

Course Outline of Record

1. Course Code: BI-011
2. a. Long Course Title: Biology of Viruses
b. Short Course Title: BIOLOGY OF VIRUSES
3. a. Catalog Course Description:
This course is designed for science and non-science major students. The course emphasizes molecular and cellular biology, epidemiology, and development of diseases caused by human viruses. This includes the study of viral structure, classification, natural viral habitats, viral replication methods, host immune responses to viral infections, human viral diseases, viral isolation techniques, immunization and treatments. The scientific method is introduced and specific examples of its application to the study of viruses are included.
b. Class Schedule Course Description:
This course provides an introduction and understanding of the biology of viruses to both science and non-science major students, specifically emphasizing those viruses implicated in human diseases.
c. Semester Cycle (if applicable): N/A
d. Name of Approved Program(s):
 - LIBERAL ARTS with emphasis in Math and Science AA Degree and Transfer Preparation
4. Total Units: 3.00 Total Semester Hrs: 54.00
Lecture Units: 3 Semester Lecture Hrs: 54.00
Lab Units: 0 Semester Lab Hrs: 0
Class Size Maximum: 28 Allow Audit: No
Repeatability No Repeats Allowed
Justification 0
5. Prerequisite or Corequisite Courses or Advisories:
Course with requisite(s) and/or advisory is required to complete Content Review Matrix (CCForm I-A)
Advisory: ENG 061
6. Textbooks, Required Reading or Software: (List in APA or MLA format.)
a. Shors, Teri (2013). *Understanding Viruses* (2nd/e). Sudbury, Massachusetts Jones and Bartlett Publishers.
College Level: Yes
Flesch-Kincaid reading level: 12.7
7. Entrance Skills: *Before entering the course students must be able:*
Advisory Skills:

a.

Read and respond in writing beyond literal interpretation of reading assignments.

- ENG 061 - Demonstrate the ability to read and respond in writing beyond the literal interpretation of the text.

b.

Organize and express ideas in writing, reports, and answering essay exam questions.

- ENG 061 - Use theses to organize paragraphs into coherent analyses.
- ENG 061 - Demonstrate the ability to think critically and express ideas using various patterns of development.
- ENG 061 - Demonstrate the ability to read and respond in writing beyond the literal interpretation of the text.

c.

Use critical thinking skills in reading and composition.

- ENG 061 - Demonstrate the ability to think critically and express ideas using various patterns of development.

d.

Use appropriate vocabulary and style.

- ENG 061 - Recognize features of style such as purpose, audience and tone integrate these elements into academic and professional writing.

e.

Apply standard rules of grammar, punctuation, composition mechanics, and use correct spelling

- ENG 061 - Use theses to organize paragraphs into coherent analyses.
- ENG 061 - Demonstrate the ability to read and respond in writing beyond the literal interpretation of the text.

8. Course Content and Scope:

Lecture:

1. Introduction to Viruses
2. Human Cell Biology Review
 1. Basic human cell anatomy
 2. Human cellular functions (protein synthesis, replication, communication)
3. Structure of Viruses
 1. Viral morphology
 2. Nucleic acids
 3. Enveloped/non-enveloped
4. Viral Classification
5. Viral Infections and Pathogenesis
 1. Preferred routes of entry
 2. Mechanisms of viral spread
6. Host immune responses to viral infections
 1. Host physiological factors
 2. Non-specific host defenses
 3. Specific host defenses
7. Diagnosis of Viral Infections
8. Antiviral Treatments
9. Drugs
 1. Vaccines
10. Viral Epidemiology
 1. Centers For Disease and Control (CDC); World Health Organization (WHO)
 2. Morbidity and Mortality Weekly Report (MMWR)
11. Viral Infections and Cancer
 1. Hepatitis B and C viruses: interactions in human liver cancer
 2. Human Papilloma Virus (HPV) infections
 3. Kaposi's Sarcoma in HIV
 4. Epstein Barr Virus (EBV) and Burkitt's lymphoma
 5. HTLV-1/HTLV-2 in Human T-cell leukemia and Lymphoma
12. Poliovirus and Other Enteroviruses
13. Influenza Viruses
14. Rabies
15. Poxviruses
16. Herpesviruses
17. Human Immunodeficiency Virus
18. Hepatitis Viruses
19. Epidemiology of Transmissible Spongiform Encephalopathies (TSEs)
 1. Prion infections
 2. Viroids
20. New and Reemerging Viruses
21. Facilities For Studying Viruses
 1. Biosafety Level (BSL) 1-4 facilities and Guidelines
22. Prevention of Viral Infections (Review)

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Lab: (if the "Lab Hours" is greater than zero this is required)

9. Course Student Learning Outcomes:

1.
Describe human cell anatomy and physiology.
2.
Describe the disease process of viral infections.
3.
Assess the current recommendations for virus infection prevention.
4.
Assess the role of viruses as a threat to the health of worldwide and local populations.

10. Course Objectives: *Upon completion of this course, students will be able to:*

- a. Demonstrate a knowledge and understanding of basic anatomy and physiology of the human body as it relates to viral infections.
- b. Critically evaluate the sometimes conflicting medical information concerning viruses.
- c. Demonstrate knowledge of local, national and world wide virus information resources and how to access them.
- d. Demonstrate an understanding of the transmission, symptoms and treatment of specific viral diseases.
- e. Explain and assess the different modalities used in viral infection treatment.
- f. Describe viral disease prevention strategies.
- g. Analyze scientific literature related to viruses.
- h. Describe careers and professions available in viral disease treatment and prevention.

11. Methods of Instruction: *(Integration: Elements should validate parallel course outline elements)*

- a. Activity
- b. Discussion
- c. Lecture

12. Assignments: *(List samples of specific activities/assignments students are expected to complete both in and outside of class.)*

In Class Hours: 54.00

Outside Class Hours: 108.00

a. In-class Assignments

1. Lecture quizzes and exams.
2. Student presentations.

b. Out-of-class Assignments

1. Assigned readings in text and supplementary materials
2. Internet searches of local and national virus related resources

13. Methods of Evaluating Student Progress: *The student will demonstrate proficiency by:*

- Term or research papers
- True/false/multiple choice examinations

14. Methods of Evaluating: Additional Assessment Information:

15. Need/Purpose/Rationale -- *All courses must meet one or more CCC missions.*

CSU GE Area E: Lifelong Understanding and Self-Development

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E - Lifelong Understanding and Self-Development

PO-GE C1-Natural Sciences

Explain concepts and theories related to physical, chemical, and biological natural phenomena.

Apply the scientific process and its use and limitations in the solution of problems.

IO - Scientific Inquiry

Identify components of the scientific method.

Analyze quantitative and qualitative information to make decisions, judgments, and pose questions.

16. Comparable Transfer Course

University System	Campus	Course Number	Course Title	Catalog Year
CSU	CSU San Bernardino	BIOL 217	Biology of Sexually Transmitted Diseases	2014-15

17. Special Materials and/or Equipment Required of Students:

18. Materials Fees: Required Material?

Material or Item

Cost Per Unit

Total Cost

19. Provide Reasons for the Substantial Modifications or New Course:

ENG 70/71 Change

20. a. Cross-Listed Course (*Enter Course Code*): *N/A*
b. Replacement Course (*Enter original Course Code*): *N/A*

21. Grading Method (*choose one*): Letter Grade Only

22. MIS Course Data Elements

- a. Course Control Number [CB00]: CCC000513188
b. T.O.P. Code [CB03]: 40300.00 - MicroBiology
c. Credit Status [CB04]: D - Credit - Degree Applicable
d. Course Transfer Status [CB05]: A = Transfer to UC, CSU
e. Basic Skills Status [CB08]: 2N = Not basic skills course
f. Vocational Status [CB09]: Not Occupational
g. Course Classification [CB11]: Y - Credit Course
h. Special Class Status [CB13]: N - Not Special
i. Course CAN Code [CB14]: *N/A*
j. Course Prior to College Level [CB21]: Y = Not Applicable
k. Course Noncredit Category [CB22]: Y - Not Applicable
l. Funding Agency Category [CB23]: Y = Not Applicable
m. Program Status [CB24]: 1 = Program Applicable

Name of Approved Program (*if program-applicable*): LIBERAL ARTS with emphasis in Math and Science
Attach listings of Degree and/or Certificate Programs showing this course as a required or a restricted elective.

23. Enrollment - Estimate Enrollment

First Year: 28

Third Year: 0

24. Resources - Faculty - Discipline and Other Qualifications:

- a. Sufficient Faculty Resources: Yes
b. If No, list number of FTE needed to offer this course: *N/A*

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25. Additional Equipment and/or Supplies Needed and Source of Funding.

N/A

26. Additional Construction or Modification of Existing Classroom Space Needed. (*Explain:*)

N/A

27. FOR NEW OR SUBSTANTIALLY MODIFIED COURSES

Library and/or Learning Resources Present in the Collection are Sufficient to Meet the Need of the Students Enrolled in the Course: Yes

28. Originator Alexa Sawa Origination Date 11/15/17