

Biology-B16; General Microbiology

Student Learning Outcomes or AUO	Measure	PLO	ILO	GE
1. Compare and contrast the characteristics for various microbes with regards to infections, treatment, and control. (This includes prions, viruses, bacteria, protozoans, and multicellular parasites.)	Lab assignment, quiz or exam	1,2,3,4	II,III	B.1
2. Explain the dynamics of commensal, opportunistic, and pathological relationships particularly between microbes and humans.	Case study, Lab assignment, quiz or exam	2,3,4	II,III	B.1
3 Evaluate and apply the proper methods of microbial control necessary in sample scenarios or case studies	Case study, Lab assignment, quiz or exam	2,3,4	I,II,III	B.1
4 Describe microbial metabolic pathways in general terms and specifically evaluate the implications for food production and human disease.	Lab assignment, quiz or exam	2,3,4	I,II,III	B.1
5. Summarize basic bacterial genetic principles and analyze consequences of mutation and genetic recombination.	Case study, Lab assignment, quiz or exam	2,4	I,II,III	B.1
6. Articulate and diagram the role of the immune system in maintaining homeostasis, challenging infections, and fighting cancer.	Lab assignment, quiz or exam	2,3,4	II,III	B.1
7. Apply the scientific method by stating a question; researching the topic; determining appropriate tests; performing tests; collecting, analyzing, and presenting data; and finally proposing new questions about the topic.	Case study, Group and individual project, Lab assignment, quiz or exam	1,2,3,4	I,II,III,IV	B.1
8. Correctly perform microbiologic lab skills and display a habit of good lab practices which extends to relevant situations in the student's homes.	Lab assignment, quiz or exam	1,2,3,4	I,II,III,IV	B.1

9. Retrieve, evaluate, and use contemporary microbiologic information.

Case study,
Group and
individual
project, Lab
assignment

2,3,4

I,II,III,IV

B.1

PLOs:

1. Students will be able to demonstrate proficiency using a microscope.
2. Fourth semester nursing students and second semester x-ray students will report biology prerequisite courses were important to their success thus far in the program.
3. Identify medical problems and apply appropriate and effective solutions. Students will be able to analyze a clinical situation using anatomical terminology, select the correct technology to use for further examination, analyze and determine a diagnosis when a pathology is described, and create a plan of action.
4. Students who successfully completed the allied health pathway at BC will be accepted into the nursing program (defined as NURS B1) and further, those students will persist and complete the nursing program (defined as NURS B9 and B10).

ILOs:

- I. **Think critically and evaluate sources and information for validity and usefulness.**
- II. **Communicate effectively in both written and oral forms.**
- III. **Demonstrate competency in a field of knowledge or with job-related skills.**
- IV. **Engage productively in all levels of society – interpersonal, community, the state and nation, and the world.**

GELOs:

B.1 Natural Sciences – Life Sciences

Courses in the natural sciences are those that examine the physical universe, its life forms, and its natural phenomena.

Further, courses in the natural sciences help the student develop an appreciation and understanding of the scientific method. Courses in the natural sciences, math and logic help students apply logical, qualitative and quantitative reasoning in solving problems or analyzing arguments.

