



MICRO 708, PREPARATION FOR INSTRUCTION IN MICROBIOLOGY

Course Description: This course is designed to introduce microbiology graduate students to the design and implementation of operations needed to teach a microbiology course that includes laboratory exercises. The course is taught to students starting their second year in the graduate program and is geared to provide them experience in both the technical and educational challenges of teaching such a course. Students meet informally with the instructor and are provided instruction and practical experiences in the preparation lab, the medical student laboratory, and in the classroom. Students are required to describe their approaches to teaching this discipline to other students.

Credit Hours: 3 semester hours

Course Prerequisites: MICRO701 (a lecture/lab course also concurrently taught to medical students as Microbiology 611)

Course Dates: Fall

Course Times: Graduate students and faculty meet on Mondays to discuss the material to be considered in the medical student lab that week and to discuss the preparation for and teaching of laboratory sessions. Students meet in the preparation labs as often as needed before medical microbiology lab sessions (taught to medical students) to prepare the needed materials used in the medical school course. Graduate students assist the departmental staff in preparing the materials, setting up the laboratory classroom space, and helping the faculty instructors and staff assistants in teaching the lab sessions for Medical Microbiology 611 (second year medical student course).

Course Location: Laboratory work takes place in several preparation and teaching labs and informal class discussions take place in the departmental library. More formal sessions are held in the library on Mondays at 1:00 PM.

Instructor: Dr. William Lushbaugh (in consultation with faculty lab instructors and staff).

Required Text and Other Learning Resources: Students are provided a variety of articles and other literature on laboratory teaching and preparation of materials, including the laboratory manual for the Medical Microbiology Course (Microbiology 611).

Course Overview: This course teaches laboratory work and the design needed to teach a microbiology laboratory course. Students are required to present their approach for teaching and incorporate it into lab preparation and teaching for an actual medical laboratory course. Graduate student participation is graded by the Instructor in consultation with the microbiology lab faculty instructors and technical staff. Students also take a final written and oral examination to assess their understanding of the basic concepts and methods taught in the medical microbiology laboratory sessions.

Course Objectives: Graduate students will typically become teachers of microbiology and this course is one mechanism to prepare them for this portion of their career. We expect the course to require them to consider how one teaches effectively and to understand the logistical and educational components of teaching a complex microbiology course with laboratory sessions.

Upon completion of this course the graduate students will:

- 1) demonstrate acceptable proficiency in the techniques required to prepare viable bacterial cultures and correct tests/stains required for an actual medical microbiology course with laboratory sessions.
- 2) demonstrate proficiency in performing all technical tasks involved in preparing materials for medical microbiology laboratory sessions.
- 3) be able to write and implement a plan to prepare materials and use teaching methods that incorporate how people learn from doing bacteriology culturing work; that is, where does one start the process, what background information is needed for the beginning laboratory student, what can be expected in a specific period of time from new students, and how to evaluate student progress in lab.
- 4) be able to adequately teach medical students to correctly perform basic determinative bacteriology procedures and understand their scientific basis and importance in diagnostic bacteriology.
- 5) demonstrate understanding of basic determinative bacteriology principals and procedures on written/oral examinations and informal class discussions.

Grading Policy and Rubric. Written and oral exams and discussions will be given, but student participation in lab preparation is an important component of the course grade as evidenced by the objectives (above). Planning of the teaching is a critical item that must be evaluated as well as the proficiency of graduate students in teaching microbiology skills and knowledge to medical students in the laboratory classroom under faculty supervision.

Course Policies:

Students are expected to actively participate in all the appropriate duties of the laboratory and to be able to devise means to explain microbiology to new students.

University Policies:

Students with disabilities (ADA) statement: See UMC policy

Academic honesty statement: See UMC policy