



One College Drive, Blythe CA 92225  
(760) 921-5500

Course Control Number: CCC000385689		
Course Outline Approval Dates		
Modality	Curriculum Committee	Board of Trustees
Face-to-face	4/11/19	5/14/19
Correspondence Ed.		
Distance Ed.		

### COURSE OUTLINE OF RECORD

#### Course Information

Course Initiator: Rosanna Hartline, Ph.D.			
CB01 - Subject and Course #: BIO 101			
CB02 - Course Title: Introduction to Biology Laboratory			
New Course: <input type="checkbox"/>		Non-Substantial: <input checked="" type="checkbox"/>	
		Substantial: <input type="checkbox"/>	
Articulation Request: <input checked="" type="checkbox"/> UC		<input checked="" type="checkbox"/> CSU	
		<input checked="" type="checkbox"/> CSU-GE	
		<input checked="" type="checkbox"/> IGETC	
Lecture Hours:		Laboratory Hours: 54	
		Clinical/Field Hours:	
CB06/CB07: Course Units: 1.0			
Prerequisites: BIO 100 or as a co-requisite.			
Co-requisites: BIO 100 or as a pre-requisite.			
Advisories:			
CB03 - TOP Code:		0401.00 - Biology, General	
CB04 - Credit Status:		D - Credit - Degree Applicable	
CB05 - Transfer Status:		B - Transferable to CSU only	
CB08 - Basic Skills Status:		N - Course is not a basic skills course	
CB09 - SAM Priority Code:		E - Non-Occupational	
CB10 - Cooperative Work:		N - Is not part of Cooperative Work Experience Education Program	
CB11 - Course Classification:		Y - Credit Course	
CB13 - Approved Special:		N - Course is not a special class	
CB21 - Prior Transfer Level:		Y - Not Applicable	
CB22 - Noncredit Category:		Y - Credit Course	
CB23 - Funding Agency:		Y - Not Applicable	
CB24- Program Status:		1 - Program Applicable	
Transfer Request:		A= UC and CSU	

Please select the appropriate box(s) of the modalities in which this course will be offered, and fill out the appropriate sections for that mode.

- Face-to-Face – Section B
- Correspondence Education – Section C
- Distance Education – Section D

## **JUSTIFICATION OF NEED:**

The need for Introduction to Biology Laboratory is based on community and student interest.

## **CATALOG DESCRIPTION:**

Laboratory and hands-on exposure to the biological sciences including the scientific method, data and measurement, microscopic analysis of cells, osmosis, diffusion, cell division, photosynthesis, cellular respiration, bacteria, protists, plants, fungi, invertebrate animals and vertebrate animals. BIO 100 is either a prerequisite or a co-requisite to BIO 101. Not for Biology major credit.

## **COURSE OBJECTIVES:**

1. Identify the structural components of the microscope.
2. Identify microscopic biological samples with a compound microscope.
3. Describe bacteria, protists, plants, fungi, and animals.
4. Identify structural components of animal and plant cells.
5. Create and interpret bar and line graphs.
6. Understand and apply the scientific method.

## **STUDENT LEARNING OUTCOMES:**

1. Interpret graphs presenting scientific data.
2. Identify structural components of animal and plant cells and their corresponding functions.
3. Predict relative changes in carbon dioxide and oxygen concentrations in response to an organism conducting photosynthesis or cellular respiration.

## **A. COURSE OUTLINE AND SCOPE**

### **1. Outline of topics or content:**

The following topics are included in the framework of the course. The order of presentation and relative emphasis will vary with each professor:

1. The scientific method
2. Microscopy
3. Structure and function of cells
4. Diffusion and osmosis
5. Photosynthesis and cellular respiration
6. Genetics
7. Bacteria
8. Protists
9. Plants
10. Fungi
11. Sensory organs
12. Human blood
13. Invertebrate animals
14. Vertebrate animals

### **2. If a course contains laboratory or clinical/field hours, list examples of activities or topics:**

1. Group discussions exploring the components of the scientific method.
2. Class collaboration to design and conduct experiments.
3. Examination of various samples with dissection and compound microscopes.
4. Analysis and quantification of cell ultrastructure.
5. Use of biological samples to observe osmosis.

### **3. Examples of reading assignments:**

Starr, Evers, and Starr, 2014, *Biology Concepts and Applications Without Physiology*, 9th Edition, Cengage Learning:

1. Sections 1.5 - 1.6
2. Sections 1.7 - 1.8
3. Sections 4.1, 4.4 - 4.10
4. Section 5.6
5. Sections 11.1 - 11.3
6. Sections 6.1 - 6.3

### **4. Examples of writing assignments:**

Writing assignments include written responses to specific questions exploring scientific and biological phenomena. Writing assignments may also include completion of a 250 word written report dealing with a subject related to the course.

### **5. Appropriate assignments to be completed outside of class:**

Outside assignments may include, but are not limited to the following:

1. Complete laboratory assignments giving written feedback to questions related to laboratory activities.
2. Create bar and line graphs from data collected in laboratory.

### **6. Appropriate assignments that demonstrate critical thinking:**

Examples of critical thinking questions from laboratory assignments:

1. Interpret your bar graph. Use full sentences in your answer. Include in your answer whether your idea about heights and gender appear to be supported by these data.
2. Write your own original question that can be answered by scientific inquiry.
3. Suppose you want to explain one of the main lessons of today's lab to one of your non-biology friends and explain in your own words why it is important to use a t-test when drawing conclusions and not just to compare means.
4. Explain how the composition (structure) of a mature red blood cell is intimately related and well-suited to its function.
5. Examine your data to help you describe the relationship between the concentration of sugar in the beaker and the change in mass of the potato.
6. If crossing over did not occur during meiosis, what effect would this have on the variability in a species?

### **7. Other assignments (if applicable):**

Other assignments may be assigned as considered appropriate by the professor.

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Check if Section B is not applicable

### **B. FACE-TO-FACE COURSE SECTIONS:**

#### **Face-to-face education**

Is a mode of delivery in which instruction is delivered in a traditional classroom setting, with instructor and students located simultaneously in the same classroom facility.

#### **1. Describe the methods of instruction:**

1. Laboratory studies
2. Hands-on learning
3. Collaborative learning
4. Traditional lecture

#### **2. Describe the methods of evaluating of student performance.**

A student's grade is based on multiple measures of performance. These methods may include, but are not limited to, the following:

1. Performance on examinations.
2. Effective laboratory participation.
3. Laboratory assignments.

**3. Describe how the confidentiality of the student's work and grades will be maintained.**

Instructors shall make reasonable efforts to protect the confidentiality of students' grades and graded work consistent with practices described in the Family Education Rights and Privacy Act (FERPA).

**4. If the course has a lab component, describe how lab work is to be conducted and how student work is to be evaluated.**

The laboratories provide hands-on exposure to science and biology and employ kinesthetic and critical-thinking activities relating to biological topics. Students are expected to work independently as well as in groups. Evaluation incorporates participation, performance on laboratory assignments, and performance on examinations.

NOTE: Students will be encouraged by instructors of this course to direct themselves to the College's Disabled Students' Programs and Services (DSP&S) department if they believe they have a learning disability.

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Check if Section C is not applicable

**C. CORRESPONDENCE EDUCATION COURSE SECTIONS (Correspondence, hybrid correspondence)**

**Correspondence education**

is a mode of delivery in which instructional materials are delivered by mail, courier or electronic transmission to students who are separated from the instructor by distance. Contact between instructor and students is asynchronous.

**Hybrid correspondence education**

is the combination of correspondence and face-to-face interaction between instructor and student.

**1. Describe the methods of instruction.**

**2. Describe the methods of evaluating student performance.**

**3. Describe how regular, effective contact between the instructor and a student is maintained.**

**4. Describe procedures that help verify the individual submitting class work is the same individual enrolled in the course section.**

**5. Describe procedures that evaluate the readiness of a student to succeed in a correspondence or hybrid correspondence course section.**

**6. Describe how the confidentiality of the student's work and grades will be maintained.**

**7. If the course has a lab component, describe how lab work is to be conducted and how student work is to be evaluated.**

**8. If the course requires specialized equipment, including computer and computer software or other equipment, identify the equipment, and describe how it is to be accessed by students.**

Note: Students will be encouraged by instructors of this course to direct themselves to the College's Disabled Students' Programs and Services (DSP&S) department if they believe they have a learning disability.

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Check if Section D is not applicable

**D. DISTANCE EDUCATION COURSE SECTIONS (online, ITV, hybrid)**

**Online education**

is a mode of delivery in which all instruction occurs online via the Internet. Student and instructor access to email and the Internet is required. Students are required to complete class work using email, chat rooms, discussion boards and other instructional online venues.

**Interactive television (ITV)**

is a mode of synchronous delivery in which instruction occurs via interactive television (closed circuit).

**Hybrid instruction**

is a combination of face-to-face instruction and online instruction.

**1. Describe the methods of instruction.**

**2. Describe the methods of evaluating of student performance.**

**3. Describe how regular, effective contact between the instructor and a student is maintained.**

**4. Describe procedures that help verify the individual submitting class work is the same individual enrolled in the course section.**

**5. Describe procedures that evaluate the readiness of a student to succeed in an online, ITV or hybrid course section.**

**6. Describe how the confidentiality of the student's work and grades will be maintained.**

**7. If the course has a lab component, describe how lab work is to be conducted and how student work is to be evaluated.**

**8. If the course requires specialized equipment, including computer and computer software or other equipment, identify the equipment, and describe how it is to be accessed by students.**

Note: Students will be encouraged by instructors of this course to direct themselves to the College's Disabled Students' Programs and Services (DSP&S) department if they believe they have a learning disability.

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**E. REPRESENTATIVE TEXTBOOKS AND OTHER READING AND STUDY MATERIALS:**

**List author, title, and current publication date of all representative materials.**

Starr, Evers, and Starr, 2014 (or most current edition), Biology Concepts and Applications Without Physiology, 9th Edition, Cengage Learning

**SIGNATURES**

**COURSE INITIATOR:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**DIVISION CHAIR:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**LIBRARY:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**CHAIR OF CURRICULUM COMMITTEE:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**SUPERINTENDENT/PRESIDENT:** \_\_\_\_\_

**DATE:** \_\_\_\_\_