# 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 and mycology. 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 and fungi. Basic principles learned in MDL 130 will be related to procedures performed in the isolation and identification of pathogens.

# **Course Prerequisites/Corequisites**

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

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

#### **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.
- 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.
- 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.