

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY MDL 251 - CLINICAL MICROBIOLOGY (3 CR.)

Course Description

Teaches handling, isolation, and identification of pathogenic microorganisms. Emphasizes clinical techniques of bacteriology, mycology, parasitology and virology. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

General Course Purpose

To provide the theory and skills necessary for the handling and identification of medically important bacteria, fungi, and parasites. Basic principles learned in MDL 130 will be related to procedures performed in the isolation and identification of pathogens.

Course Prerequisites/Corequisites

Students should be enrolled in the second year of the Medical Laboratory Technology AAS degree program. Completion of the first-year core courses with a grade of "C" or better.

Prerequisite: MDL 130 with a minimum grade of "C" or receive program director approval.

Course Objectives

Upon completing the course, the student will be able to:

- Select the appropriate types of media required for culturing routine clinical specimens.
- Perform gram stains on isolated colonies and describe colonial morphology and microscopic morphology.
- Perform routine biochemical, immunologic and molecular identification procedures.
- Describe methods for determining antibiotic susceptibility of organisms.
- Identify human pathogenic bacteria by means of their cultural characteristics and biochemical reactions.
- Prepare parasitology slides from clinical specimens, recognize suspected parasites, describe the identifying characteristics, and relate clinical diseases to the life cycles of human parasites.
- Define basic mycology terms and perform routine mycology procedures.
- Discuss the identification and significance of the major cutaneous, subcutaneous, and systemic fungi pathogenic to humans.
- Associate human pathogenic microorganisms with the diseases for which they are responsible.
- Effectively communicate processes, procedures and results in a multicultural environment

Major Topics to be Included

Selection of appropriate media required for culturing routine clinical specimens
 Performance and examination of clinical staining procedures
 Plate reading interpretation and reporting of results
 Identification of gram positive cocci, gram negative rods, non-fermenters, and gram positive coccobacilli, anaerobes mycobacteria
 Chlamydia, Mycoplasma and Rickettsial diseases
 Parasites, including protozoa and helminth identification
 Examination of parasitology smears and identification of routine pathogens
 Basic fungal techniques and identification of human fungal pathogens
 Routine susceptibility testing of bacteria
 Routine identification of respiratory, stool, wound, genitourinary, blood and other body fluid pathogens
 Viral diseases