

## STANDARDIZED COURSE OUTLINE

### SECTION I

SUBJECT AREA AND COURSE NUMBER: Science – Bio G235

COURSE TITLE: Microbiology

COURSE CATALOG DESCRIPTION: Study of microorganisms with emphasis on bacteria. Host - parasite relationships, immunology, bacterial nutrition, physiology, and genetics are investigated. A grade of C is required for the Nursing Program

LECTURE HOURS PER WEEK: Three (3)

CREDIT HOURS: Four (4)

LAB HOURS PER WEEK: Three (3)

PREREQUISITE(S): General Prerequisites: BIO G101, and CHEM G111; or completion of BIO G212.

### SECTION II

A. SCOPE: It is believed that the body reflects the conditions of the cells that make up the body. It is therefore important to be knowledgeable about the anatomy and physiology of cells. The information is gained by the study of both eukaryotic and prokaryotic cells. Prokaryotic cells are emphasized.

B. REQUIRED WORK: Three hourly lecture exams and a two hour final exam which is cumulative, a lab report on the identification of an unknown and a lab practicum.

C. ATTENDANCE AND PARTICIPATION: Regular attendance and class/lab participation are expected.

D. METHODS OF INSTRUCTION: Power Point Lectures; Laboratory techniques demonstrated

E. OBJECTIVES, OUTCOMES, and ASSESSMENT: Students' grades will be based on achievement of learning the objectives and outcomes listed below:

LEARNING OBJECTIVES	LEARNING OUTCOMES	ASSESSMENT METHODS
<b>To demonstrate an understanding of :</b>	<b>Student will:</b>	<b>As measured by:</b>
Differences between Prokaryotic and Eukaryotic cells	Correlate lecture material with laboratory experiences. Make microscopic observations of eukaryotic and prokaryotic cells Measure the sizes of the observed cells.	All measures of Outcomes will be by: Three objective exams A cumulative final exam Laboratory Practicum Handing in a report on the Identification of an Unknown bacterial culture.

Members of the Kingdom <i>Protista</i> and the Kingdom <i>Fungi</i>	Correlate lecture material with laboratory experiences. Make microscopic observations of fungal specimens collected locally and representative protozoa and algae	
Basic Biochemistry of eukaryotic and prokaryotic cells including cellular respiration, DNA and RNA synthesis, Protein synthesis and the control of gene expression.		
Viruses – their structure and the variations of replication		
The cultivation, growth, and reproduction of bacterial cultures.	Correlate lecture material with laboratory experiences while doing experiments in the identification of an unknown culture.	
Bacterial Genetics: Mutations, transformation, transduction and conjugation		
Bacterial Control using temperature, radiation, filtration, antiseptics, and antibiotics	Correlate lecture material with laboratory experiences involving experiments with antiseptics and antibiotics (Kirby-Bauer)	
Pathogenicity: The role of parasite and host in this symbiotic relationship		
Immunology – from the associated recognition theory to super antigens.		

F. TEXT(S) AND MATERIALS: Microbiology by Prescott, Harley, and Klein 5/e; Long sleeved, knee length non-flammable lab coat; a permanent marker (Sharpie); padlock or combination lock.

G. INFORMATION TECHNOLOGY: Access to the Internet since grades are posted electronically.