Welcome to Honors Biology!

Biology 675

Course Number: BIOL 675 (CRN 89298)
Course Title: Honors Colloquium in Biology
Science, Math, Technology Division
1 unit
F, 1:10-2:00
Room: 7106
Lecture must be accompanied by a lab session plus 16 lab hours by arrangement.

Course Prerequisites: Completion of or concurrent enrollment in any non-Honors biology level 100 or 200 course

Course Classification: Transfer credit: UC; CSU. Honors credit will be received in this and a concurrent 100 or 200 level biology course upon successful completion of this course.

Course Description: Emerging diseases are a significant burden to global economics and public health. We will address socioeconomic, environmental, and ecological factors responsible for diseases that reappear in altered genetic forms, such as the influenza virus and Ebola hemorrhagic fever. We will also discuss the threat of genetically-modified and ancient infectious diseases such as anthrax.

Instructor: Please contact the instructor at any time with questions concerning the course, an assignment, an upcoming quiz, etc.

Christine Case
Office 7214
(650) 738-4376
case@smccd.edu

Philosophy: Henry Thoreau asked *Is not disease the rule of existence?* In today's crowded, overpopulated world, in which frequent travel and the mass production and distribution of food and other goods are a way of life, diseases can spread rapidly. A contaminated food or water supply, for example, can affect many thousands of people very quickly. Identifying the causative agent of a disease is desirable so that a disease can be effectively controlled and treated. However, even if you could control all disease environmental change and evolution select for new or emerging diseases so perhaps Thoreau was right.

The science that studies when and where diseases occur and how they are transmitted in populations is called epidemiology. Epidemiologists are sometimes called medical detectives.

We will examine some of the principles of infection and epidemiology. You will learn how these principles are useful in studying and controlling disease. And, you will hone your critical thinking and quantitative analysis skills as you track an outbreak.

Student Learning Outcomes: After completing this course, you will be able to:
1. Discuss and understand the role of microorganisms in infectious diseases.
2. List factors that lead to the emergence of diseases.
3. Describe methods of controlling infectious diseases.

Attendance: Regular attendance is expected at every meeting. Role will be taken during each class meeting. When students must be absent because of illness or emergencies they should contact the instructor in advance. A student may be dropped for missing two class meetings. Responsibility for making up work missed because of absence rests with the student.

The Grade of W: You may wish to withdraw from this class. If you withdraw prior to 9-10-12 nothing will appear on your record. If you withdraw between 9-10-12 and 11-16-12, a *W* will appear on your transcript. You will receive a *W* for exceeding two absences *prior* to 11-16-12. Anyone exceeding two absences *after* 11-16-12 will get a final grade of F.

Requirements
All assignments must be completed to earn a passing grade.

Project	75 points
Labs, 3 @ 10 points	30
In-class work	15
Total	120 points

Grading

A ≥88%
B 75-87%
C 60-74%
D 45-59%
F ≤44%

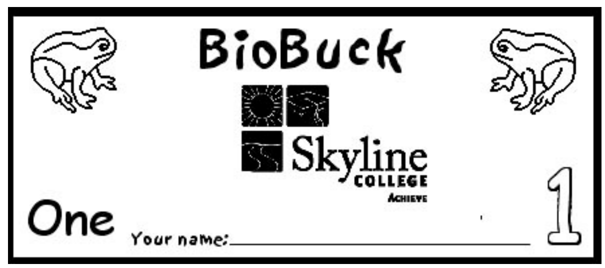
Read each assignment before coming to class and be prepared to discuss the content and answer questions on the content.

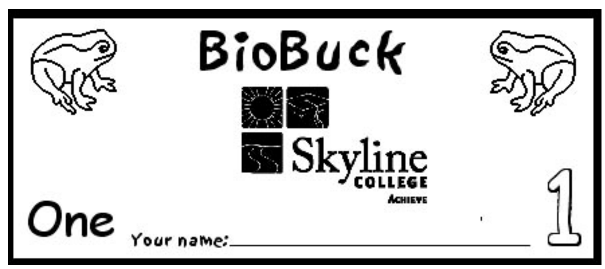
Class conduct policy: You are also responsible for adhering to the Code of Student Conduct outlined in the College Catalog. Cell phones *must be turned off* during class. No extraneous conversation during class.

Academic honesty. Plagiarized lab reports and papers will receive a score of zero. The work you submit must be your own. The Skyline College Catalog has a complete statement defining cheating and plagiarism.

Project: You will work in groups of 3 students to find the source of an outbreak. The project guidelines are online. You will receive your outbreak data in class.

Resources: Assignments, reading, a glossary, and an image library are posted on the BIOL 675 home page.
Go to < skylinecollege.edu/case/> and click on BIOL 675.





Class Schedule. Friday 1:10-2:00 P.M. Read the assignments *before* class. All of the readings are online at http://skylinecollege.edu/case.
📖Print the lab protocol files and bring them to class on the dates indicated.

Date	Lecture	Reading/Assignments *online*
Aug 24	Introduction	Introduction. Case Studies.
Aug 31	Microbes & Infectious Disease	Case Studies **due** Concept map 1 Pathogenicity (11)
Sept 7	Koch's Postulates	Historical perspective (10) Koch's Postulates
Sept 14	Handwashing lab	Handwashing (1) 📖Handwashing lab protocol (7)
Sept 21	Impact of Infectious Disease on Human History	Typhoid Mary Handwashing lab report **due**
Sept 28	Epidemiology	Concept map 2 Snow (6). Nightingale (4). Semmelweis (3)
Oct 5	Epidemiology lab	📖Epidemiology lab protocol (7)
Oct 19	Case-control studies	Case studies (11)
Oct 26	Control & Prevention	Montagu-Jenner (2). Whooping cough (8),
Nov 2	Antimicrobial lab	📖Antimicrobial lab protocol
Nov 9	Emerging Infectious Diseases	Concept map 3 EID (9). Influenza (12)
Nov 16	Sociopolitical issues Public Health	Immigration Law, Bioweapons (11) Health and Human Society (5)
Nov 30	M & M	Peer-evaluation due
Dec 7	M & M	Peer-evaluation due

Literature Cited:

1. Case, C. L. "Handwashing." Access Excellence. http://www.accessexcellence.org/AE/AEC/CC/hand_background.html.
2. Case, C. L. and K-T. Chung. "Montagu and Jenner: The Campaign Against Smallpox." *SIM News* 47(2):58-60, 1997.
3. Chung, K-T. and C. L. Case. "Semmelweis: A Lesson in Epidemiology." *SIM News* 47(5):234-237, 1997.
4. Cohen, I, B. "Florence Nightingale." *Scientific American* 250(30:128-137, March 1984.
5. Hertzman, C. "Health and Human Society." *American Scientist*, Nov-Dec. 2001.
6. "John Snow." UCLA Department of Epidemiology. http://www.ph.ucla.edu/epi/snow.html.
7. Johnson, T. and C. L. Case. *Laboratory Experiments in Microbiology*, 10th ed. San Francisco CA: Pearson, 2013.
8. Shapiro-Shapin, C. G. "Pearl Kendrick, Grace Eldering, and the Pertussis Vaccine." *Emerging Infectious Diseases* 16 (8), 2010. http://wwwnc.cdc.gov/eid/article/16/8/10-0288.htm
9. Morse, S. S. "Factors in the Emergence of Infectious Diseases." *Emerging Infectious Diseases* 1(1):7-15, 1995.
10. Satcher, D. "Emerging Infections." *Emerging Infectious Diseases* 1(1):1-6, 1995.
11. Tortora, G., Funke, B., and Case, C. L. *Microbiology: An Introduction*, 11th ed. San Francisco CA: Benjamin Cummings, 2013.
12. Webster, R. G. and E. J. Walker. "Influenza." *American Scientist*, March-April 2003.