

Course Description:

The purpose of this course is to introduce the student to the world of microorganisms and the important role they play in food industries and human disease. In the first third of the lecture series, a brief introduction and history of Microbiology will be given as well as a discussion of the structure and function of the various organisms which are classified as microorganisms. In the second third of the lecture series, various control methods will be discussed including: physical and chemical means of control, antimicrobial drugs and antibiotics, and the immune system. In the last third of the course, normal flora will be discussed. In addition, the specific potential pathogens of each of the five major portals of entry into the human body will be studied in detail.

Credits: Three (3)

Course Format and Modes of Instruction:

This course is a web-based class consisting of readings from the textbook, discussion activities posted on the discussion board, links to informational cites on the internet, lecture handouts, written assignments, and practice quizzes.

Prerequisites: None

Course Goals and Objectives:

Upon completion of this course, the student will:

- 1) Explain the overall concept of the field of Microbiology, and outline the major events which occurred in the history of this branch of science.
- 2) Discuss the structure and function of each type of organism studied in Microbiology, including: bacteria, algae, protozoa, yeasts, molds, viruses, and explain the physical and chemical requirements for the optimal growth of these organisms.
- 3) Explain the effects of various physical and chemical means of microbial control on the growth of microorganisms, and discuss the mechanism of action of commonly used antimicrobial drugs and antibiotics.
- 4) Describe the process of infectious disease development in the host, and discuss the role of each of the components involved in the immune system in protecting the host against infectious disease.
- 5) Discuss the role of normal flora in infectious disease prevention, and summarize the structure, virulence factors, and disease process of each potential pathogen of the respiratory tract, gastrointestinal tract, genitourinary tract, and skin.
- 6) Differentiate 'direct zoonoses' and 'indirect zoonoses', and study the disease process of each organism discussed within these two categories of infectious disease.

Course Requirements:

| Course Activities or Assignments | Equivalent Classroom Instructional Hours |
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| Recorded Lectures for 20 Lectures (1.25 hours per unit average) | 25 |
| Quizzes for 20 Lectures (10 minutes per quiz) | 3 |
| 4 Exams (1.5 hours per exam) | 6 |
| Discussion Boards for 15 Modules (3/4 hour per unit) | 11 |
| Total: | 45 |