

Global Learning Semesters

Course Syllabus

Course: BIOL-209 Microbiology

Department: Health and Life Sciences

Host Institution: University of Nicosia, Nicosia, Cyprus



Course Summary		
Course Code	Course Title	Recommended Credit Hours
BIOL-209	Microbiology	4
Semester Offered	Contact Hours	Prerequisites
Please contact us	42-45	BIOL -110
Department	Level of Course	Language of Instruction
Health and Life Sciences	Lower Division	English

Course Description

This course introduces the foundations of microbiology, the bacteria, bacterial diseases of humans, other microorganisms, disease and resistance, control of microorganisms, and microbiology and public health. At the end of the course the student will be able to: Know many of the disease-causing microorganisms; Appreciate the challenge of microorganisms to the human body and how the body responds; Understand the relationship between host, agent and environment in the transmission of infectious diseases; Realize the importance of hygiene, sanitation and aseptic procedures in health care settings; Understand some of the uses, misuses, advantages and limitations of antibacterial drugs. The course format will be lectures, assigned readings and 2h/week laboratory experiments.

Prerequisites

BIOL -110

Topic Areas

1. Introduction: Infection and disease. Basic concepts of microbiology
2. Basic biochemistry, anatomy and growth of bacteria
3. Airborne Bacterial Diseases
4. Food born /Water borne Bacterial Diseases
5. Soil born Bacterial Diseases
6. Antibiotics; Disinfectants and Antiseptics
7. Contact and Nosocomial Bacterial Diseases
8. Sexually Transmitted Bacterial Diseases
9. Arthropod Borne Bacterial Diseases
10. Fungal Diseases
11. Protozoan Diseases
12. Paracitology: Helminth Pathogens
13. The Immune System; Hypersensitivity and autoimmune diseases
14. Viruses and Viral diseases; the Digestive system, Hepatitis, Skin Diseases
15. HIV and the Acquired Immune Deficiency syndrome

Laboratory Exercises: 2 Hours/Week

1. Determination of Cell Motility, Form, and Viability Using Wet Mount and Hanging Drop Preparations

2. Simple Stains: Positive and Negative Stains
3. Multiple and Differential Stains
4. Pure Culture and Aseptic Technique
5. Defined, Undefined, Selective and Differential Media
6. Quantification of Microorganisms
7. The Effect of Incubation Temperature on Generation Time
8. Control of Microbial Growth with Ultraviolet Light
9. Antiseptics and Antibiotics
10. Selection of Bacterial Mutants Resistant to Antibiotics
11. Transformation: A Form of Genetic Recombination
12. Microscopic Identification of Fungi
13. Parasitology: Protozoa and Helminths
14. Normal Skin Flora and Respiratory Microorganisms
15. Identification of Enteric bacteria

Readings and Resources

Required Textbooks

1. Fundamentals of Microbiology by I. Edward, Ph.D. Alcamo Jones & Bartlett Pub; ISBN: 0763710679; 6th edition (January 15, 2001)
2. Microbiology Experiments A Health Science Perspective, Fourth Edition Authors: John Kleyn, Mary Bicknell, Publishers: McGraw-Hill, 2003, ISBN: 0-07-247624-9

Recommended Reading

1. Fungal Infections of the Skin & Nail by Suhonen Dunitz Martin Ltd; ISBN: 185317632X; (December 1998)
2. Viruses and Human Disease by James H. Strauss, Ellen G. Strauss Academic Press; ISBN: 0126730504; 1st edition (December 2001)
3. Mims' Pathogenesis of Infectious Disease by Cedric A. Mims, Anthony Nash, John Stephen Academic Press; ISBN: 0124982654; 5th edition (January 15, 2001)
4. Infectious Disease by Barbara Bannister, Norman T. Begg, Stephen Gillespie Blackwell Science Inc; ISBN: 0632053194; 2nd edition (August 15, 2000)
5. Control of Communicable Diseases Manual by James E. Chin (Editor) American Public Health Association; ISBN: 087553242X; 17th edition (January 15, 2000)
6. Burton, G. R. W. (1999) Microbiology for the Health Sciences. 6th ed. London: Raven Press
7. Greenwood, D., Slack, R.C.B. and Peutherer, J.F. (1997) Medical Microbiology: a Guide to Microbiological Infections. 15th ed. Edinburgh: Churchill Livingstone
8. Gould, D. and Brooker, C. (2000) Applied Microbiology for Nurses. 17th ed. London: Macmillan
9. Morello, J. A. et al (1997) Microbiology in Patient Care. 6th ed. New York: McGraw-Hill