

Microbiology for the Health Sciences Lab (Biol 261) Spring 2009

W 4:40-7:40 HSCT 217

Dr. Tom Lewis

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Course Description: This course is designed to give students exposure to how microbiology is practiced in the laboratory, with clinical and basic applications emphasized. It is designed to enhance the learning of microbiology through hands-on experimentation and is attempted to coincide with topics covered in the lecture (Biol 251). A previous or concurrently-taken course in microbiology is required.

Course Guidelines: Prepare for the class in advance by reading provided material, to be posted on the course D2L website and in the lab manual. Ask questions; it's important that you be willing to interact with the instructor as we cover the course material.

Text: "Biology 261 Microbiology for the Health Sciences" custom manual for this course from Symbiosis/Pearson Custom Publishing, available at the bookstore. This manual is intended largely as a reference source as the exercises performed in the course will come from handout material. Laboratory exercise descriptions will be provided on the course D2L website. A good microbiology text (such as that used for Biol 251) will also be helpful.

Assessment: Assessment will take the form of evaluation of a laboratory notebook to include answers to assigned questions from the laboratory manual.

Laboratory Notebooks: There are many styles that can be used for organizing a laboratory notebook. For evaluation purposes, it is essential that writing be legible and that information is organized in a clear, easily-read format. Some input on how to organize data obtained in particular exercises will be given, but in general, information should be presented so as to allow another scientist to understand the topic under study and the methodology used; i.e. an introduction explaining the purpose of the exercise/techniques learned for each exercise, and precise information regarding the experiment. Materials used in the exercise should be listed as well as any important notes on preparation if such information was given. Brief descriptions of techniques that were used should also be given, and the results obtained presented in a clear organized manner such as tables or figures. An interpretation of those results should conclude each exercise description.

Attendance:

This course should be interactive and is a hands-on learning experience. Difficulty scheduling use of the laboratory space, and the instructor's time to prepare exercises, make

offering make-ups prohibitive. Therefore attendance is mandatory; failure to attend more than once during the semester will result in an incomplete for the course or a poor grade.

Grading:

Grades will be determined at the discretion of the instructor, as follows:

A = Excellent quality lab work; thorough, clean, precise, well prepared notebook; notations include insights indicating a firm grasp of the theory/principles/techniques involved.

B = Good lab work, thorough notebook.

C = Active participation in lab, minimal notebook.

D = Poor effort in the lab or attendance.

F = Breaking safety rules or failure to do assigned work/attend class sessions.

Biol 261 Schedule (tentative)

<u>Day/Date</u>	<u>Lab Session</u>	<u>Exercise</u>	<u>Manual</u>
9-9	1	Intro., Lab Safety	pp. 1-4
9-16	2	Microscopy	pp. 5-14
9-23	3	Microbial Diversity	“ “
9-30	4	Culture Techniques	pp. 23-28
10-7	5	Staining Techniques	pp. 29-34
10-14	6	Growth	pp. 35-42
10-21	7	Control of Microbial Growth	pp. 43-62
10-28	8	Metabolism/physiology	pp. 63-68
11-4	9	Metabolism/Microbial ID	“ “
11-11	Veteran's Day	no class	
11-18	10	Genetics	pp. 69-80
11-25	Thanksgiving	no class	
12-2	11	Viruses	pp. 81-88
12-9	Lab Notebooks due		