Course Information

Division: Science
Course Number: BIO 182 (SUN# BIO 1182)
Title: General Biology II
Credits: 4
Developed by: David J. Henson
Lecture/Lab Ratio: 3 Lecture/3 Lab
Transfer Status: ASU NAU UA

<table>
<thead>
<tr>
<th>ASU</th>
<th>NAU</th>
<th>UA</th>
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<tr>
<td>BIO 182, Natural Science – General (SG)</td>
<td>BIO 182L –and— BIO 182</td>
<td>ECOL182R –and— ECOL182L</td>
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Activity Course: No
CIP Code: 26.0100
Assessment Mode: Pre/Post Test (50 Questions/100 Points)
Semester Taught: Spring
GE Category: Lab Science
Separate Lab: Yes
Awareness Course: No
Intensive Writing Course: No

Prerequisites
BIO 181

Description
Designed for Biology majors. Additional principles of structure and function of living things at molecular, cellular, and organismic and higher levels of organization.

Supplies
None
Competencies and Performance Standards

1. Identify the history and tenets of the evolutionary theory.
   
   **Learning objectives**
   
   *What you will learn as you master the competency:*
   
   a. Identify historical beliefs and discoveries influencing the rise of evolutionary theories.
   b. Describe how gene flow, drift and various forms of selection may lead to microevolution.
   c. Define speciation and influences, patterns, and types of speciation.
   d. Identify evidences of macroevolution.
   e. Describe systematics.
   f. Describe origin and biological evolutionary theories during the various eras and periods.

   **Performance Standards**
   
   *Competence will be demonstrated:*
   
   o through class discussion
   o on an objective test
   o on a lab practical

   *Criteria - Performance will be satisfactory when:*
   
   o learner identifies historical beliefs and discoveries influencing the rise of evolutionary theories
   o learner describes how gene flow, drift, and various forms of selection may lead to microevolution
   o learner describes speciation and influences, patterns, and types of speciation
   o learner identifies evidences of macroevolution
   o learner describes systematics
   o learner describes origin and biological evolutionary theories during the various eras and periods

2. Identify features of protistans and fungi

   **Learning objectives**
   
   *What you will learn as you master the competency:*
   
   a. Identify animal-like protistans.
   b. Identify plant-like protistans and algae.
   c. Identify parasitic and predatory molds
   d. Identify general characteristics of fungi
   e. Identify types of fungi

   **Performance Standards**
   
   *Competence will be demonstrated:*
   
   o through class discussion
   o on an objective test
   o on a lab practical

   *Criteria - Performance will be satisfactory when:*
   
   o learner identifies animal-like protistans
   o learner identifies plant-like protistans and algae
3. Identify bacterial and viral features.

**Learning objectives**

*What you will learn as you master the competency:*

a. Identify characteristics of bacteria.

b. Identify characteristics of bacterial growth and reproduction.

c. Identify types of bacteria.

d. Identify types of viruses.

e. Identify characteristics of viruses.

**Performance Standards**

*Competence will be demonstrated:*

- through class discussion
- on an objective test
- on lab practical

*Criteria - Performance will be satisfactory when:*

- learner identifies characteristics of bacteria
- learner identifies characteristics of bacterial growth and reproduction
- learner identifies types of bacteria
- learner identifies types of viruses
- learner identifies characteristics of viruses

4. Identify various types of plants and animals.

**Learning objectives**

*What you will learn as you master the competency:*

a. Identify evolutionary trends among plants.

b. Identify types of nonvascular plants.

c. Identify types of vascular plants.

d. Identify general characteristics of animals.

e. Identify types of invertebrate animals.

f. Identify types of vertebrate animals.

**Performance Standards**

*Competence will be demonstrated:*

- through class discussion
- on an objective test
- on a lab practical

*Criteria - Performance will be satisfactory when:*

- learner identifies evolutionary trends among plants
- learner identifies types of nonvascular plants
5. Identify principles of population ecology.

Learning objectives
What you will learn as you master the competency:

a. Describe characteristics of populations.
b. Describe characteristics of population growth.
c. Describe characteristics of life history patterns.

Performance Standards
Competence will be demonstrated:

- through class discussion
- on an objective test
- on a lab practical

Criteria - Performance will be satisfactory when:
- learner describes characteristics of populations
- learner describes characteristics of population growth
- learner describes characteristics of life history patterns

6. Identify features of communities.

Learning objectives
What you will learn as you master the competency:

a. Identify factors that shape communities.
b. Identify types of community interactions.
c. Identify patterns of biodiversity.

Performance Standards
Competence will be demonstrated:

- through class discussion
- on an objective test
- on a lab practical

Criteria - Performance will be satisfactory when:
- learner identifies factors that shape communities
- learner identifies types of community interactions
- learner identifies patterns of biodiversity

7. Identify features of ecosystems.

Learning objectives
What you will learn as you master the competency:

a. Identify structures of ecosystems.
b. Identify energy flow through ecosystems.
c. Identify various biogeochemical cycles.
d. Identify impact of change in ecosystems.

**Performance Standards**

*Competence will be demonstrated:*

- through class discussion
- on an objective test
- on a lab practical

*Criteria - Performance will be satisfactory when:*

- learner identifies structures of ecosystems
- learner identifies energy flow through ecosystems
- learner identifies various biogeochemical cycles
- learner identifies impact of change in ecosystems

8. **Identify the biology of behavior.**

**Learning objectives**

*What you will learn as you master the competency:*

a. Identify the heritable basis of behavior.
b. Identify the adaptive value of behavior.
c. Identify communication signals.
d. Identify mating and parental behaviors.
e. Identify benefits and costs of living in social groups.

**Performance Standards**

*Competence will be demonstrated:*

- through class discussion
- on an objective test
- on a lab practical

*Criteria - Performance will be satisfactory when:*

- learner identifies the heritable basis of behavior
- learner identifies adaptive value of behavior
- learner identifies communication signals
- learner identifies mating and parental behaviors
- learner identifies benefits and costs of living in social groups

**Types of Instruction**

Classroom Presentation
On Campus Laboratory and clinicals
Grading Information

Grading Rationale
Laboratory Work - 30%
Lecture Tests - 50%
Post Test - 10%

Grading Scale
A 100-89.5%
B 89.4-79.5%
C 79.4-69.5%
D 69.4-59.5%
F 59.4-00.0%