



MICRO 725: Bacterial Structure and Function

Course Description: The Bacterial Structure and Function Course is designed to teach the fundamentals of bacteriology as is needed for those who will plan to do research in this discipline. The content includes practical points relevant to quantitative bacterial culturing, induction and selection of bacterial mutants, and insights into the function and composition of various bacterial structures. Bacterial genetics, including both the study of plasmids and bacteriophage, represents a critically important topic in the course.

Credit Hours: 4 semester hours

Course Prerequisites: MICRO 701, BIOCH 710, or approval of the course director.

Course Dates: Spring semester 2009

Course Times: 3:00 to 5:00 PM on the dates listed.

Course Location: The Randall Conference Room

Instructor: Richard O' Callaghan, Course Director,

Required Text and Other Learning Resources: TBA

Course Overview: The course consists of a mixture of didactic lectures, in-depth discussions of primary research papers, and student presentations.

1. The course schedule lists the class presentations at which you are expected to attend and actively participate.
2. The sessions will be held in the Randall Conference Room at 3:15 PM on the dates listed.
3. The opening session will offer a pre-test that will probe your knowledge of medical bacteriology, both the basic and clinical components.
4. The class sessions will frequently focus on publications that you should have reviewed prior to class. Such publications will be made available prior to class. Key reference books will also be made available for your use. Such reference books are not to be removed from the room in which they are stored.
5. The faculty will prepare and make available photocopies of key articles that you should read. These will be stored in the Conference Room in large binders and they should not be removed. You are expected to read all of these articles. Students are not allowed to copy these materials using departmental copying facilities.

6. Students will be expected to write a term paper of 10 pages (double spaced, typed). Papers will be graded according to scientific content (50%), documentation via citations of original research (30%), organization (10%), and language (style and grammar) (10%). The topic, described briefly (few sentences), will be proposed in writing by the student prior to the March 9th class session. The term paper is due by May 1, 2009. Papers that are submitted late will be subject to grade deductions of 5% per day of tardiness.

7. Students will be expected to present their term paper topic in an oral presentation. The presentation will be no more than 30 minutes long and will be based on PowerPoint slides plus a handout of key information (~5 pages). The handout should be made available to all course participants (students and faculty) no less than two days prior to the presentation. The presentation will be graded on its scientific content (40%), organization (10%), quality of slides (10%), quality of the handout (10%), and clarity of presentation (speaking style) (10%). The presentation will be followed by a question and answer session (~15 minutes) that will also be a component of the grade (20%). Some aspects of a quality presentation are described in the sheet attached.

8. The students will take a mid-term and final examination. The mid-term and final exams will be written exams with problems and essays. Some questions may be of an open-book or take-home style of problems.

Course Objectives: Upon completion of this course, students will be able to:

Grading Policy and Rubric. Grades will be assigned based on the following format:

- a. pre-test - - - - - 3% bonus, if the grade is above 90%.
- b. mid-term test - - - - - 30%
- c. term paper - - - - - 25%
- d. oral presentation - - - 10%
- e. final exam - - - - - 35%

Course Policies:

Students are expected to attend class and actively participate in class discussions; make-up tests will be given for reason of illness, etc., instructors are available for additional help.

University Policies:

Students with disabilities (ADA) statement Refer to UMC policy
Academic honesty statement Refer to UMC policy