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**Ohio Articulation Number (OAN)  
Course Submission Form  
2005-2006**



College/University Owens Community College

Course(s) Submitted(Title & Course #) BIO 202 General Biology II for  
Ohio Articulation Number OSC 004

Date 2/1/06 Course 1 of a 1 Course OAN mapping.

Name and title of individual submitting on behalf of the college/university

Name Bruce Busby Title Associate Vice President, Academic Services

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Credit Hours 5 qtr \_\_\_\_\_ sem 5

Lecture Hours 4

Laboratory Hours 3 (if applicable)

Pre-Requisites(s) Course work (if applicable) BIO 202 General Biology II

Placement Score (if applicable)

(Name of test) N/A

(Domain) \_\_\_\_\_ (Score) \_\_\_\_\_

Catalog/Course Description (Includes Course Title and Course #)

A continuation of BIO 201 that focuses on ecology, taxonomy, major groups of plants and animals, development and animal behavior.

Texts/Outside Readings/Ancillary Materials

**MAJOR TEXT:**

Campbell and Reece, 2005, Biology, 7th edition Volume II, Chapters 27-55.  
Pearson Custom Publishing.

**LAB TEXT:**

Vodopich and Moore, 2005, Biology Laboratory Manual, seventh edition,  
McGraw – Hill, publishers.

## Course Objectives and/or Plan of Work

**OBJECTIVES:** By completing this course, the student should be able to:

1. understand how organisms interact with one another and their environment,
2. describe how such interactions are threatened by current human behavior,
3. describe how organisms are classified,
4. recognize characteristics unique to several groups of microorganisms, plants, and animals. These characteristics include how such organisms gather nutrients, grow, and reproduce,
5. describe several features of plant growth, metabolism, and reproduction,
1. read and study science, and recognize contributors to biology.

## Description of Assessment and/or Evaluation of Student Learning

**LECTURE:** Evaluation of the student's performance in the lecture portion of the course will be determined by 2 quizzes consisting of 20 questions worth 1 point each, 10 "pop" quizzes worth 5 points each, and 4 exams. Three of the exams will not be comprehensive and will consist of 30 multiple-choice questions worth 1 point each, 10 fill-in/ short-answer questions worth 1 point each, and 2 essay questions worth 5 points each. The fourth exam will be given during exam week and will consist of 30 1-point non-comprehensive multiple-choice questions on material presented since the last exam, 10 short-answer/ fill-in questions worth 1 point each, 2 5-point essay questions from material presented since the last exam, and 10 1-point multiple-choice questions over material from the first 3 exams. There are 300 possible points from the lecture part of the course.

2 quizzes	20 pts each	40 pts
10 "pop" quizzes	5 pts each	50 pts
3 non-comprehensive exams	50 pts each	150 pts
<u>1 mixed final</u>	60 pts	<u>60 pts</u>
<b>TOTAL</b>		<b>300 pts</b>

**LAB:** Evaluation of the student's performance in the laboratory portion of the course will be determined as follows:

3 lab reports*	20 pts each	60 points
8 question sets	10 pts each	80 points
<u>2 practical exams</u>	<u>30 pts each</u>	<u>60 points</u>
<b>TOTAL</b>		<b>200 points</b>

**Lab Procedures:**

There will be 12 exercises, 1 field trip, and 2 practical exams.

The student will have no more than 1 week to turn in the question set or lab report.

The question sets will usually come from the manual.

\*Lab reports will be utilized where the experimental nature of the assignment makes this format most appropriate.

The lab exams will consist of 30 practical questions and will be given the 6<sup>th</sup> and last labs of the semester.

**GRADING:**

Grading for BIO 202 is based on a total point accumulation system. The points received in lecture will be combined with the points received in lab for a total of 500 possible points. Letter grades are assigned according to the following scale:

500 to 450 points = A  
449 to 400 points = B  
399 to 350 points = C  
349 to 300 points = D  
299 and fewer points = F

Master Syllabi and Working Syllabi (if both are used)

**Course Outline:****BIO 202 Course Outline****General Biology II  
BIO 202**

: 5 (4 lecture – 3 Lab)

**Prerequisite:** BIO 201

**COURSE DESCRIPTION:**

A continuation of BIO 201 that focuses on ecology, taxonomy, major groups of plants and animals, development and animal behavior.

**MAJOR TEXT:**

Campbell and Reece, 2005, Biology, 7th edition Volume II, Chapters 27-55.  
Pearson Custom Publishing.

**LAB TEXT:**

Vodopich and Moore, 2005, Biology Laboratory Manual, seventh edition, McGraw – Hill, publishers.

**OBJECTIVES:** By completing this course, the student should be able to:

1. understand how organisms interact with one another and their environment,
2. describe how such interactions are threatened by current human behavior,
3. describe how organisms are classified,
4. recognize characteristics unique to several groups of microorganisms, plants, and animals. These characteristics include how such organisms gather nutrients, grow, and reproduce,
5. describe several features of plant growth, metabolism, and reproduction,
6. read and study science, and recognize contributors to biology.

**COURSE REQUIREMENTS:**

1. Attendance at lecture is very important, since most of the exam material will come from the lecture notes. **Civil behavior is expected in lecture class and in lab.**
2. Required readings from the texts will be assigned to support the lectures and labs. Occasionally, there will be questions on the exams that will come directly from the readings on material not covered in lecture.
3. Notes from both lecture and readings should be kept in a notebook.
4. **Lab Attendance: Attendance at lab is essential for student success!!!**

**EVALUATION:**

**LECTURE:** Evaluation of the student’s performance in the lecture portion of the course will be determined by 2 quizzes consisting of 20 questions worth 1 point each, 10 “pop” quizzes worth 5 points each, and 4 exams. Three of the exams will not be comprehensive and will consist of 30 multiple-choice questions worth 1 point each, 10 fill-in/ short-answer questions worth 1 point each, and 2 essay questions worth 5 points each. The fourth exam will be given during exam week and will consist of 30 1-point non-comprehensive multiple-choice questions on material presented since the last exam, 10 short-answer/ fill-in questions worth 1 point each, 2 5-point essay questions from material presented since the last exam, and 10 1-point multiple-choice questions over material from the first 3 exams. There are 300 possible points from the lecture part of the course.

2 quizzes	20 pts each	40 pts
10 “pop” quizzes	5 pts each	50 pts
3 non-comprehensive exams	50 pts each	150 pts
<u>1 mixed final</u>	60 pts	<u>60 pts</u>
TOTAL		300 pts

**LAB:** Evaluation of the student's performance in the laboratory portion of the course will be determined as follows:

3 lab reports*	20 pts each	60 points
8 question sets	10 pts each	80 points
<u>2 practical exams</u>	<u>30 pts each</u>	<u>60 points</u>
TOTAL		200 points

**Lab Procedures:**

There will be 12 exercises, 1 field trip, and 2 practical exams.

The student will have no more than 1 week to turn in the question set or lab report.

The question sets will usually come from the manual.

\*Lab reports will be utilized where the experimental nature of the assignment makes this format most appropriate.

The lab exams will consist of 30 practical questions and will be given the 6<sup>th</sup> and last labs of the semester.

**GRADING:**

Grading for BIO 202 is based on a total point accumulation system. The points received in lecture will be combined with the points received in lab for a total of 500 possible points. Letter grades are assigned according to the following scale:

500 to 450 points = A
449 to 400 points = B
399 to 350 points = C
349 to 300 points = D
299 and fewer points = F

Cheating will not be tolerated and will be dealt with according to the college handbook.

**OUTSIDE SPEAKERS AND FIELD TRIPS:**

Occasionally speakers from nearby institutions or from Owens Community College will be invited to give their perspectives on topics under discussion. Also, there may be opportunities to go off campus to visit sites that are relevant to topics under discussion.

## **LECTURE CONTENT:**

Text: Campbell and Reece, Biology Volume II, 7th edition, 2005, Pearson Custom Publishing, Chapters 27-55.

Week 1: Chapters 50 & 52

Define the following terms: community, ecosystem, biome, population, niche, biotic potential, carrying capacity. What are the 3 types of dispersion? What is the difference between a K strategist and an r strategist? What are the 3 types of survivorship curves? What are the different types of population growth limitations? What are different types of competition, competitive exclusion? What is co-evolution? How do plants defend themselves from being eaten? What is mimicry? What are the 3 classes of symbiosis? What is the process of ecological succession? What is character displacement?

Week 2: Chapters 53 & 51 (.5 and .6)

Define the following terms: behavioral ecology, foraging, territory, parental investment, group selection, sexual selection, altruistic behavior. What are the advantages and disadvantages of living in a group? What are biogeochemical cycles? Be familiar with the hydrological, carbon, nitrogen, oxygen, and phosphorous cycles. Rank deserts, tropical rain forests, and temperate forests in terms of primary productivity. What is a trophic level, and how efficient is energy transfer from 1 trophic level to the next? Why are the major deserts of the world where they are? Know about food chains.

Week 3: Chapters 54 & 55

What is a biome? What are the 3 major kinds of oceanic habitats? List the 7 major biomes in the world and discuss their characteristics. What biological event fostered the rapid growth in human populations? Define shifting agriculture. How are agricultural techniques destroying the tropical forests? What is the significance of the ozone layer? What are the 2 types of conservation?

Week 4: Chapters 27

What are the names of the groups in the current hierarchical taxonomic system? What are the 5 kingdoms? What is the endosymbiotic hypothesis? What is the general structure of a virus? What determines the host range of a virus? What is the difference between a virulent and a temperate virus? What are minus-strand RNA viruses? What is the structure of the bacterial cell wall? How does the cell wall differ between gram-positive and gram-negative bacteria? What chemicals are used by chemoautotrophic bacteria? How do the Archeobacteria differ from all other bacteria? What is the greatest importance of the cyanobacteria?

Week 5:

Chapters 28

Name 2 important features that evolved with eukaryotes. Name a characteristic unique to each of the following phyla: Acrasiomycota, Chlorophyta, Ciliophora, Dinoflagellata, Euglenophyta, Myxomycota, Phaeophyta, Rhodophyta .

Week 6:

Chapter 29

What are the superficial similarities between fungi and the plant kingdom? What are the 2 known mutualistic associations that involve fungi? What is a hypha? What are the steps in fungal sexual reproduction? What are the 3 divisions of the kingdom Fungi? What is meant by alternations in generations in plants? Define sporophyte and gametophyte. Differentiate between microgametophytes and megagametophytes. Compare vascular tissue in mosses, liverworts, and hornworts.

Week 7:

Chapters 30 & 38

What is a seed? Know the conifer life cycle. Name ways in which flowering plants differ from the rest of seed plants. Know the parts of a flower. What is double fertilization? Why is it thought that all angiosperms were derived from a single ancestor? Name the 2 classes of angiosperms. Compare pistillate and staminate flowers. Compare dioecious and monoecious plants. What are the characteristics of flowers that are pollinated by the following: butterflies, social bees, solitary bees, moths, birds, wind. Know your fruits. Describe asexual reproduction in plants.

Week 8:

Chapters 35 & 36

Be familiar with the organization of the plant body. Be familiar with the different plant cell types. Where in the plant does primary growth occur? Where does secondary growth occur? What are the functions and characteristics of xylem and phloem? What are the location and function of vascular cambium? Compare cross sections of monocot and dicot roots. Define the following terms: capillary water, field capacity of soil, root pressure. Know the characteristics of various soils.

Week 9:

Chapter 37

Be familiar with the tissues found in leaves. What are stomata, and what is special about guard cells? How are water, minerals, and carbohydrates transported in stems? Define the following terms: transpiration, cavitation, translocation. Is most nutrient movement within a plant active or passive?

Week 10:

Chapter 39

Compare developmental control systems of animals and plants. What is meant by plant

cell totipotency, and who confirmed this? Compare early development of angiosperms and gymnosperms. What is phytochrome, and how does it work? Know the function and site of production of the following plant hormones: auxins, cytokinins, gibberellins, ethylene, abscisic acid. What is a tropism? Define the following: phototropism, gravitropism, thigmotropism, photoperiodism, dormancy.

Week 11: Chapters 31 & 32

What is the primary difference between vertebrate and invertebrate animals? What is the structural difference between animal and plant cells? What is a coelom? What are the different patterns of embryonic development between protostomes and deuterostomes? For each of the following phyla, describe the basic body plan and tell how members get nutrients and reproduce: Porifera, Cnidaria, Ctenophora, Platyhelminthes, Nematoda, Rotifera. What is one of the most important functions of a pseudocoelom in those animals that possess one?

Week 12: Chapter 33

What are some advantages of possessing a body cavity with respect to circulation, digestion, and reproduction? What prominent feature characterizes the lophophorate animals? What is the basic body plan of a mollusk? What are the classes in phylum Mollusca? What is the relationship between the segmentation of annelids and arthropods as compared with segmentation in vertebrates? What type of circulatory system is found in annelids? What are the classes in phylum Annelida? What are the 3 arthropod subphyla? What happens during ecdysis? Describe arthropod digestive systems. Which arthropod organ system transports oxygen? Describe terrestrial arthropods' excretory system. Describe insect metamorphosis.

Week 13: Chapter 34

Describe the body plan and the skeleton of echinoderms. How do sea cucumbers differ from other echinoderms? What are the 3 primary characteristics of the chordates? What are the 7 classes of vertebrates (give examples of each)? What is the primary disadvantage of a bony skeleton compared to one made of cartilage? Which vertebrates are ectothermic (poikilothermic) and which are endothermic (homeothermic)? What are the 3 groups of mammals (give examples)?

Week 14: Chapter 46

What type of sexual reproduction is most common in marine organisms? How is reptilian and avian fertilization different from that of amphibians and most fishes? Describe advantages to internal fertilization. What are the 2 phases of the female reproductive cycle in mammals? Know the role of hormones in these cycles.

Week 15:

Chapter 47

What are the 3 stages of fertilization? Describe cleavage patterns in different classes of vertebrates. Describe the formation of the blastula. What happens during gastrulation? What is neurulation? What is induction? What are the amnion and chorion? What events occur during the first four weeks of human development?

Week 16:

Chapter 51 (.1 - .4)

What types of behaviors are characterized as instincts? What is learning? What types of studies demonstrate that genes affect behavior? What is ethology? Describe different types of imprinting. What is a taxis? What is migration? How do animals communicate?

Revised by Anne M. E. Bullerjahn, PhD      January 31, 2006

Working Lecture Syllabus:

**Owens Community College**

**Arts and Science Division**

**SYLLABUS**

**Course Title:**            **General Biology 2**  
**Course Number:**    **BIO 202**      **Credit Hours: 5**  
**Prerequisite:**        **BIO 201**

Dr. Anne Bullerjahn                      MS 163      (      567)            661-7775  
anne\_bullerjahn@owens.edu

**Office Hours:**

    **Mon.:** 11:30 – 1:30 **Wed.:** 11:30 – 12:30      **Tue. & Thur.:** 2:30 – 4:30

**COURSE DESCRIPTION:**

This is the second semester of a two-semester course which will serve as the basis for all students wishing to pursue a degree in biology and other students who need a comprehensive science course that includes a lab. During the second semester, specific groups of organisms will be examined in detail. These groups include micro-organisms, plants, and animals. The characteristics of these organisms that will be examined include how the structure of the organism allows it to gather nutrients, reproduce, and live in its environment. Ecology will also be studied. **The lab section is a required part of the course.**

**MAJOR TEXT:**

Campbell and Reece, 2005, Biology, seventh edition, Pearson Education, Inc. (Publishing Company) Chapters 27-55.

**LAB TEXT:**

Vodopich and Moore, 2005, Biology Laboratory Manual, seventh edition, McGraw Hill Publishers

**OBJECTIVES:**

By completing this course, the student should be able to:

1. understand how organisms interact with one another and with their environment.
2. describe how such interactions are threatened by current human behavior.
3. describe how organisms are classified.
4. recognize characteristics unique to several phyla of microorganisms, plants, and animals. These characteristics include how such organisms gather nutrients, grow, and reproduce.
5. describe several features of plant growth, metabolism, and reproduction.
6. read and study science, and recognize contributors to Biology.

**COURSE REQUIREMENTS:**

1. Attendance at lecture is very important, since most of the exam material will come from the lecture notes.
2. Required readings from the texts will be assigned to support the lectures and labs. Occasionally, there will be questions on the exams that will come directly from the readings on material that will not be covered in lecture.
3. Notes from both lectures and readings should be kept in a notebook.
4. Lab Attendance: Attendance at lab is essential for student success.

**EVALUATION:**

**Lecture:** Evaluation of the student's performance in the lecture portion of the course will be determined by performance on 2 scheduled quizzes, and 4 exams. The quizzes will be worth 20 points each, and the format will be at the discretion of the instructor. Three of the exams will not be comprehensive and will consist of fill-in-the-blank questions, multiple-choice questions, and 2 short essay questions worth 5 points each. The fourth exam will be given during exam week and will consist of 10 fill-in and 30 non-comprehensive multiple-choice questions on material presented after exam #3 and 10 comprehensive multiple-choice questions covering material from earlier tests.

There will also be 2 short essay questions worth 5 points each. The “pop” quizzes will be given at the discretion of the instructor. There are no make-up “pop” quizzes. If you are in class and paying attention, you should earn all 5 “pop” quiz points. The total points possible for the lecture part of the course is 300.

2 scheduled quizzes	20 pts each	40 points
10 “pop” quizzes	5 pts each	50 points
3 non-comprehensive exams	50 pts each	150 points
1 final exam	60 points	<u>60 points</u>
		300 points

If you are unable to take a **test or scheduled quiz** at the assigned time, please contact the instructor **immediately**. The timing and format of make-up quizzes and exams is at the discretion of the instructor.

**Lab:** Evaluation of the student's performance in the laboratory portion of the course will be determined as follows:

3 lab reports*	20 points each	60 points
10 question sets	10 points each	100 points
2 lab exams	25 points each	<u>50 points</u>
		200 points

**Lab Procedures:**

There will be 12 exercises, 1 field trip, and 2 lab practical exams.

The students will have **no more than 1 week** to turn in the question sets or lab reports.

\*Lab reports will be utilized where the experimental nature of the lab assignment makes this format more appropriate than question sets. Students will write 3 lab reports in BIO 202 for 20 points each. The lab exams will consist of practical questions and will be given the 6<sup>th</sup> and last labs of the semester.

**GRADING:**

Grading for BIO 202 is based on a total point accumulation system. The points from the lecture part will be combined with the points from the lab part for a total of 500 possible points.

Letter grades are assigned according to the following scale:

- 500 to 450 total points = A
- 449 to 400 total points = B
- 399 to 350 total points = C
- 349 to 300 total points = D

299 and fewer total points = F

**Cheating will not be tolerated and will be dealt with according to the college handbook.**

**OUTSIDE SPEAKERS and FIELD TRIPS:**

Occasionally speakers from nearby institutions will be invited to give their perspectives on subjects under discussion. Also, there may be field trips to local sites that will support class discussions

**DISABILITY STATEMENT:**

If you have a disability or acquire one, you may be entitled to receive individualized services and/or accommodations intended to assure you an equal opportunity to participate in and benefit from the program. To receive more information or to apply for services, please contact the Disability Resource Services Officer.

**STUDENT ATHLETE POLICY:**

All student athletes will be treated the same as all other students as per policies in the course syllabus.

**COLLEGE'S STATEMENT ON THE ASSESSMENT OF STUDENT LEARNING:**

Please refer to page 13 of the 2005 - 2006 college catalog for the College's Statement on the Assessment of Student Learning.

**LECTURE CONTENT:**

**Text:** Campbell & Reece, Biology, 7th edition, 2005, Pearson Education, Inc., Chapters 27-55.

**Website:** <http://blackboard.owens.edu>

Week 1: Chapters 50 & 52

What is Ecology? What is meant by "biotic" and "abiotic" factors? What is a biome? What are the major kinds of oceanic habitats? List the major biomes in the world and discuss their characteristics. Why are the major deserts of the world where they are? Define the following terms: ecology, community, ecosystem, biome, population, niche, biotic potential, carrying capacity. What are the 3 types of dispersion? What is the difference between a K strategist and an r strategist? What are the 3 types of survivorship curves? What are the different types of population growth limitations?

Week 2: Chapters 53 & 51 (.5 and .6)

What are different types of competition, competitive exclusion? What is co-evolution? What is character displacement? How do plants defend themselves from being eaten? What is mimicry? What are the 3 classes of symbiosis? What is the process of ecological succession?

Define the following terms: behavioral ecology, foraging, territory, parental investment, group selection, sexual selection, altruistic behavior. What are the advantages and disadvantages of living in a group?

Week 3: Chapters 54 & 55

What are biogeochemical cycles? Be familiar with the hydrological, carbon, nitrogen, and phosphorous cycles. Rank deserts, tropical rain forests, and temperate forests in terms of primary productivity. What is a trophic level, and how efficient is energy transfer from 1 trophic level to the next? Know about food chains. What is the significance of the ozone layer? What biological event fostered the rapid growth in human populations? What are the 3 levels of biodiversity? What are 4 major threats to biodiversity? How are agricultural techniques destroying the tropical forests? What are the 2 types of conservation?

Week 4: Chapter 27

**QUIZ #1 (Tuesday, January 31)**

What are the names of the groups in the current hierarchical taxonomic system? What are the 6 kingdoms? What is the Endosymbiont Theory? What is the general structure of a virus? What determines the host range of a virus? What is the structure of the bacterial cell wall? How does the cell wall differ between gram-positive and gram-negative bacteria? What chemicals are used by chemoautotrophic bacteria? How do the Archeobacteria differ from all other bacteria? What is the greatest importance of the Cyanobacteria?

Week 5: Chapters 28

Name 2 important features that evolved with eukaryotes. Name a characteristic unique to each of the following Protist clades: Alveolata, Amoebozoa, Chlorophyta, Cercozoa and Radiolaria, Diplomonadida, Euglenozoa, Parabasala, Rhodophyta, Staminopila (See Table 28.1) **REVIEW**

Week 6: Chapter 29

**EXAM 1 (Tuesday, February 14)**

What are some characteristics that allowed plants to live on land? What is meant by alternations in generations in plants? Define sporophyte and gametophyte. Compare reproduction in mosses, liverworts, hornworts, and ferns.

Week 7: Chapters 30 & 38

What is a seed? Know the conifer life cycle. Name ways in which flowering plants differ from the rest of seed plants. Know the parts of a flower. What is double fertilization? Why is it thought that all angiosperms were derived from a single ancestor? Name the 2 classes of angiosperms. Compare perfect and complete flowers. Compare dioecious and monoecious plants. What are the characteristics of flowers that are pollinated by the following: butterflies, social bees, solitary bees, moths, birds, wind. Know your fruits. Describe asexual reproduction in plants. What are some promises and problems of plant biotechnology?

Week 8: Chapters 35 & 36

Be familiar with the organization of the plant body. Be familiar with the different plant cell types. Where in the plant does primary growth occur? Where does secondary growth occur? What are the functions and characteristics of xylem and phloem? What are the location and function of vascular cambium? Compare cross sections of monocot and dicot roots. Be familiar with the tissues found in leaves. What are stomata, and what is special about guard cells?

Week 9: Chapters 37

### QUIZ #2 (Thursday, March 16)

How are water, minerals, and carbohydrates transported in stems? Define the following terms: transpiration, cavitation, translocation. Is most nutrient movement within a plant active or passive? Define the following terms: capillary water, field capacity of soil, root pressure. Know the characteristics of various soils.

Week 10: Chapter 39

Compare developmental control systems of animals and plants. What is meant by plant cell totipotency, and who confirmed this? Compare early development of angiosperms and gymnosperms. What is phytochrome, and how does it work? Know the function and site of production of the following plant hormones: auxins, cytokinins, gibberellins, ethylene, abscisic acid. What is a tropism? Define the following: phototropism, gravitropism, thigmotropism, photoperiodism, dormancy. **Review**

Week 11: Chapters 31 & 32

### EXAM 2 (Tuesday, March 28)

What is a hypha and mycelium? How do fungi gather nutrients? What are the steps in fungal sexual reproduction? What are the 5 phyla of the kingdom Fungi? What are the 2 known mutualistic associations that involve fungi? What is the primary difference between vertebrate and invertebrate animals? What is the structural difference between animal and plant cells? What is a coelom? What are the different patterns of embryonic development between protostomes and deuterostomes?

Week 12:

Chapter 33

What are some advantages of possessing a body cavity with respect to circulation, digestion, and reproduction? For each of the following phyla, describe the basic body plan and tell how members get nutrients and reproduce: Porifera, Cnidaria, Ctenophora, Platyhelminthes, Nematoda, Rotifera. What is one of the most important functions of a pseudocoelom in those animals that possess one? What prominent feature characterizes the lophophorate animals? What is the basic body plan of a mollusk? What are the classes in phylum Mollusca? What is the relationship between the segmentation of annelids and arthropods as compared with segmentation in vertebrates? What type of circulatory system is found in annelids? What are the classes in phylum Annelida? What are the 4 arthropod subphyla? What happens during ecdysis? Describe arthropod digestive systems. Which arthropod organ system transports oxygen? Describe terrestrial arthropods' excretory system. Describe insect metamorphosis. Describe the body plan and the skeleton of echinoderms. How do sea cucumbers differ from other echinoderms?

Week 13:

Chapter 34

What are the 3 primary characteristics of the chordates? What are 10 clades of vertebrates (give examples of each – Figure 34.2)? Which vertebrates are ectothermic (poikilothermic) and which are endothermic (homeothermic)? What are the 3 groups of mammals (give examples)? Review some characteristics of hominid evolution **Review.**

Week 14:

Chapter 46

**EXAM 3 (Tuesday, April 18)**

What type of sexual reproduction is most common in marine organisms? How is reptilian and avian fertilization different from that of amphibians and most fishes? What are the 2 phases of the female reproductive cycle in mammals? Know the role of hormones in these cycles. Describe spermatogenesis and oogenesis, as well as other reproductive structures. Be able to describe reproduction in spiders, birds, fishes.

Week 15:

Chapter 47

What are the 3 stages of fertilization? Describe cleavage patterns in different classes of vertebrates. Describe the formation of the blastula. What happens during gastrulation? What is neurulation? What is induction? What are the amnion and chorion? What events occur during each trimester of human development?

Week 16:

Chapter 51 (.1 - .4)

What types of behaviors are characterized as instincts? What is learning? What types of studies demonstrate that genes affect behavior? What is ethology? Describe different types of imprinting. What is a taxis? What is migration? How do animals communicate? **REVIEW**

**FINAL EXAM:**      **Tuesday, May 9**

Working Laboratory Syllabus:

**BIO 202 – GENERAL BIOLOGY II  
LABORATORY SYLLABUS  
OWENS COMMUNITY COLLEGE  
Select Semester Semester, Select Year**

**Course Section:**                      *Type in your course section number here*  
**CRN:**                                      *Type in your CRN here*  
**Instructor:**                              *Type in your name here*  
**Phone:**                                    *Type in your phone number here (if applicable)*  
**College Voice Mail:**                  *Type in your college voice mail extension here*  
**Office Hours:**                          *Type in your office hours or availability*  
*here (if applicable)*  
**E-Mail:**                                    *Type in your email address here*

**Course Description: (Lecture and Laboratory)**

**This is the laboratory portion for the second semester of a two-semester course which will serve as the basis for all students wishing to pursue a degree in biology and other students who need a comprehensive science course that includes a lab. During the second semester, specific groups of organisms will be examined in detail. These groups include micro-organisms, plants, and animals. The characteristics of these organisms that will be examined include how the structure of the organism allows it to gather nutrients, reproduce, and live in its environment. Ecology will also be studied. The lab section is a required part of the course.**

**General Laboratory Objectives:**

This laboratory is associated with the lecture portion of BIOLOGY 202. Students will acquire a familiarity with standard biological techniques and procedures.

**Specific Laboratory Objectives:**

- Understand how organisms interact with one another and with their environment.
- Describe how such interactions are threatened by current human behavior.
- Describe how organisms are classified.
- Recognize characteristics unique to several phyla of microorganism, plants and animals. Including how such organisms gather nutrients, grow and reproduce.

- Describe several features of plant growth, metabolism and reproduction.

### **Required Materials:**

- *Campbell, Neil A., and J.B. Reece, Biology, Seventh Edition, Pearson/Benjamin Cummings, 2005.*
- *Vodopich, D.S. and R. Moore, Biology Laboratory Manual, Seventh Edition, WCB McGraw-Hill, 2005.*

### **Laboratory Attendance Policy:**

**Attendance is taken at each laboratory session. If you are more than 30 minutes late for a laboratory you will not be permitted to attend that session. During the first 30 minutes your instructor covers the basic information necessary to successfully complete the laboratory, mandatory safety issues, precautions and location of needed materials. After the session has begun, for safety purposes, your instructor needs to be working with all students, not covering the information for those students who are late. Therefore, if you are more than 30 minutes late, you will not be permitted to attend the laboratory and will be counted absent. You are encouraged to obtain missed information from other students in the laboratory. You will not be permitted to submit laboratory assignments for sessions in which you have been counted absent.**

To achieve success in this course, laboratory attendance is critically important.

- You will not receive any points for any of the work from a missed laboratory session.
- You are **ONLY** permitted to attend the laboratory section in which you are registered.
- There are no make-up laboratory sessions.
- Students retaking the course must repeat both the lecture and the laboratory portion.
- Laboratory grade is worth 40% of overall BIO 201 grade.

### **Safety Requirements:**

- **All eating, drinking and smoking are not permitted in the laboratory.**
- **Non-registered persons are not permitted in the laboratory.**
- No shorts, sandals or open-toed shoes are permitted in the laboratory. You will **NOT** be allowed to enter the laboratory without proper and safe footwear.

### **Responsibilities:**

- Read the laboratory assignment and appropriate lecture material prior to each laboratory session. It is recommended that a laboratory notebook be kept to record observations, experimental results and instructor notes.
- Be on time and use the full laboratory period.

- Ask questions and participate in each activity.
- Turn in all work as assigned.
- **CLEAN UP:** Be certain that your area of the laboratory table is properly cleaned after use. Wash and return all glassware and other instruments to the proper areas. Check the sink to be sure that it is clear of all glassware and trash.

### **Laboratory Evaluation**

The laboratory grade will be based on laboratory assignments and laboratory exams.

3 Laboratory reports (20 points each)	60 points
9 Question sets (10 points each)	90 points
1 Midterm exam	25 points
1 Final exam	25 points
* Lowest question set (10 points) will be automatically be dropped	
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Total	200 points

**There is absolutely NO provision for any EXTRA CREDIT to be given beyond the designated points for each laboratory exam and activity.**

### **Laboratory Reports and Question Sets:**

A laboratory report or question set will be specifically assigned for each experiment performed. See the attached weekly schedule.

Each laboratory report will be graded on a 20-point scale. Each question set will be graded on a 10-point scale. Both questions sets and reports are due at the beginning of the next laboratory session.

The lowest question set score will be dropped. **Eight question sets will be completed and the lowest score will be dropped.**

There are NO make-up laboratory sessions.

You will not receive any points for any of the work from a missed laboratory session.

All assignments are due at the beginning of laboratory period after the assignment was given. Late assignments will receive a 10% grade deduction for each day late. Any assignment over 1 week late will receive a zero (0%) grade. Late reports **MUST** be submitted to the Copy Center in Administration Hall (Toledo Campus) and the Mail/Copy Center (Findlay Campus). Be sure to include your name, instructor's name and course/section number on the assignment. No laboratory work will be accepted at the Toledo Campus Math/Science Department office.

### **Laboratory Exams:**

The exam #1 and exam #2 will each consist of 25 questions. Each question will be worth 1 point for a total of 25 points.

The exam questions will be comprised from material covered in the laboratory manual, experiments, and laboratory lectures. Exams will include the following types of questions: multiple-choice, practical application, fill-in the blank, and short essay.

- The exam #1 (lab activity 6) will cover laboratories 1 to 5.
- The exam #2 (lab activity 14) will include material from the remaining laboratories 6 –13 and 15.
- The final laboratory exam is NOT comprehensive.
- There will be NO open book or open notes allowed for the exams.

The student MUST contact the laboratory instructor within 1 week of missing the exam #1 in order to make arrangements for a make-up exam.

If a student misses exam #2, the student must contact the instructor on the day of the missed exam.

A student who misses a laboratory exam may choose one of the following options:

- Take an essay exam by the date and time as assigned by the instructor. **All make-up exams will be in an essay format.**
- Not take the exam and receive 0 points.

### **College's Statement on Cheating and Plagiarism**

Dishonest scholarly practices include but are not limited to, taking, using, or copying another's work and submitting it as one's own. Refer to pages 58 and 59 of the 2005 - 2006 college catalog for the college's official statements on cheating and plagiarism.

#### College's Statement on the Assessment of Student Learning

Please refer to page 13 of the 2005 - 2006 college catalog for the College's Statement on the Assessment of Student Learning.

### **lete Statement**

All student athletes will be treated the same as all other students as per policies in the course syllabus and college's student handbook.

### **ervices**

### **ervices**

If you have a disability or acquire one, you may be entitled to receive individualized services and/or accommodations intended to assure you an equal opportunity to participate in and benefit from the program. To receive more information or to apply for services, contact the **Disability Resources Services Office** at 567-661-7007 (Toledo Campus) or 567-429-3500 (Findlay Campus).

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For assistance in writing your laboratory reports, you are encouraged to use the **College Writing Center** located on the Toledo Campus in College Hall 156D (567-661-7351), on the Findlay Campus in the Faculty House (567-429-3509) or see your instructor.

**ence Learning Center**

The staff of the **Math/Science Department Natural Science Learning Center** is available for further assistance. A schedule of hours of operation for the NSLC on both the Toledo and Findlay campuses are posted throughout the Math/Science building (Toledo Campus) and Classroom building (Findlay Campus).

**See attached weekly laboratory schedule for semester dates and assignments.**

Additional Documentation

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OBR Use

Action

Approved	
Additional Information Requested	
Rejected	
Date	

## Ohio Articulation Number Form Directions

This form is used to submit your course information to the Ohio Board of Regents, for all courses that make up OAN requirements. This document is a form, so the only fields that need to be filled in can be. When you open this, make sure the top of the screen, where the name of the document is displayed, says "Document1" or something similar to that. When you open this form from a location other than inside of word, it creates a blank template to fill in. Please fill it in with the appropriate course information from your institution. All of the fields in this document are expandable, and will grow to fit as much data in them as you need. Note that these fields are implemented as MS Word tables. Keep that in mind as you are copying and pasting between your syllabi and this form.

Once you are done entering your course information, you need to save this file. Since Word opened a blank version of this file, you will need to rename it to save it. Under file, choose "Save as" and then enter the name of the file. The naming scheme for this form is Institution-Year-OAN number-Course Title.

Example, if you were ABC Community College, and you were submitting your Calculus110 course, the name of the file would be ABC-2005/06-OMT005-Calculus110. If two (or more) courses are required to fulfill that same OAN, you would submit ABC-2005/06-OMT005-Calculus110Calculus111.

When you are done with your submissions, please send them electronically to the Ohio Board of Regents at [atpanels@regents.state.oh.us](mailto:atpanels@regents.state.oh.us) so we can keep your information on file.

If you encounter any problems or have any questions, please contact any of the individuals listed bellow:

Jim Ginzer (614) 752-9486 [jginzer@regents.state.oh.us](mailto:jginzer@regents.state.oh.us)

Sam Stoddard (614) 752-9532 [sstoddard@regents.state.oh.us](mailto:sstoddard@regents.state.oh.us)

Nick Wilson (614) 466-4158 [nwilson@regents.state.oh.us](mailto:nwilson@regents.state.oh.us)