

SOUTH SEATTLE COMMUNITY COLLEGE _____

Academic Programs

COURSE OUTLINE

Carey Schroyer – Biology Faculty – Academic Programs

DEPARTMENT: Academic Programs

CURRICULUM: Life Sciences, Global Studies, and ICS

COURSE TITLE: The Biology and Evolution of Infectious Diseases

COURSE NUMBER: BIOL 150

TYPE OF COURSE: Academic Transfer

AREA(S) OF KNOWLEDGE: Life Sciences - Biology

COURSE LENGTH: 1 quarter

CREDIT HOURS: 5

LECTURE HOURS: 55 (100% Online)

LAB HOURS: 0

CLASS SIZE: 25

PREREQUISITES: Completion of English 96 or permission of the instructor. Compass Score specifics: Reading: 77, Writing: 68

COURSE DESCRIPTION: This course will focus on the basic biology, epidemiology, and evolution of infectious human diseases in both a local and global environment. Emphasis will be placed on diseases that have significantly impacted human societies and have the potential to do so as newly emerging infectious diseases. The course will also consider the economic, social, cultural, historical, political, and ethical impact of past, present, and future disease epidemics. Diseases studied may include Cholera, Ebola, HIV/AIDS, Tuberculosis, Malaria, Influenza (including H1N1), Smallpox, and others.

BIOLOGY 150 – THE BIOLOGY AND EVOLUTION OF INFECTIOUS DISEASES

STUDENT LEARNING OUTCOMES ADDRESSED:

1. Communication – Read and listen actively to learn and communicate. Speak and write effectively for personal, academic, and career purposes.
2. Computation – Apply quantitative skills for personal, academic, and career purposes.
3. Human relations – Recognize the diversity of cultural influences and values.
4. Critical thinking and problem solving – Think critically in evaluating information, solving problems and making decisions.
5. Personal responsibility – Be aware of civic and environmental issues
6. Information literacy – Access and evaluate information from a variety of sources and contexts, including technology. Use information to achieve personal, academic, and career goals as well as to participate in a democratic society.

GENERAL COURSE OBJECTIVES:

Upon successful completion of this course, the student will be able to:

1. Describe the main structures of human cells, bacterial cells, viruses, and prions.
2. Describe the basic structures and functions of the human immune system.
3. Distinguish between antibodies, antibiotics, vaccines, and antigens and describe/discuss the significance of each (including the perceived risk in vaccination).
4. Describe the evolution of disease and the importance of the science of epidemiology.
5. Identify and describe the important factors that affect the transmission of disease.
6. Describe how to control the spread of infection through food safety and personal hygiene.
7. Distinguish between effective treatments for bacterial and viral infections.
8. Distinguish between scientific evidence and other types of information such as anecdotes and rumors.
9. Identify the causative agent, mode of transmission, signs and symptoms, treatment and prevention of specific infectious diseases studied.
10. Understand and describe the societal, historical, cultural, political, and ethical impact/influence of the diseases studied which may include: Cholera, Ebola, HIV/AIDS, Tuberculosis, Malaria, Influenza and HINI, and others.
11. Apply course concepts to increase understanding and awareness about past, present, and future infectious diseases in both a local and global context.
12. Employ the concept of global citizenship to make more informed decisions and solve potential problems regarding future disease outbreaks.

TOPICAL OUTLINE: APPROX. HOURS

I.	Introduction to scientific method and history of diseases	3
II.	Introduction to cells	5
III.	Introduction to microbes (viruses, prions, and bacteria)	6
IV.	Basic structures and functions of human immune system	5
V.	Antibodies, Antigens, Vaccines	5
VI.	Epidemiology and Evolution of Infectious Diseases	6
VII.	Disease Transmission + Social, Political, Cultural Influences	6
VIII.	Effective Treatment of Bacterial and Viral Infections + Social, Political, Cultural Influences	6
IX.	Scientific Evidence verses Anecdotes and Rumors	6
X.	Emerging Infectious Diseases + Global Citizenship	<u>7</u>

TOTAL 55