
Biology Department, College of Arts & Sciences, Valdosta State University
SPRING 2011----SUPPLEMENT TO COURSE SYLLABUS FOR BIOL 5100*

BIOL 5100, Sections A & B. Microbiology (CRN 21231& 21232) – 4 credit hours
This supplement accompanies the course syllabus for BIOL 3100/5100, and is only for students taking BIOL 5100.

***This is a tentative supplement. Changes to this supplement will be announced during class or laboratory periods; alternatively, changes will be posted on BlazeView or discussed with the student(s).**

Instructor: **Dr. Jenifer Turco**

Course Objectives: (Page 2 shows how the objectives below are aligned with the VSU General Education Outcomes and the Biology Department Graduate Program Educational Outcomes.)

After successful completion of this course, the student should be able to:

A. List and describe the three domains of living organisms.
B. List and describe the three types of noncellular infectious agents.
C. List several activities of microorganisms that are beneficial to humans and the environment.
D. List and briefly explain several current challenges in medical microbiology and infectious diseases.
E. Compare and contrast the structure and function of the microorganisms in the domains Bacteria, Archaea, and Eukarya.
F. List and describe the various strageties used by microorganisms to obtain carbon, energy, and electrons.
G. Describe the growth of a pure culture of bacteria in a closed system, and perform mathematical calculations related to the exponential growth phase. Explain several ways in which bacterial growth can be measured. N. Briefly explain the role of m
O. List and describe a variety of methods and approaches that are used to de noncellular infectious agents.
P. Explain how physical methods and chemical agents (antiseptics and disin
Q. State the mechanisms of action of various antibacterial, antifungal, and ar
R. Discuss the problem of antimicrobial drug resistance, and explain several bacteria can be minimized.
S. Give examples of beneficial interactions between: (i) microorganisms and (iii) different types of microorganisms.
T. Describe the role of microorganisms in the cycling of nutrients, using exa and the sulfur cycle.
U. Describe in detail: (i) the innate defenses of humans and (ii) the adaptive antigen.
V. Explain how infectious diseases are transmitted, giving specific examples
W. List the major types of virulence factors observed in pathogenic bacteria,
X. List and describe several human diseases that are due to specific bacteria,
Y. Describe the general course of the disease caused by human immunodefic
Z. Properly handle microorganisms in a biosafety level 2 laboratory.
ZA. Use a compound light microscope to examine various types of microorga
ZB. Keep accurate records of microscopic observations, as well as other labor
ZC. Use culture media to grow bacteria and fungi in the laboratory, and maint
ZD. Use staining techniques, physiological tests, and rRNA sequences as aids
ZE. Use dilutions to determine the colony-forming units per milliliter in a bac per milliliter in a viral suspension.
ZF. Work with others to formulate an answerable question, develop a hypothe and organize data, and write a formal report in the format used in a scient
ZG. Use library and electronic resources to obtain formal scientific articles rel
ZH. Read the articles mentioned in objective ZG and give an oral presentation
ZI. Read one or more primary scientific research articles and write a paper ba

---

Alignment of Assignments with Course Objectives:

The course objective(s) aligned with each assignment are given below.
