Microbiology ACE

8 Modules + 1 Final Exam Module / Credit-by-Course / 3 Credits

Course Description:

Microbiology is a course intended for students interested in learning about the microbial world and how the microbial world influences human actions and interactions. This course covers principles of microbiology with emphasis on microorganisms and their role in human disease. Topics include an overview of microbiology, microbial genetics and recombinant DNA technology, microbial nutrition and growth, control of microbial growth via physical and chemical methods, how microbial interactions within humans maintain health and cause disease, the epidemiology of infectious diseases, innate and adaptive immunity, immune disorders, diagnosis of infection, infectious diseases caused by microorganisms in each of the human organ systems, and environmental microbiology. This course also describes laboratory methods for culturing microorganisms and analyzing them via microscopy.

Course Objectives:

After completing this course, you will be able to:

- Recognize and apply the basic concepts of microbiology.
- Recall and categorize microbial classification and taxonomic organization.
- Identify and interpret the microbial metabolism, nutrition, and growth.
- Recognize how microorganisms are cultured and analyzed in a laboratory setting via microscopy.
- Differentiate the genetics, gene expression, and evolution of microorganisms.
- Compare the genetic analysis of microbes and relate this concept to recombinant DNA technology.
- Distinguish principles of microbial control via physical & chemical methods and antimicrobial treatment.
- Compare and contrast the roles of innate and adaptive immunity in human health and disease.
- Interpret the biology of infectious diseases in the human organ systems.

E-Book:

Title: Microbiology: A Systems Approach 7th edition, by Cowan, Marjorie, McGraw-Hill Education.

Open Educational Resources (OER's)

If you are struggling with a term or concept, you can utilize the links below to search for the concept or term to find additional resources and explanations.

[Link Removed]

CDC Laboratory Training - Microbiology Series (https://www.cdc.gov/labtraining/training-courses/basic-microbiology/index.html)

MIT Systems Microbiology (http://ocw.mit.edu/courses/biological-engineering/20-106j-systems-microbiology-fall-2006/)

Saylor Foundation: Microbiology (http://www.saylor.org/courses/bio307/)

Closed Captioning

Lecture videos and extra resource videos have automatic closed captioning. These captions are generated by computer algorithms. To utilize closed captioning, you can click on the CC button at the bottom of a video.

Accommodating Student Disabilities

Gateway Education is committed to the belief that every individual should have an equal opportunity in education. Gateway Education seeks to assure access by providing accommodations to individuals with a disability as defined under the Americans with Disabilities Act of 1990 (ADA) and the ADA Amendments Act of 2008 (ADAAA). Accommodation includes, but is not limited to: aids or modification to courses, materials, or testing; and other services that allow better access by individuals with disabilities.

Individuals requesting accommodation should submit a request in writing or in an alternative format appropriate for their limitations. The request should include documentation of the disability, including information with recommendations of appropriate accommodation. Once eligibility has been established, accommodations must be requested on a course-by-course basis.

Requests can sent to the student services department at help@gatewayeducation.com