

CBM003 ADD/CHANGE FORM

Undergraduate Council
 New Course Course Change
 Core Category: Life/Phys Sci Effective Fall ~~2013~~ 2014

or

Graduate/Professional Studies Council
 New Course Course Change
 Effective Fall 2013

1. Department: BIOL/BCHS College: NSM

APPROVED SEP 4 2013
MM

2. Faculty Contact Person: L. Williams Telephone: 3-2637 Email: lrwilliams@uh.edu

3. Course Information on New/Revised course:

• Instructional Area / Course Number / Long Course Title:

BIOL / 1320 / General Biology 2

• Instructional Area / Course Number / Short Course Title (30 characters max.):

BIOL / 1320 / GENERAL BIOLOGY 2

• SCH: 3 Level: FR CIP Code: L Lect Hrs: 3 Lab Hrs: 0

26.0101.0002

RECEIVED APR - 4 2013

4. Justification for adding/changing course: To meet core curriculum requirements

5. Was the proposed/revised course previously offered as a special topics course? Yes No

If Yes, please complete:

• Instructional Area / Course Number / Long Course Title:

___ / ___ / ___

• Course ID: _____ Effective Date (currently active row): _____

6. Authorized Degree Program(s): _____

• Does this course affect major/minor requirements in the College/Department? Yes No

• Does this course affect major/minor requirements in other Colleges/Departments? Yes No

• Can the course be repeated for credit? Yes No (if yes, include in course description)

7. Grade Option: Letter Instruction Type: Lect (Note: Lect/Lab info. must match item 3, above.)

8. If this form involves a change to an existing course, please obtain the following information from the course inventory: Instructional Area / Course Number / Long Course Title

___ / ___ / ___

• Course ID: _____ Effective Date (currently active row): _____

9. Proposed Catalog Description: (If there are no prerequisites, type in "none".)

Cr. 3. (3-0). Prerequisite: MATH 1310 or MATH 1311. Designed for nonscience majors; does not satisfy requirements for biology majors and preprofessional students. Introduction to general principles of

10. biology with special orientation toward man and the natural world. Credit may not be received for both _____ BIOL 1361:1362 and 1310:1320.

Print/Type Name: _____

REQUEST FOR COURSES IN THE CORE CURRICULUM

Originating Department or College: Biology and Biochemistry

Person Making Request: Lawrence R. Williams Telephone: 713-743-2637

Email: lrwilliams@uh.edu

Dean's Signature: _____

Date: [Click here to enter text.](#)

Course Number and Title: BIOL 1320; General Biology

Please attach in separate documents:

Completed CBM003 Add/Change Form with Catalog Description

Syllabus

List the student learning outcomes for the course (Statements of what students will know and be able to do as a result of taking this course. See appended hints for constructing these statements):

1. Explain the methods of science and its application using experiments, data, reasoning, and logic as opposed to opinion.
2. Name the general tissues of animals and explain their functions.
3. Name the organ systems of a typical mammal and relate the structure of each to its function.
4. Associate each organ system to its homeostatic function(s).
5. Recognize the integration of organ systems' functions in the organism.
6. Recognize diseased organ systems that occur in the live of an organism.
7. Compare and contrast the structure and functions of tissues and organs of plants as another multicellular organism.
8. Summarize the historical development of Ecology as a biological field.
9. Name factors that influence earth's climate.
10. Explain the relationship between climate and the earth's biomes.
11. Explain the organization of Ecology from populations to biosphere.
12. Name and explain important principles involved in the study of Ecology's different levels.
13. Demonstrate understanding of general ecological principles (from different levels of Ecology) with respect to Human Ecology.

14.Explain factors threatening and the ways to preserve biodiversity.

15.Evaluate the tension between needs of humans and the value of preserving biodiversity.

Component Area for which the course is being proposed (check one):

***Note:** If you check the Component Area Option, you would need to also check a Foundational Component Area.

Communication

American History

Mathematics

Government/Political

Science

Language, Philosophy, & Culture

Social & Behavioral Science

Creative Arts

Component Area Option

Life & Physical Sciences

Competency areas addressed by the course (refer to appended chart for competencies that are required and optional in each component area):

Critical Thinking

Teamwork

Communication Skills

Social Responsibility

Empirical & Quantitative Skills

Personal Responsibility

Because we will be assessing student learning outcomes across multiple core courses, assessments assigned in your course must include assessments of the core competencies. For each competency checked above, indicated the specific course assignment(s) which, when completed by students, will provide evidence of the competency. Provide detailed information, such as copies of the paper or project assignment, copies of individual test items, etc. A single assignment may be used to provide data for multiple competencies.

Critical Thinking:

Students are required to comprehend what are sometimes two or more seemingly isolated facts, draw and understanding of their relation then answer questions. Other cases may require comprehending a set of circumstances then relating them to draw a conclusion.

CLASSROOM EXAMPLES (using clicker questions):

Various clicker questions similar to those in the homework and exam examples are presented in class during lecture time. Please see below. Additionally, students are asked "follow-up" questions. Such

questions probe why answers are wrong in an effort to stimulate thoughtful consideration of the process of determining correct answers.

EXAMPLE:

Which of the following functions together?

- a. target cells;
- b. synaptic clefts;
- c. hormones;
- d. a and b;
- e. b and c.

The correct answer is b. Students would next be asked where a, b, and c are found and the similarities of each in relation to the other. The (anticipated) outcome is the understanding that target cells have meaningful function upon reception of appropriate hormones given the understanding (by the student) that through negative feedback system hormones are released, are meaningful only to target cells, and target cells respond to alleviate the need. Then hormone production ceases. Synaptic clefts are found in the nervous system which functions in a very different way. Critical differences are further probed differentiating the endocrine and nervous systems as well as their similarities.

EXAMPLE:

What factors influence pH homeostasis in a typical mammal?

- a. Hydrogen ion excretion by the kidney;
- b. Release of HCL in the stomach during digestion;
- c. Detection of a drop in pH by the Respiratory Control Center (RCC);
- d. Detection of a drop in pH by the Cardiac Control Center (CCC);
- e. All the above except b.

Students must first understand that individually the excretory, respiratory, and circulatory systems each play a role in pH homeostasis function as a result of detection of lowering of pH in the blood which will be reflected in the cerebral spinal fluid that bathes the brain and that all those systems will respond. The RCC and CCC will increase activity of their respective systems and the kidneys will excrete hydrogen ion and keep sodium ions. The stomach activity, while influencing release of HCL for digestion does not involve lowering of pH other than inside the stomach. Questions posed to the class as a follow-up to

questions like this prod students to analyze what each systems' activities are and whether those activities may threaten the organism.

HOMEWORK EXAMPLES (using publishers' program packet):

1) Which of the following digestive enzymes is present in children but often absent in adults?

- A) sucrase
- B) lactase
- C) lipase
- D) amylase

Student must understand 1) evolutionary importance of nursing in mammals and 2) the difference in gene expression during the life span.

2) Adaptation to terrestrial life required major evolutionary changes. The change from gill breathing to lung breathing was accompanied by important changes in the

Adaptation to terrestrial life required major evolutionary changes. The change from gill breathing to lung breathing was accompanied by important changes in the

association of blood and interstitial fluid.

cardiovascular system.

reproductive system.

manufacture of blood cells.

SubmitMy AnswersGive Up

Students must consider and understand the coevolutionary relationship between the respiratory system and the circulatory system anatomically and physiologically

3) What type of immune response is always disadvantageous to a person?

What type of immune response is always disadvantageous to a person?

complement-mediated

humoral

autoimmune

inflammatory

SubmitMy AnswersGive Up

Students must distinguish normal versus abnormal immune function and understand that autoimmune problems stems from the lack of antibody recognition of "self" (cell surface markers on one's own cells).

4) During kidney dialysis, blood and a dialyzing solution are separated by a semipermeable membrane. For kidney dialysis to work properly, the dialyzing solution should contain _____.

During kidney dialysis, blood and a dialyzing solution are separated by a semipermeable membrane. For kidney dialysis to work properly, the dialyzing solution should contain _____.

a lower solute concentration than blood contains

a higher concentration of urea than blood contains

a lower glucose concentration than blood contains

a lower concentration of urea than blood contains

SubmitHintsMy AnswersGive UpReview Part

Students must understand the normal function of the renal tubule (what is filtered, recovered, and secreted) and use that information to understand kidney dialysis.

5) Recent studies have shown that the onset of puberty in American girls has decreased from an average of 12-13 years of age to as young as 8-10. Many scientists that study premature puberty suggest that steroids in our food and in the environment may be contributing factors, since steroids are known to cross cell membranes and bind to receptors inside cells.

Why are hormones present in our foods? Synthetic testosterone compounds (similar to those used by some athletes) make young animals gain weight faster so they are ready for market sooner. Female animals receive synthetic estrogen to inhibit the reproductive cycle and divert all energy into weight gain. In the United States, up to two-thirds of meat animals are raised using hormones. In addition, hormones are used to increase milk production in dairy cattle.

Scientific investigation of the exact effects of environmental steroids on humans is extremely difficult since there are multiple sources of hormones in the environment. A valid study would require a control group who hasn't been exposed to the chemicals being studied. Since everyone has had some exposure to environmental hormones, no control group is available to use as a reference.

When environmental estrogens trigger premature puberty, the main organs affected are the

After reading the paragraph, answer the question(s) that follow.

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When environmental estrogens trigger premature puberty, the main organs affected are the

ovaries and uterus.

adrenal cortex.

pituitary gland and parathyroid glands.

thyroid gland and pituitary gland.

SubmitMy AnswersGive Up

Students must consider the role of hormones in food sources (animal and plant) and the transfer of those chemicals into their bodies along with the effects of those hormones and societal effects.

6) One of the experiments in phototropism involved cutting off the tips of grass seedlings before exposing them to light from one side. The decapitated seedlings did not bend toward light. A valid conclusion from this experiment would be that

One of the experiments in phototropism involved cutting off the tips of grass seedlings before exposing them to light from one side. The decapitated seedlings did not bend toward light. A valid conclusion from this experiment would be that

light is perceived by the tip of grass plants.

plants cannot engage in photosynthesis without the tip of the plant.

a foil cover over the tip of the seedlings would cause them to bend.

hormones are produced in all parts of the plant.

SubmitMy AnswersGive Up

Students must assess the design of the experiment (particularly to consider what the control would be) and select the logical answer.

7) In the state of Washington, the prevailing winds blow eastward off of the ocean and up and over two mountain ranges. Biologists are searching for a rare fern plant that is known to prefer cool and wet environments, but hasn't been seen in this state for many decades. Where would the biologists most likely find the plant?

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on the west sides of the mountain ranges at lower elevations

on the east sides of the mountain ranges at lower elevations

on the west sides of the mountain ranges at higher elevations

on the east sides of the mountain ranges at higher elevations

SubmitHintsMy AnswersGive UpReview Part

Students must understand the factors influencing climate, the concept of rain-shadow effect due to the effect of air rising over mountains (lose of moisture as the air rises and cools dropping rain on the windward side of a mountain and the lack of rain on the lee side), and microclimate.

8) A hypothetical community on a barren mid-Atlantic island consists of two fish-eating seabirds (the booby and the noddy), the fungi and microorganisms that live on the birds' dung, a tick that feeds on these two birds, a cactus, a moth that feeds on cast-off feathers, a beetle that lives on dung organisms, and spiders that eat the other arthropods. There are no other plants and no lichens. Which of the following choices *incorrectly* pairs a member of this assemblage with its position in the trophic structure?

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cactus, producer

booby, primary consumer

moth, detritivore

fungi, detritivores

SubmitMy AnswersGive Up

This requires the student to understand trophic structure in a community and the likely organisms that fit into each of those trophic levels. May require students to construct a food web.

EXAM EXAMPLES (using publisher's text bank):

Rickets is a softening of the bones that can lead to frequent fractures and skeletal deformities. The legs of a person with rickets tend to bow outward under the force exerted by body weight and movement. British scientists recently found a serious increase in the incidence of rickets and other bone deficiencies among women in Middle Eastern countries who cover their bodies completely to express a form of Muslim religious belief, as well as among their breast-fed children.

Most of the body's vitamin D, which is necessary for calcium absorption by bone tissue, is obtained through sunlight acting on the skin. Doctors warn that women who completely cover their skin don't get enough sunlight to produce the vitamin D necessary for bone health. This lack of sun exposure also lowers the level of vitamin D in their breast milk, which means that their children may develop the same vitamin D deficiencies. Lack of calcium and phosphorous, which are needed for bone repair and replacement, can also lead to rickets. Rickets caused by a dietary

lack of these minerals is more common in developing countries because dairy products and green vegetables, the best sources of calcium, are not commonly eaten.

1) As a physician caring for a nursing Muslim woman who has chosen to cover her skin but is concerned about rickets developing in her baby, you might advise her to

- A) exercise more.
- B) eats lots of meat and potatoes.
- C) take vitamin D and calcium supplements.
- D) give up smoking.

Answer: C

Topic: 30.4, 30.5

Skill: Application/Analysis

Student must consider the source of the problem and determine the best way to alleviate the problem given the nature of culture, religious practice, and diet.

2) Which of the following digestive enzymes is present in children but often absent in adults?

- A) sucrase
- B) lactase
- C) lipase
- D) amylase

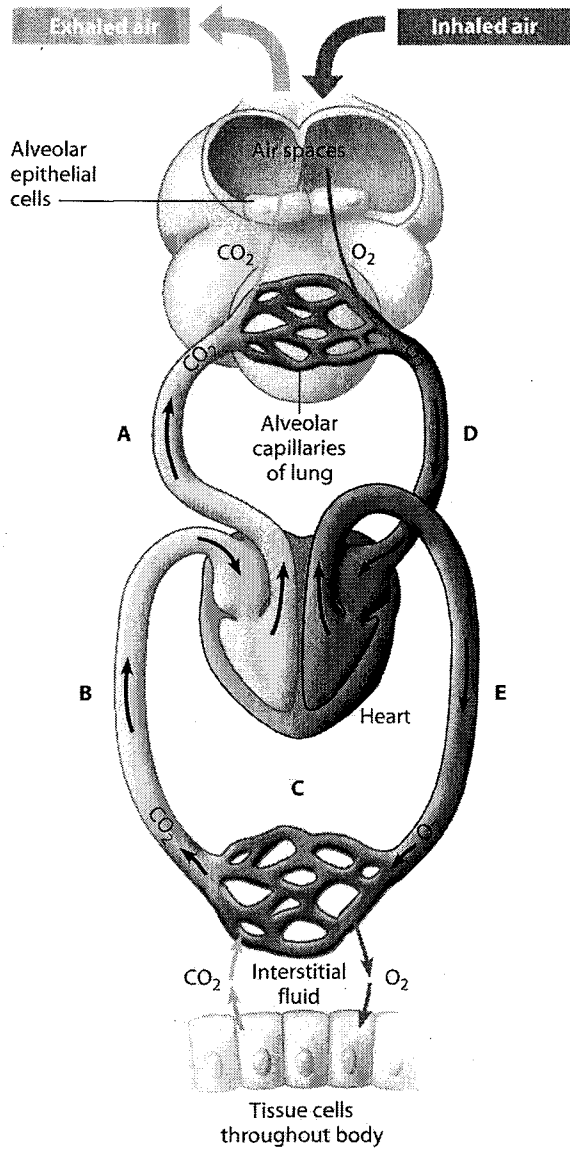
Answer: B

Topic: 21.10

Skill: Application/Analysis

Expects students to understand the value of each enzyme, that digestive function changes during the lifespan, and to pursue an understanding of the value of milk early in life (nursing in mammals).

3) At which point(s) in the figure is blood oxygen-rich?



A) points A and B

B) points A and D

C) point C only

D) points D and E

Answer: D

Topic: 22.10

Skill: Knowledge/Comprehension

Requires the understanding of the 4-chambered heart, double circulation system of higher vertebrates with respect to blood flow to the lungs and body with the specific comprehension of gas exchange. (During lecture students are pressed to compare to a fish or amphibian system with respect to evolutionary adaptation to metabolism.)

4) _____ can destroy infected cells.

- A) Macrophages
- B) Plasma cells
- C) B cells
- D) Cytotoxic T cells

Answer: D

Topic: 24.12

Skill: Application/Analysis

The immune system has many cells with similar names and function on one cell line may vary through time. Additionally, some cells duplicate function. Therefore, it is a complex in which students demonstrate comprehension, but must further differentiate temporal aspects of function.

5) Which of the following is likely to have the lowest concentration of O₂?

- A) warm salt water
- B) cool salt water
- C) cool fresh water
- D) air

Answer: A

Topic: 22.3

Skill: Knowledge/Comprehension

Although seemingly simple, this question requires the student to understand the difference between oxygen concentration in air and water, as well as the various factors that influence oxygen dissolving in water. Without thorough consideration C might seem obvious answer.

The largest estuary in the United States is the Chesapeake Bay, which extends through six states, including Maryland, Virginia, and Pennsylvania. The bay is one of the most productive natural areas in the world. It's home to thousands of plants and animals, including many commercially important species.

The water of the bay is relatively shallow. Many areas are no more than 10 feet deep, with an average depth of 30 feet. Light penetrates the shallow water and supports the submerged plants that provide food and shelter for the many species living in the bay ecosystem. However, like many estuaries, the bay receives large amounts of fertilizer runoff from farms, lawns, and wastewater treatment facilities.

6) Which of the following is the most probable sequence of events when fertilizer runoff reaches

the Bay?

- A) submerged vegetation increases, more food for fish and shellfish, fish and shellfish populations increase
- B) phytoplankton population increases, more food for fish and shellfish, fish and shellfish populations increase
- C) phytoplankton population increases, blocks sunlight to submerged vegetation, submerged vegetation dies, fish and shellfish populations decrease
- D) submerged vegetation decreases, fish and shellfish feed on decaying plants, phytoplankton feed on fish and shellfish, commercial fisheries decline

Answer: C

Topic: 34.6, 34.7

Skill: Application/Analysis

7) Fertilizer runoff contains _____, which are the most important limiting factors for phytoplankton growth.

- A) carbon and hydrogen
- B) oxygen and carbon dioxide
- C) nitrogen and phosphorus
- D) sulfur and magnesium

Answer: C

Topic: 34.6, 34.7

Skill: Knowledge/Comprehension

Communication Skills:

CLASSROOM EXAMPLES (using clicker questions):

1. Students will answer clicker questions individually. The results of their answers will be recorded but students will not know whether they were correct. The same clicker question will be posed a second time and students will be permitted to discuss the question with a partner (think-pair-share) and answer a second time. Such communications permit students to analyze material and argue their viewpoint.
2. Students will work together at times to develop concept maps. Such diagrams permitted the logical development of subtopics in relation to a general theme. Such organized materials give a visual aspect to the organization of a topic. Again, students must argue and discuss the logic and development of the pattern of the map.

HOMEWORK EXAMPLES (using publishers' program packet):

Students will be required to write two (2) summaries, each two (2) pages long with citations on a topic of controversy related to lecture material. Each assignment will be graded on clarity of argument, grammar, use of citations, and citation clarity.

Empirical & Quantitative Skills:

CLASSROOM EXAMPLES (using clicker questions):

Various clicker questions similar to those in the homework and exam examples are presented in class during lecture time. Please see below.

EXAM EXAMPLES (using publishers' test bank):

- 1) Why do cigarette smokers cough more than nonsmokers?
- A) The tar in cigarette smoke tends to make alveoli stick together, and coughing separates them.
 - B) Cigarette smoke harms the cilia that normally move debris out of the lungs, and coughing is the remaining way to clean the lungs.
 - C) Cigarette smoking partially paralyzes the muscles in the lungs, resulting in an increased residual volume, and coughing exchanges this "dead air."
 - D) By raising the pressure in the lungs, coughing forces more oxygen into the blood.

Answer: B

Topic: 22.7

Skill: Knowledge/Comprehension

Though a straight-forward question, this not only allows students to use knowledge gained by provokes reflection on personal experience of their own and with others and relate that experience to factual information.

Ron and Tiffany are studying circulatory system function. They designed an experiment to test whether the diameter of a tube would affect the rate of flow through the tube. They ran water from a large container through five tubes with different diameters for exactly 30 seconds for each tube. They measured the volume of liquid that passed through the tube in the 30-second period. They tested each tube three times and poured the water back into the container after each test. The results of the experiment are shown in the following table.

	Diameter of Tube (cm)	Average Volume of Fluid (ml)
Tube A	0.5	210
Tube B	0.6	350
Tube C	0.7	480
Tube D	0.8	600
Tube E	0.9	975

2) Which statement best summarizes the results of the experiment?

- A) The larger the tube diameter, the greater the flow volume.
- B) The larger the tube diameter, the smaller the flow volume.
- C) The tube diameter shows no clear relationship to flow volume.
- D) The flow rate through the largest tube is approximately twice that of the smallest.

Answer: A

Topic: 23.8

Skill: Application/Analysis

3) The results suggest that the smallest flow volume would be found in the _____ of the human body.

- A) arteries
- B) veins
- C) capillaries
- D) arterioles

Answer: C

Topic: 23.8

Skill: Application/Analysis

Students must interpret data, then apply to the structure of the circulatory system.

To protect U.S. soldiers serving overseas, each soldier receives vaccinations against several diseases, including smallpox, before deployment. Following intelligence about an imminent smallpox threat, the Army wants to ensure that soldiers stationed in Iraq are fully protected from exposure to the disease, so all the soldiers in the threat zone are given a second vaccination against smallpox.

3) The first vaccination provides immunity because

- A) a localized inflammatory response is initiated.
- B) the vaccine contains manufactured antibodies against smallpox.
- C) antigenic determinants in the vaccine activate B cells, which form plasma cells as well as memory cells.
- D) the vaccine contains antibiotics and other drugs that kill the smallpox virus.

Answer: C

Topic: 24.7

Skill: Application/Analysis

4) The second vaccination is beneficial because

- A) it contains plasma cells that survive longer than 4-5 days.
- B) it stimulates production of a higher concentration of antibodies in the bloodstream.
- C) it requires two injections to stimulate antibody formation.
- D) it keeps previously produced plasma cells circulating in the bloodstream.

Answer: B

Topic: 24.7

Skill: Application/Analysis

Students must comprehend the different immune system activities for a primary and secondary infection, then interpret the case posed in each question. This example relates directly to the occurrence of many childhood infections that are suffered once, then not again.

5) It is a cool winter evening, and you are feeling a little chilled. To warm yourself up, you sip some warm tea. As you swallow, you can feel the tea warm your mouth and throat. This tea is warming you up by the process of

- A) convection.
- B) induction.
- C) conduction.
- D) radiation.

Answer: A

Topic: 25.2

Skill: Application/Analysis

Students understand this by experience, but do not necessarily know the science behind the example, doing so reinforces the importance of scientific understanding using logic and reasoning (not opinion).

The redwood groves in Northern California are one of America's greatest natural resources. Redwoods can live more than 2,000 years and grow taller than 350 feet. When tourism became popular in the late 1800s, large tunnels were cut through the center of several of these giant trees to allow wagons to pass through (and to attract tourists to the location). Even today, visitors wait in line to be photographed driving their cars through a tunnel. When the groves were converted into national parks, the tunneling was discontinued, but several tunneled trees are still alive.

6) When the redwood tunnels were first constructed, not much consideration was given to the long-term effects of a tunnel on a tree's health. Nevertheless, many trees have survived more than 100 years after the tunnel was cut through their trunks. This is possible because

A) the wood rays run laterally through the trunk, so water and nutrients can still travel to all the tree's tissues.

B) the remaining heartwood is able to transport water and nutrients through the trunk.

C) the secondary xylem and phloem run vertically on either side of the vascular cambium and aren't completely disrupted by the tunnel.

D) mature cork cells are dead, so their loss doesn't disrupt nutrient and water transport.

Answer: C

Topic: 31.8

Skill: Application/Analysis

Knowledge of the tissues in the trunk and their placement is important. It is as or more important to know the functions of those tissues and integrate tissue placement and function to the mechanical damage to the trunk to determine whether a tree may survive.

HOMEWORK EXAMPLES (using publishers' program packet):

1) In an ecosystem where 500,000 kcal of sunlight is available for producers, approximately how much chemical energy will be contained in secondary consumers?

In an ecosystem where 500,000 kcal of sunlight is available for producers, approximately how much chemical energy will be contained in secondary consumers?

50 kcal

5,000 kcal

500 kcal

5 kcal

SubmitHintsMy AnswersGive UpReview Part

Students must understand first two laws of thermodynamics and the efficiency of energy transfer in a community.

2) Eutrophication of a lake could occur if

Eutrophication of a lake could occur if

phosphate-rich detergents were dumped into the lake.

runoff from overfertilized lawns was prevented from reaching the lake.

fertilizers were applied in an insoluble form.

fish were removed.

SubmitMy AnswersGive Up

Gives students the scientific understanding as they relate to over-growth of algae in some waterway they have experienced.

3) Which of the following statements is/are accurate based on the information in this graph?

Which of the following statements is/are accurate based on the information in this graph?

Loss of forested land appears to be greater in the developing world than in the developed world.

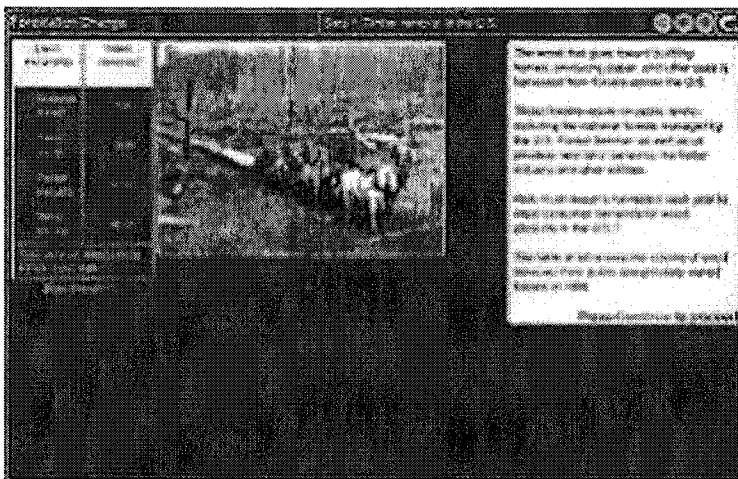
The world overall is experiencing a net loss of forest.

The information in this graph is consistent with the information in the graph of harvesting and growth in U.S. forests from Step 2.

All of the above.

None of the above.

SubmitMy AnswersGive Up



<http://session.masteringbiology.com/myct/itemView?problemID=1143922&openedFrom=itemLibrary&preview=assignItem2009887>

[Click here](#) to complete the graphing activity.

To complete this questions students use data in the table to make a graph, then interpret the graph.

4) The density of Douglas firs in an old-growth forest is estimated by counting the Douglas firs in four sample plots of 1 hectare each. The number of fir trees in the plots is 10, 12, 7, and 11, respectively. What is the estimated density of firs in the forest?

The density of Douglas firs in an old-growth forest is estimated by counting the Douglas firs in four sample plots of 1 hectare each. The number of fir trees in the plots is 10, 12, 7, and 11, respectively. What is the estimated density of firs in the forest?

25 trees per hectare

10 trees per hectare

20 trees per hectare

5 trees per hectare

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Students must do the calculation.

5) A test tube is inoculated with 1×10^3 cells of a bacterial strain that has a generation time of 30 minutes. The carrying capacity of the test tube for this strain is 6×10^9 cells. What will the bacterial population be after 90 minutes of culturing?

A test tube is inoculated with 1×10^3 cells of a bacterial strain that has a generation time of 30 minutes. The carrying capacity of the test tube for this strain is 6×10^9 cells. What will the bacterial population be after 90 minutes of culturing?

1×10^{12}

3×10^3

8×10^3

1×10^9

SubmitMy AnswersGive Up

Students must comprehend and apply the concept of exponential growth.

6) The death by bubonic plague of about one-third of Europe's population during the fourteenth century is a good example of

The death by bubonic plague of about one-third of Europe's population during the fourteenth century is a good example of

carrying capacity.

abiotic factors limiting population size.

a density-independent effect.

a density-dependent effect.

SubmitMy AnswersGive Up

Students must comprehend and distinguish between density-dependent and density-independent growth as well as the factors that influence both. This also relates to a historical event they are familiar with.

7) When you are very nervous, perhaps before you must speak in front of your college class, you notice that your mouth is dry and your heart is racing. This is most likely due to stimulation by the

When you are very nervous, perhaps before you must speak in front of your college class, you notice that your mouth is dry and your heart is racing. This is most likely due to stimulation by the

enteric division of your autonomic nervous system.

motor division of your parasympathetic nervous system.

sympathetic division of your autonomic nervous system.

parasympathetic division of your autonomic nervous system.

SubmitMy AnswersGive Up

This helps students relate an experience to the scientific factors influencing that experience.

8) A food label indicates that the contents of a product contain 12 grams of total carbohydrate per serving, 7 grams of sugar per serving (simple carbohydrate), and 2 grams of fiber per serving. How many grams of digestible complex carbohydrate are there per serving?

A food label indicates that the contents of a product contain 12 grams of total carbohydrate per serving, 7 grams of sugar per serving (simple carbohydrate), and 2 grams of fiber per serving. How many grams of digestible complex carbohydrate are there per serving?

5

2

3

12

SubmitMy AnswersGive Up

Students must understand the concept of digestible complex carbohydrate and make the calculation.

Teamwork:

CLASSROOM EXAMPLES (using clicker questions):

The following examples come from the Communication section, but here the emphasis is the fact that students work together to develop skills to convince their peers they are correct or to accept the logic of others. Regardless, the spirit of trust and reasoning is developed.

1. Students will answer clicker questions individually. The results of their answers will be recorded but students will not know whether they were correct. The same clicker question will be posed a second time and students will be permitted to discuss the question with a partner (think-pair-share) and answer a second time. Such communications permit students to analyze material and argue their viewpoint.

2. Students will work together at times to develop concept maps. Such diagrams permitted the logical development of subtopics in relation to a general theme. Such organized materials give a visual aspect to the organization of a topic. Again, students must argue and discuss the logic and development of the pattern of the map.

Social Responsibility and Personal Responsibility:

Although not required, these are addressed by learning the organ system functions, understanding disease states and abuse of systems and organs, and relating such to personal and societal effects.

Additionally, the ecology section addresses these by understanding the concepts of ecology relating them to humans and the comprehension that we cannot violate these concepts without consequences. Our choices (personally) influence society.

Will the syllabus vary across multiple section of the course? Yes No

If yes, list the assignments that will be constant across sections:

Inclusion in the core is contingent upon the course being offered and taught at least once every other academic year. Courses will be reviewed for renewal every 5 years.

The department understands that instructors will be expected to provide student work and to participate in university-wide assessments of student work. This could include, but may not be limited to, designing instruments such as rubrics, and scoring work by students in this or other courses. In addition, instructors of core courses may be asked to include brief assessment activities in their course.

Dept. Signature: _____

The following courses have been reviewed and approved by the NSM Curriculum Committee to meet the new core requirements. Given the length of the individual submissions I have elected to submit these requests by electronic means only.

Natural Sciences: Core Courses

BIOL 1309 – Human Genetics and Society

BIOL 1310 – General Biology

~~BIOL 1320 – General Biology~~

BIOL 1361 - Introduction to Biological Science I

BIOL 1362 - Introduction to Biological Science II

CHEM 1301 – Foundations of Chemistry

CHEM 1331 – Fundamentals of Chemistry I

CHEM 1332 – Fundamentals of Chemistry II

GEOL 1302 - Introduction to Global Climate Change

GEOL 1330 - Physical Geology

GEOL 1340 - Introduction to Earth Systems

GEOL 1350 - Introduction to Meteorology

GEOL 1360 - Introduction to Oceanography

GEOL 1376 - Historical Geology

PHYS 1301 - Introductory General Physics I

PHYS 1302 - Introductory General Physics II

PHYS 1321 - University Physics I

PHYS 1322 - University Physics II

Mathematics: Core Courses

MATH 1310 – College Algebra

MATH 1311 – Elementary Mathematical Modeling

Math/Reasoning: Core Courses

COSC 1306 – Computer Science and Programming

MATH 1330 - Precalculus

MATH 1431 - Calculus I

MATH 1432 - Calculus II

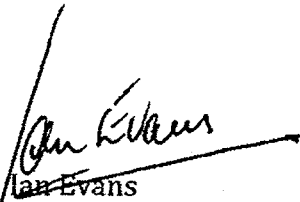
MATH 2311 - Introduction to Probability and Statistics

Writing in the Disciplines: Core Courses

BCHS Biochemistry Lab II

BIOL 3311 - Genetics Lab

PHYS 3313 - Advanced Lab I



Ian Evans

Associate Dean

4/4/13

BIOLOGY 1320, SECTION XX COURSE OUTLINE for Spring 20XX

Dr. L. R. Williams, 221F SR2 Building (#551) (713) 743-2637, lrwilliams@uh.edu
OFFICE HOURS: Tues 2:30-3:30 pm and Wed 1-2 pm or BY APPOINTMENT

DAYS PAGES	SUBJECTS	CHAPTERS or
15, 17 Jan	Introduction; Science; Animal organization and tissues	1,20, handout
22,24 Jan	Integumentary, Skeletal, and Muscular systems	30
29,31 Jan	Muscular and Nervous system	30, 28
5,7 Feb	Nervous and Endocrine systems, EXAM ONE	28, 26
12,14 Feb	Gas Exchange, Circulation, and Immunity	22, 23, 24
19,21 Feb	Immunity, Temp Regulation and Water Balance	24, 25
26, 28 Feb	Water Balance and Digestion	25, 21
5,7 Mar	Reproduction and Development, EXAM TWO	27
12,14 Mar	SPRING BREAK, NO CLASSES	have some fun
19,21 Mar	Plant Biology.	31,32,33
26,28 Mar	Introduction to Ecology, Earth and Biomes	34
2,4 Apr	Earth and Biomes, EXAM THREE	34
9,11 Apr	Population Ecology,	36
16,18 Apr	Community ecology, Ecosystems	37
23,25 Apr	Human ecology, Conservation Biology	pp. 732-736; Ch 38

**FINAL EXAM IS TUESDAY, XX MAY 20XX, 8:00 AM, In our regular
classroom**

This outline is subject to change without notice.

**ALL VIOLATIONS OF ACADEMIC HONESTY WILL BE HANDLED IN MOST SERIOUS
MANNER.**

HOW GRADES WILL BE EARNED:

Exams will be taken as scheduled on **Thursdays**. **Excused exams may be made up and I reserve the right to the format of those exams.** All exams will be **50 multiple questions (points) each**.

Additional points will be earned from in-class quizzes using your Turning Point (Technologies) response pad (clickers; more information about the pads is below). Additional use of the Clickers will include 1) survey questions to assess opinions (done anonymously) and 2) questions imbedded in lectures to assess comprehension.

Homework will be assigned using Mastering Biology, the software purchased with your text (may have been purchased separately). More information about this is below.

Two (2) summaries, each two (2) pages long with citations on a topic of controversy related to lecture material. Each assignment will be graded on clarity of argument, grammar, use of citations, and citation clarity.

HOW YOUR GRADE WILL BE CALCULATED:

80%	EXAM SCORES
5%	CLICKER POINTS
10%	HOMEWORK; Mastering Biology
5%	Two required short summaries

THERE IS ABSOLUTELY NO EXTRA CREDIT.

GRADE SCALE TO BE USED:

A	>92%
A-	90-92%
B+	88-89%
B	83-87%
B-	80-82%
C+	78-79%
C	73-77%
C-	70-72%
D+	68-69%
D	63-67%
D-	60-62%
F	<60

XXday, XX Jan 20XX: last day to drop without a grade or without this course counting toward your enrollment cap (DROP THROUGH MyUH ON LINE and double check to see you are dropped).

XXday XX Mar 20XX: last day to drop the course with a "W". YOU DROP THROUGH MyUH ON LINE (and double check to see you are dropped).

IMPORTANT NOTICE: I do not drop students from my class. You are responsible for your enrollment management.

What you need to purchase for this class:

PURCHASE THREE THINGS: TEXT, MASTERING BIOLOGY ACCESS, TURNING POINT TECHNOLOGIES "CLICKER"

TEXT: Biology, concepts and connections, 7th edition, by Campbell et al. The Custom text with Mastering Biology and access to the e-text may be purchased online directly from the publisher for \$49.50 along with Mastering Biology at:

<http://www.mypearsonstore.com/bookstore/product.asp?isbn=1256456365>

ISBN – 1256456365

This same customized text with Mastering Biology will be available in the UH Bookstore, but will cost more because of the Bookstore markup.

If you choose to purchase the text and Mastering Biology in another manner the text is:

Campbell Biology, 7th edition by Reece, Taylor, Simon, and Dickey.

No other books are required.

CLICKER: Turning Point (Technologies) response card (also called a clicker or personal response pad), available in the UH University Center. This pad will be used for answering in-class quiz questions.

(Additional use of the Clickers will include 1) survey questions to assess opinions (done anonymously) and 2) questions imbedded in lectures to assess comprehension.)

ELECTRONIC DEVICES IN THE CLASSROOM.

YOUR CELL PHONES, PAGERS, OR OTHERS DEVICE SHOULD BE OFF OR MUTED. YOU SHOULD NOT BE TEXTING DURING CLASS OR ANSWERING TEXTS. IF YOU USE A LAPTOP, YOU SHOULD BE TYPING NOTES OR VIEWING THE PPT. ANY VIOLATORS WILL BE ASKED TO LEAVE THE CLASSROOM. THIS IS UNIVERSITY OF HOUSTON POLICY.

GOALS. Upon successful completion of this course you should:

1. Explain the methods of science and its application using experiments, data, reasoning, and logic as opposed to opinion.
2. Name the general tissues of animals and explain their functions.
3. Name the organ systems of a typical mammal and relate the structure of each to its function.
4. Associate each organ system to its homeostatic function(s).
5. Recognize the integration of organ systems' functions in the organism.
6. Recognize diseased organ systems that occur in the live of an organism.
7. Compare and contrast the structure and functions of tissues and organs of plants as another multicellular organism.
8. Summarize the historical development of Ecology as a biological field.
9. Name factors that influence earth's climate.
10. Explain the relationship between climate and the earth's biomes.
11. Explain the organization of Ecology from populations to biosphere.
12. Name and explain important principles involved in the study of Ecology's different levels.
13. Demonstrate understanding of general ecological principles (from different levels of Ecology) with respect to Human Ecology.
14. Explain factors threatening and the ways to preserve biodiversity.
15. Evaluate the tension between needs of humans and the value of preserving biodiversity.

SUGGESTIONS TO HELP YOU WITH THIS COURSE:

1. Come to class. You selected this class at this time and it is costing money for you to be here. Get your money's worth. Always remember that procrastination is your worst enemy and apathy inhibits learning.
2. Take good notes and use them. Powerpoint presentations will be posted on Blackboard so you can download them for easier note-taking.
3. Read your textbook. Minimally, read what is covered in lecture. Better yet, read each chapter completely while focusing on lecture material.
4. Pay close attention to graphs, figures, and pictures that illustrate concepts and ideas.
5. Keep up (or ahead?) Study. I do not expect that you will properly or fully understand what is covered in a lecture at the end of the lecture. You will need to review your notes, read the text, and think about things. Better yet, discuss what you are studying with someone (see # 7 below). Most importantly, do not expect to "*learn*" everything the weekend (or night!) before the exam.
6. If you need help, contact me. I have office hours. I will return your calls and emails (emails are preferred). If necessary, I will make an appointment with you. It is important to see me early in the semester when I can suggest ways to improve your methods of study. Do not wait until it is too late.
7. Study groups are a great way to learn. Try to organize one using the Discussion on Blackboard. In such groups you will find yourself teaching each other and when you teach, you also learn.