**BARTON COMMUNITY COLLEGE**

**COURSE SYLLABUS**

**I. GENERAL COURSE INFORMATION**

Course Number: LIFE 1412

Course Title: Principles of Microbiology

Credit Hours: 5

Prerequisite: None

Division/Discipline: Academics Division / Biology

Course Description: Microbiology is the study of microorganisms and their role in the world around us. This course includes a study of bacteria in relation to their physiology, morphology, taxonomy, life cycles, and economic influences. The students will acquire skills in performing lab techniques involved in the culturing and studying of microorganisms. The course is designed to meet the requirements of those interested in biology and allied health programs.

**II. INSTRUCTOR INFORMATION**

**III. COLLEGE POLICIES**

Students and faculty of Barton Community College constitute a special community engaged in the process of education. The College assumes that its students and faculty will demonstrate a code of personal honor that is based upon courtesy, integrity, common sense, and respect for others both within and outside the classroom.

The College reserves the right to suspend a student for conduct that is detrimental to the College's educational endeavors as outlined in the College catalog.

Plagiarism on any academic endeavors at Barton Community College will not be tolerated. Learn the rules of, and avoid instances of, intentional or unintentional plagiarism.

Anyone seeking an accommodation under provisions of the Americans with Disabilities Act should notify Student Support Services via email at disabilityservices@bartonccc.edu

**IV. COURSE AS VIEWED IN THE TOTAL CURRICULUM**

Microbiology is an approved lab science course at Barton Community College. It is designed to meet a program requirement for those enrolled in biology or Allied health programs. It provides a foundation of critical thinking, basic knowledge of microbiology, and proper laboratory techniques. Microbiology is transferable to all Regent Universities and can be used as a general education credit at Kansas State and the University of Kansas. General education requirements vary among institutions, and perhaps even among departments, colleges, or programs within an institution. Also, these requirements may change from time to time and without notification. Therefore, it shall be the student’s responsibility to obtain relevant information from intended transfer institutions during his (her) tenure at Barton Community College to insure that he (she) enrolls in the most appropriate set of courses for the transfer program. The learning outcomes and competencies detailed in this syllabus meet, or exceed, the learning outcomes and competencies specified by the Kansas Core Outcomes Project for this course, as sanctioned by the Kansas Board of Regents

**V. ASSESSMENT OF STUDENT LEARNING**

Barton Community College assesses student learning at several levels: institutional, program, degree and classroom. The goal of these assessment activities is to improve student learning. As a student in this course, you will participate in various assessment activities. Results of these activities will be used to improve the content and delivery of Barton’s instructional program.

Course Outcomes, Competencies, and Supplemental Competencies

A. Explore the general concepts of physiology process and factors associated with microbiology

1. Describe the normal structure and function of the human body

2. Explain the integration of the various organ systems.

3. Demonstrate knowledge of technical terms and biological/medical terminology.

4. Distinguish the ways in which physical trauma and disease affect the body

B. Identify and describe the structure and function of cell

1. Identify and Describe information flow within a cell.

2. Identify and Describe how cellular activities are regulated.

3. Describe cellular structure and function.

4. Describe cellular growth and division.

5. Describe cellular metabolism.

6. Identify and Describe how genetic information is inherited.

7. Identify and Describe causes and consequences of mutations.

8. Identify and Describe the exchange of genetic information.

9. Identify and Describe host defense mechanisms.

10. Identify and Describe pathogenicity mechanisms.

11. Identify and Describe modes of disease transmission.

12. Identify and Describe mechanisms of antibiotics.

13. Identify and Describe genetic engineering.

14. Identify and Describe biotechnology.

15. Identify and Describe adaptation and natural selection.

16. Identify and Describe symbiosis.

17. Identify and Describe the recycling of resources.

18. Identify and Describe microbial evolution and diversity.

C. Explore the general concepts and operations of laboratory skills, techniques and knowledge.

1. Use a bright field light microscope to view and interpret slides.

2. Successfully prepare slides for microbiological examination, including performance of a Gram stain.

3. Successfully use aseptic technique for the transfer and handling of microorganisms.

4. Select and demonstrate appropriate microbiological media and test systems.

5. Estimate the number of microbes in a sample using serial dilution techniques.

6. Use standard microbiology laboratory equipment correctly

 (microscope, laboratory burner, and incubator).

**VI. INSTRUCTOR'S EXPECTATIONS OF STUDENTS IN CLASS**

**VII. TEXTBOOKS AND OTHER REQUIRED MATERIALS**

**VIII. REFERENCES**

**IX. METHODS OF INSTRUCTION AND EVALUATION**

**X. ATTENDANCE REQUIREMENTS**

**XI. COURSE OUTLINE**