

# Dakota County Technical College

## BIOL 2020: Microbiology

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 1

OJT Hours/Week: \*.\*

Prerequisites:

This course requires the following prerequisite

BIOL 1500 - General Biology

Corequisites: None

MnTC Goals: Goal 03 - Natural Science

An introduction to Microbiology with a focus on microbe classification and biology, disease transmission, and pathogenesis, the immune response, and isolation and identification laboratory practices. Emphasis will be on microorganisms that cause local and systemic disease in humans with consideration of treatment options as well as infection control and prevention strategies. This course is intended for nursing students and other students pursuing careers in allied health fields.

Meets MnTC Goal 3

Prerequisite BIOL1500 with a grade of C or better

**B. COURSE EFFECTIVE DATES:** 02/01/2010 - Present

**C. OUTLINE OF MAJOR CONTENT AREAS**

## **D. LEARNING OUTCOMES (General)**

1. identify and classify microorganisms
2. describe and identify bacteria
3. describe and identify eukaryotic microbes
4. describe and identify viruses of bacteria
5. describe and identify viruses
6. describe the innate immune response
7. describe the adaptive immune response
8. describe immunologic disorders
9. describe host-microbe interactions
10. describe the epidemiology of microbial infection
11. describe antimicrobial medications and their mechanisms of action
12. describe and identify skin infections
13. describe and identify wound infections
14. describe and identify respiratory system infections
15. describe and identify digestive system infections
16. describe and identify genitourinary infections
17. describe and identify nervous system infections
18. describe and identify blood and lymphatic infections
19. describe and identify HIV disease
20. understand and utilize proper specimen handling procedures
21. understand infection control and prevention practices
22. understand and utilize the scientific method
23. understand and utilize laboratory safety techniques
24. utilize personal protective equipment
25. utilize the light microscope and other laboratory equipment
26. understand and utilize aseptic technique
27. understand bacterial growth curves and requirements
28. understand and utilize microbial enumeration techniques
29. understand and utilize bacterial identification techniques
30. understand and utilize bacterial isolation techniques
31. communicate effectively orally and in writing using the language of science
32. critically review current scientific literature

## **E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

### Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.
2. Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
3. Communicate their experimental findings, analyses, and interpretations both orally and in writing.
4. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.

**F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

**G. SPECIAL INFORMATION**

None noted