Faculty members are required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Academic Affairs and Standards Council.

DEPT.  Medical Laboratory Technician    COURSE NUMBER: MDLT 1105

NUMBER OF CREDITS: 3  Lecture: 1  Lab: 2

Course Title:
Medical Microbiology I

Catalog Description:
Medical Microbiology I course introduces the student to the microbial world. The course covers the study of the materials and methods used for identification of pathogenic organisms and the study of these in relation to their disease processes in humans. The course will present microbiology within an epidemiologic, diagnostic, and clinical framework. In the laboratory, the student will learn such techniques as gram staining, microscopy, culturing, identification of microorganisms and anti-microbial susceptibility testing.

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)
Goal 1: Communication: by meeting the following competencies:

Goal 2: Critical Thinking: by meeting the following competencies:

Goal 3: Natural Sciences: by meeting the following competencies:

Goal 4: Mathematics/Logical Reasoning: by meeting the following competencies:

Goal 5: History and the Social and Behavioral Sciences: by meeting the following competencies:

Goal 6: The Humanities and Fine Arts: by meeting the following competencies:

Goal 7: Human Diversity: by meeting the following competencies:

Goal 8: Global Perspective: by meeting the following competencies:

Goal 9: Ethical and Civic Responsibility: by meeting the following competencies:

Goal 10: People and the Environment: by meeting the following competencies:
**Prerequisites or Necessary Entry Skills/Knowledge:**

None. It is helpful to have a general biology background or take Principles of Biology or Human Biology prior to taking this course.

**Topics to be Covered (General)**

1. Microscopy
2. Safety and infection control
3. Microscopic and colonial morphology
4. Medium used in microbiology
5. Specimen collection, transportation, and handling
6. Standard microbiology tests and procedures
7. Gram positive cocci of medical importance
8. Gram negative cocci of medical importance
9. Gram negative rods of medical importance

**Student Learning Outcomes**

1. Apply principles of safety, quality assurance, quality control in clinical microbiology
2. Properly collect, transport, and handle specimens using safe and sterile techniques
3. Describe colonial and microscopic morphology of microbes
4. Identify and classify microorganisms
5. Conduct the correct test to identify the bacteria based on gram stain, colonial morphology, and biochemical tests
6. Correlate bacteria, transmission of, and diseases caused by microorganisms
7. Understand antibiotic susceptibility and antibiotic resistant bacteria
8. Identify microbial and immunological methodologies are used in disease treatment and prevention
9. Select additional procedures based on preliminary results
10. Discuss molecular diagnostic techniques used to identify microorganisms
11. Discuss pathophysiology of microorganisms and virulent factors

**Is this course part of a transfer pathway:** Yes ☐ No ☒

*If yes, please list the competencies below

Revised 02/2020