most lectures will be accompanied by a laboratory section, during which the students will demonstrate the concepts introduced in the lectures.

Goals:

- Define the major environmental biological agents that cause adverse effects on human health, and gain an understanding of their sources and fates.
- Discuss the transport and fate of these agents in the environment, and identify the carriers or vectors (air, water, soil and food) that promote the transfer of these agents from the environment to the human.
- Understand the requirements for studying pathogens under laboratory conditions (i.e., BSL2, 3 and 4).

Evaluation: Grades will be determined based on several criteria, including the student's performance on the following assignments/activities:

Activity	Number	Point value (each)	Total points
Post-lecture quiz	7	10	70
Homework	3	30	90
Lab questions	6	40	240
Term paper	1	100	100
			500

Grades will be assigned on a straight scale (100-93%, A; 92-90%, A-; 89-88, B+, 87-83%, B; etc.)

Since we will have only eight lecture/laboratory periods, it is imperative that you attend each class; therefore, I will take a 20-point deduction for each unexcused absence.

Tentative Course Schedule:

Week	Topic	Lab Exercise(s)
05/16	Introduction, Important diseases, Videos: *Confronting the Microbial Menace*, *Threading the NEIDL*	None
05/23	Lab Safety training, BSL1 and BSL2 (UT Health and Safety)	None
05/30	Microbial structures, Microscopy	Staining and Microscopy
06/06	Pathogens in drinking and recreational water	Coliform enumeration, dilution and concentration of water samples
06/13	Surface pathogens, Hospital-associated infections	Use-dilution test, surface sampling
06/20	Food microbiology and sources of contamination	Enumeration of *E. coli* in ground beef
06/27	Airborne transmission of pathogens, bioterrorism	Impact of air disinfection
07/11	Microbial control, antibiotic resistance	Use-dilution test, disk diffusion method

I will make every effort to provide materials for upcoming laboratory exercises a few days in advance of the class day. I will expect that you read the text so that the time that we have to perform each lab exercise is used efficiently.

All email correspondence will be made through your University of Toledo email account.