Wayne County Community College District

COURSE SYLLABUS

BIO 295 Microbiology

CREDIT HOURS: 4.00 **CONTACT HOURS:** 60.00 HL / 30 HLB

COURSE DESCRIPTION:
Lecture and laboratory course studying the biology of microorganisms. Lecture topics survey the microbes, their uniqueness of cell structure and function, growth, physiological characteristics, genetics, physical and chemical control and selected communicable diseases. The laboratory emphasizes the use of the microscope, staining procedures, cultural and physiological techniques, and use of keys to identify representatives of the various microbes. (Meets six hours per week; four hours lecture and two hours laboratory)

PREQUISITES: BIO 155

EXPECTED OUTCOMES:
***Lecture* Objectives:** *The student must be able to demonstrate an understanding of*:

1. The importance of the history of microbiology.
2. Classification & Taxonomy of microbes.
3. The anatomical and physiological differences between prokaryotes and eukaryotes.
4. The structures and functions of the different prokaryotic and eukaryotic cell components.
5. The principles of microbial growth and population curves.
6. The different types of microscopes.
7. The principles of microbial metabolism.
8. The principles of microbial control by physical and chemical agents including antibiotic theory.
9. The importance of viruses and how they differ from cells in anatomy, cultivation, control and replication.
10. The different mechanisms by which microbes cause disease.
11. The various nonspecific defense mechanisms of the body.
12. The principles of the specific immune response.
13. The structure and physiology of medically important fungi, helminthes, and protozoan's.

***Laboratory* Objectives**
The student must be able to demonstrate a recognition, understanding and performance of:

1. The different methods of staining microbes and viewing them with the microscope.
2. The different methods of culturing bacteria using.
3. The different techniques and procedures used to identify bacteria.
4. The different methods of counting bacteria.
5. The different methods of microbial control.
6. The different environmental growth environments for microbes.
7. Performing microbe collection, processing, and identification.
8. Identifying an "unknown" culture, and preparing a written formal report using internet references

ASSESSMENT METHODS: Student performance may be assessed by examination, quizzes, case studies, oral conversation, group discussion, oral presentations. The instructor reserves the option to employ one or more of these assessment methods during the course.

GRADING SCALE:
90%-100% = A
80%-89.9%= B
70%-79.9%= C
60%-69.9%= D
<60% = E