

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

1. How bacteria/viruses are structured
2. How the human immune system works
3. How microbes evade the immune system
4. Connecting causative agents/pathogen to diseases
5. Looking at the differences and similarities between microbial diseases
6. How bacteria/viruses grow and can be controlled
7. How the human immune system is structured

D. LEARNING OUTCOMES (General)

1. Identify and classify microorganisms
2. Describe and identify bacteria, eukaryotic microbes, viruses
3. Describe microbial disease of the various human systems
4. Describe the innate and adaptive immune responses
5. Describe immunologic disorders
6. Describe host-microbe interactions
7. Describe the epidemiology of microbial infection
8. Describe antimicrobial medications and their mechanisms of action
9. Understand infection control and prevention practices
10. Understand and utilize the scientific method
11. Understand and utilize proper specimen handling procedures and laboratory safety procedures
12. Communicate effectively orally and in writing using the language of science
13. 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